City of Turner, Oregon

Local Wetland and Riparian Area Inventory

Final

November 20, 2000

Prepared for
City of Turner and Division of State Lands

by

Mid-Willamette Valley
Council of Governments
105 High St SE
Salem, Oregon 97301-3667

TABLE OF CONTENTS

1. INTRODUCTION 1

1.1. REPORT FORMAT 1
1.2. DEFINITIONS 1

2. STUDY AREA CHARACTERISTICS 1

2.1. SETTING 1
2.1.1. Culture and Industry 4
2.2. CLIMATE 5
2.3. GEOMORPHOLOGY 7
2.4. GEOLOGY AND SOILS 9
2.4.1. Geology 9
2.4.2. Soils 13
2.5. HYDROLOGY 18
2.5.1. Hydrologic Basin Designation 18
2.5.2. Water Areas and Related Resources 20
2.5.3. Structural Controls and Flow Modification 24
2.5.4. Groundwater 25
2.5.5. Water Quality 26
2.6. ECOREGION 27
2.6.1. Overview 27
2.6.2. Local Vegetation Communities 28
2.6.3. Fish and Wildlife Habitat 28
2.7. DEVELOPMENT LIMITATIONS 31

3. PROJECT METHODOLOGY 35

3.1. LOCAL WETLAND INVENTORY METHODOLOGY 35
3.1.1. Routine On-site Verification 36
3.1.2. Routine Off-Site Verification 40
3.2. PUBLIC INVOLVEMENT 40
3.3. WETLANDS QUALITY ASSESSMENT 41
3.3.1. The Oregon Freshwater Assessment Methodology 41
3.3.2. Wetlands of Special Interest For Protection 42
3.3.3. Wetland Characterization 42
3.3.4. Function and Condition Assessment 42
3.4. RIPARIAN AREA INVENTORY 43
3.4.1. Riparian Functions 43
3.4.2. Urban Riparian Inventory and Assessment Guide 44

4. CARTOGRAPHY 46

5. LOCAL WETLAND INVENTORY AND ASSESSMENT RESULTS 47

5.1. LOCAL WETLAND INVENTORY RESULTS 47
5.1.1. Study Area Wetland Acreages, Numbers, and Types 47
5.1.2. Subwatershed Distribution of Wetlands 49
5.2. OREGON FRESHWATER WETLAND ASSESSMENT METHODOLOGY RESULTS 55
5.2.1. Wetlands of Special Interest for Protection 55
5.2.2. Wetland Quality Assessment 55

6. SIGNIFICANT WETLANDS DETERMINATION 61

6.1. LOCALLY SIGNIFICANT WETLANDS CRITERIA 61

6.2. APPLYING SIGNIFICANT WETLAND CRITERIA TO THE LWI STUDY AREA 61
6.2.1. Locally Significant Wetlands 61

7. URBAN RIPARIAN INVENTORY RESULTS 62

7.1.1. Water and Riparian Resources 62
7.2. RIPARIAN AREA DISTRIBUTION 64
7.3. RIPARIAN AREA ASSESSMENT RESULTS 68
7.3.1. Water Quality 68
7.3.2. Flood Management 68
7.3.3. Thermal Regulation 70
7.3.4. Wildlife Habitat 70

8. PROJECT SUMMARY 73

8.1. WETLAND RESOURCES 73
8.2. RIPARIAN RESOURCES 75

9. REFERENCES 77

10. APPENDIX A: GLOSSARY

11. APPENDIX B: DETAILED SOIL DESCRIPTIONS

12. APPENDIX C: WETLAND CHARACTERIZATION SHEETS, OFWAM SUMMARY SHEET, & LOCALLY SIGNIFICANT WETLAND EVALUATION

13. APPENDIX D: WETLAND DETERMINATION DATA FORMS

14. APPENDIX E: LIST OF TAX LOTS AFFECTED BY MAPPED WETLANDS

15. APPENDIX F: RIPARIAN AREA WIDTH DETERMINATIONS, CHARACTERIZATION SHEETS, & FUNCTION ASSESSMENT RESULTS

16. APPENDIX G: PLANT LIST

17. APPENDIX H: FSA AERIAL PHOTOGRAPHY OF FARMED AREAS

18. APPENDIX I: STAFF QUALIFICATIONS

LIST OF TABLES

TABLE 1. UGNA COMPREHENSIVE PLAN LAND USE DESIGNATIONS 5
TABLE 2. DESCRIPTION OF GEOLOGY IN TURNER AREA 10
TABLE 3. DESCRIPTION OF SOILS IN THE TURNER STUDY AREA 14
TABLE 4. SELECTED INFORMATION ABOUT TURNER STUDY AREA SOILS 16
TABLE 5. SOURCES CONSULTED TO IDENTIFY WATER RESOURCES 20
TABLE 6. SUMMARY OF WETLAND INFORMATION FROM NWI MAP 23
TABLE 7. SELECTED PLANT & ANIMAL SPECIES THAT ARE RARE, THREATENED, OR ENDANGERED WITH EXTINCTION 30
TABLE 8. PLANT INDICATORS USED TO DETERMINE WETLAND STATUS 39
TABLE 9. DISTRIBUTION OF WETLAND AREA BY COWARDIN CLASSIFICATION 48
TABLE 10. SUBWATERSHED WETLAND DISTRIBUTION BY TYPE & SIZE 50
TABLE 11. OFWAM ASSESSMENT RESULTS FOR EACH WETLAND 57
TABLE 12. LOCALLY SIGNIFICANT WETLANDS IN TURNER 61
TABLE 13. CLASSIFYING AND CODING RIPARIAN AREAS 63
TABLE 14. SUMMARY OF RIPARIAN FUNCTION ASSESSMENT 67

LIST OF FIGURES

Figure 1. Physiographic Map of the Willamette Valley 2
Figure 2. Vicinity Map 3
Figure 3. Turner Comprehensive Plan Map 6
Figure 4. Topographic and Subwatershed Map of Turner Area. 8
Figure 5. Geology in the Turner Area 9
Figure 6. Alluvial Fan Deposits and Structure of the Corvallis-Salem Area 11
Figure 7. Location Of Faults In The Turner Area. 12
Figure 8. Soil Map of Turner Area 15
Figure 9. Major Subbasins of the Willamette Basin 18
Figure 10. National Wetland Inventory Map for Turner 22
Figure 11. Turner Flood Insurance Rate Map 33
Figure 12. Project Methodology Flow Chart 35
Figure 13. On-site and Off-Site Verification Areas 37
Figure 14. Wetland Density by Subwatershed 51
Figure 15. Turner Local Wetland Inventory Map 53
Figure 16. Summary of OFWAM Results 60
Figure 17. Riparian Inventory Results Map 65
Figure 18. Summary of Riparian Function Assessment Results 69
Figure 19. Turner Locally Significant Wetland and High Value Riparian Area Map 71

Oregon
John A. Kitzhaber, M.D., Governor

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January 8, 2001

State Land Board
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Governor
Bill Bradbury
Secretary of State
Randall Edwards
State Treasurer

Charles Spies
City Administrator
PO Box 456
Turner, OR 97329

RE: Approval of the City of Turner Local Wetlands Inventory and Assessment

Dear Mr. Spies:

I am pleased to notify you that the Division of State Lands has approved your Local Wetlands Inventory (LWI) and assessment. We appreciate your planning staff working closely with our staff and the wetland consultant to ensure that the inventory meets state LWI requirements (OAR 141-86-180 to 240) and the city's needs. The final inventory requirement is for the city to notify property owners with wetlands mapped on their property within 120 days of this approval. Please send a copy of your landowner notification letter to the Division at the same time.

Approval by the Division means that the LWI becomes part of the Statewide Wetlands Inventory. The LWI must now be used by the city instead of the National Wetlands Inventory for the Wetland Land Use Notification Process (ORS 227.350). The LWI and functional assessment also form the foundation for your wetland planning under Statewide Planning Goal 5, and the LWI must be adopted by the city per the Goal 5 requirements. Please note that when significant wetlands are designated by the city, "non-significant" wetlands may be coded to distinguish them from "significant wetlands" but must not be removed from the approved LWI maps. These wetlands are still subject to state and federal permit requirements.

While considerable effort has been made to accurately identify most wetlands within the study area, the Division's approval does not guarantee that all regulated wetlands have been mapped. Also, exact wetland boundaries have not been surveyed, and there are inherent limitations in mapping accuracy. The Division advises that persons proposing land alteration on parcels containing mapped wetlands first contact the Division, or obtain a wetland boundary delineation by a qualified consultant and submit it to the Division for approval prior to the land alteration.

We are pleased that the City of Turner has conducted a thorough wetlands inventory and has made wetland planning a high priority. We look forward to working with you and your staff as you continue on the Goal 5 wetland planning effort.

Respectfully,

Ann Hanus

Ann Hanus
Director

c: Kenn Battaile, Mid-Willamette Valley Council Of Governments
Mel Lucas, DLCD
Jeanne Fromm
Yvonne Vallette, EPA (enclosure)
Jim Goudzwaard & X, Corps of Engineers (enclosure)
John Marshall, FWS, Portland Field Office (enclosure)
Patty Snow, ODFW (enclosure)
Tom Melville, DEQ
Dennis Peters, FWS Regional Office
Patti Caswell, DSL
John Lilly, DSL

1. Introduction

1.1. Report Format

This report describes the relevant background information, study methodology, and results for the Turner Local Wetland and Riparian Area Inventory. A brief historical overview and a description of the climate, topography, geology, soils, hydrology, ecosystem, and fish and wildlife habitat in the Turner area provides general background information prior to more detailed descriptions of wetland and riparian resources. The background information also supports the wetland and riparian area function and value assessment process. Development limitations linked to natural resources and processes, such as flood hazards, etc., are described. Methodology for the wetland and riparian area inventory is described. The public involvement program and cartographic methods for he project are also discussed.

Study inventory results are presented in sections entitled Local Wetland Inventory, Locally Significant Wetlands, and Riparian Area Inventory Results. The report concludes with a project summary and reference list. The Appendices include a glossary of terms and acronyms used in the report, detailed soil descriptions, wetland characterization sheets, wetland determination data forms, Oregon Freshwater Wetland Assessment Methodology evaluations and results, significant local wetland determination results, riparian data forms and assessment results, a list of plants observed in Turner, and aerial photography of farmed areas. The results of the wetland and riparian inventory were shown on maps and much of the background information is also map-based information.

1.2. Definitions

Wetland and riparian resources are regulated and/or managed by a variety of federal, state, and local agencies. Many technical terms used to describe these resources, and the pertinent laws and policy, are unfamiliar to non-specialists. Terms and acronyms used in this report are defined in Appendix A to aid in understanding the information in this report and assist in resource planning and decision-making at the local level.

2. Study Area Characteristics

2.1. Setting

Turner is located in the middle of the Willamette Valley physiographic province of Oregon in southern Marion County (Township 8 South, Range 2 West, Sections 20, 21, 28, 29, 32, and 33; Willamette Meridian). The Willamette Valley is about 130 miles long and is a v-shaped feature, varying in width from a few miles in the Eugene-Springfield area to about 40 miles in the Portland area (Figure 1). The Willamette River flows from south to

north and lies west of the valley center line. The valley is a broad, lowland area lying between the Coast Range and Cascade Mountains and is composed of several distinct basins separated by low, rolling hills.

Turner occupies a narrow valley which extends from the Stayton Basin to the Northern Willamette Basin. This valley separates the Waldo and Salem Hills (Figure 1). At the narrowest point in the valley, "Turner Gap" is about 1,600 feet wide. The city is located about 6.8 miles east of the Willamette River, 6.6 miles north of the North Santiam River, and Mill Creek loops through the urban area. The city is also located in the northern part of the Santiam Water Control District. The Main Canal, constructed in the 1850s to supply water to mills in Salem, utilizes McKinney and Mill Creeks to convey water through Turner. Main water transmission lines to the city of Salem run through Turner and power transmission lines are located on the hills just west of Mill Creek.

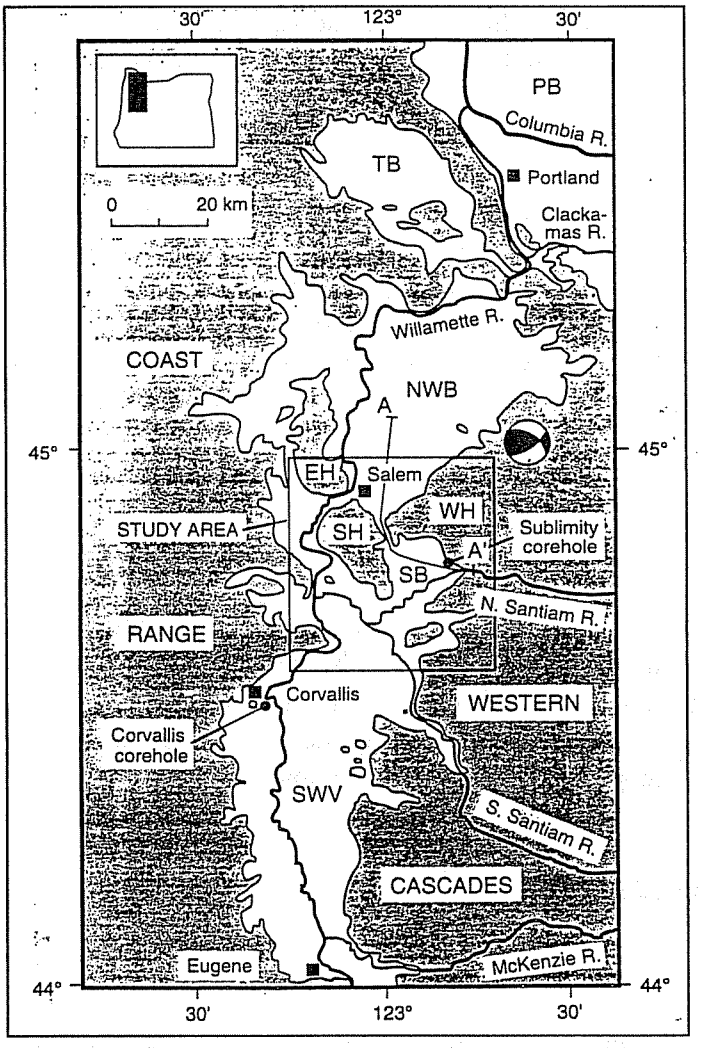

Figure 1. Physiographic Map of the Willamette Valley

PB = Portland Basin, TB = Tualatin Basin, NWB = Northern Willamette Basin, SB = Stayton Basin, EH Eola Hills, SH = Salem Hills, WH = Waldo Hills, SWV = Southern Willamette Valley, adapted from Crenna and Yeats, 1992)

Turner lies equidistant from the two major transportation corridors in the area: Interstate 5 is located 2.5 miles to the west and State Highway 22 is located 2.5 miles to the northeast (Figure 2). The Union Pacific Rail Road (UPRR) runs through the center of the city. McNary Airport is located about 4 miles north of Turner. The Salem Urban Growth Boundary is located about 1 mile north of the Turner city limits and Aumsville is the next closest city to the east (~3 miles).

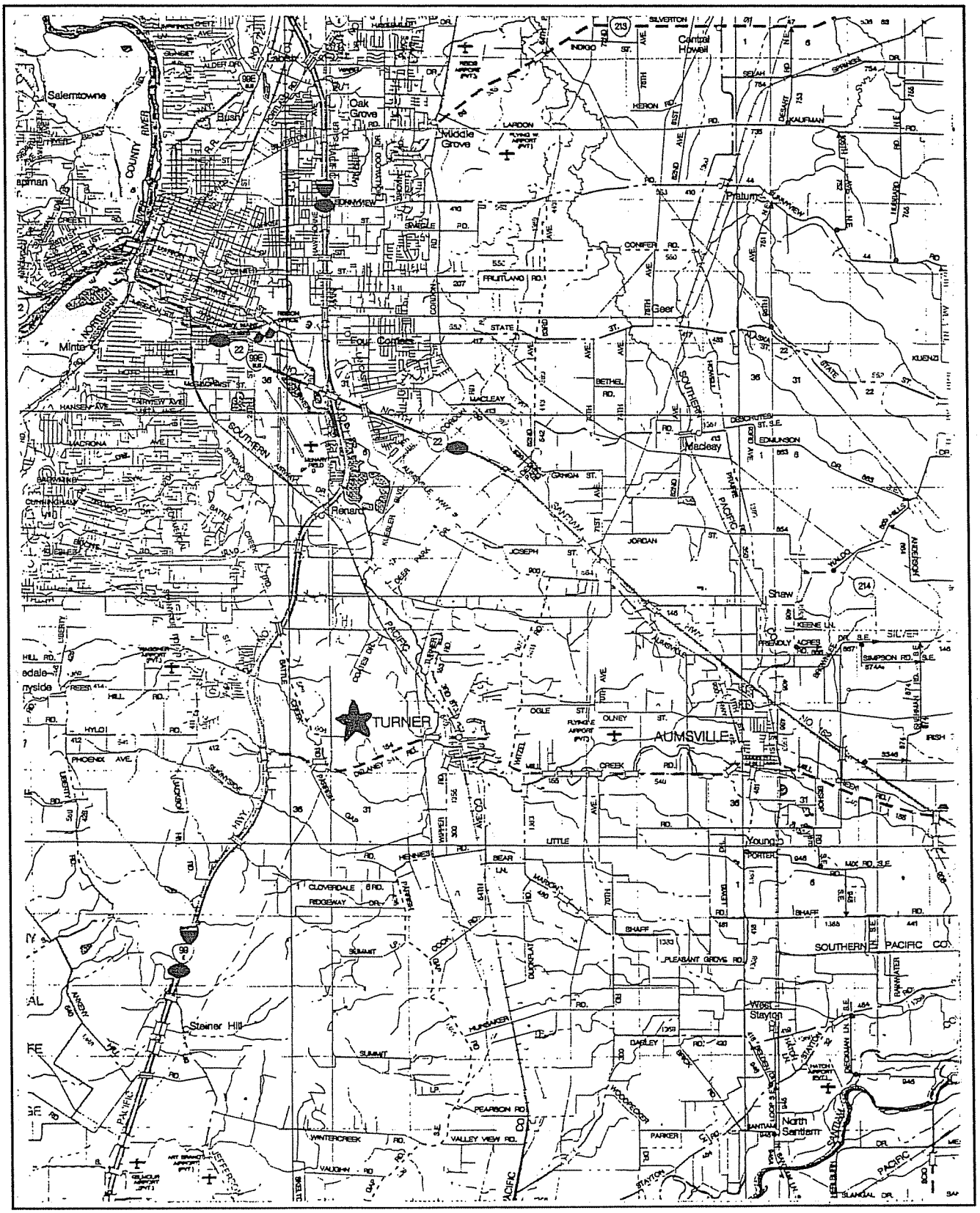

Figure 2. Vicinity Map

2.1.1. Culture and Industry

Turner, with an estimated population of 1,330 (Edmonston and others, 1998), is located in the most densely populated part of Oregon. About 70 percent of Oregonians reside in the Willamette Basin, which is also the location of intensive agricultural activity, industry, and other commerce. Turner ranked 12th of 19 cities in Marion County in terms of population in 1998 (Edmonston and others, 1998). The population of the Willamette Valley is growing rapidly, and an estimated 1.5 million additional people will live here 50 years from now. Unlike the rest of the Basin in the 1990s, population in Turner increased a modest 4 percent, mainly due to the lack of a municipal sanitary sewer system and severe soil limitations for on-site sewage systems. A sewer was installed in 1999, and the city is expecting future growth rates to be more typical of the region. Marion County estimates the population in Turner to be 2,365 people in 2020, based on an average annual growth rate of 2.53 percent, but short term growth rates are likely to be higher (MWVCOG, 1999).

Turner is one of the many small towns in the Willamette Valley that sprang up along the railroads built in the late 1860s and 1870s. The Oregon and California Railroad was built through Turner in 1870 (Koler/Morrison Planning Consultants, 1990), and this line is now owned by the Union Pacific Railroad (UPRR). The city is named after Henry Turner, an early settler who arrived in 1852. The town was incorporated in 1905 and platted in 1907, but an historical atlas shows several streets laid out in a typical grid pattern on either side of the railroad in 1878 (Edgar Williams & Co., 1878). Church facilities and mills, powered by diversions from Mill Creek, were constructed in the 1871-1910 period.

The surrounding diverse and productive agriculture has been one traditional mainstay of Turner's economy. Another mainstay has been the industrial sector, particularly lumber milling. Additionally, a large gravel mine is located in north Turner, and another operation is planned in the south Turner area within 10 years. City policies support current and future industrial uses in Turner; and the Comprehensive Plan noted that the city's proximity to the interstate freeway, railroad, and airport are competitive advantages for this type of land use (City of Turner, 1993).

The area within the Urban Growth Boundary (UGB) is about 798 acres (City of Turner, 1993). The wetland and riparian resource study included lands inside the Urban Growth Notification Area (UGNA), which includes about 1,353 acres. Overall, Turner has a relatively low density development pattern with large amounts of vacant land. Some of this vacant land is difficult and expensive to develop due to excessive slopes, flood hazards, weak foundation soils, and poorly drained soils. Additional constraints imposed by federal funding sources for the new municipal sewer and adopted into city code are:

1. The city of Turner shall not provide sewer service to any new structures or development which would encroach upon, or adversely affect, any designated

wetlands within Turner City Limits or Urban Growth Boundary (Turner Land Use Development Code 4.220(10)(b)); and

2. Restrictions on some new development located within the 100-year floodplain (Turner Land Use Development Code 4.200(2)(c)).

Most land in the UGNA, about 61 percent (824 acres), is designated for residential use (Table 1 and Figure 3). About 172 acres is designated for public/semi-public use and is a relatively high percentage (13 percent) compared to other communities. Public/semi-public land use is mainly located on the east side of town, and the bulk of it is associated with the church facilities and the city of Salem's drinking water reservoir site, Franzen Reservoir. Land designated for industrial use, about 15 percent (197 acres), is located mainly on the south end of town, with a lesser amount located in north Turner. Turner's commercial area, about 2 percent (32 acres) of the total city, is a narrow strip running through the center of town along 3rd Street. Commercial enterprises are influenced by proximity to Salem. Table 1 shows the distribution of designated land uses within the Turner Urban Notification Area (UGNA).

TABLE 1. UGNA COMPREHENSIVE PLAN LAND USE DESIGNATIONS

Zoning Category	Acres in UGNA	Percent of UGNA
Lower Density Residential	770	*57*
High Density Residential	54	*4*
TOTAL RESIDENTIAL	824	*61*
COMMERCIAL	32	*2*
INDUSTRIAL	197	*15*
PUBLIC/SEMI-PUBLIC	172	*13*
TOTAL	**1353**	***100***

2.2. Climate

The climate of the Turner area is dominated by the westerly flow of moist, mild air masses from the Pacific Ocean. Climate is seasonal, with mild, wet winters and warm, dry summers. Precipitation occurs when the moist air masses rise and cool over the Coast and Cascade Ranges. A weather station located at the Salem Airport has records covering 1961 to 1990. Station data shows that the coldest temperatures occurred in January, with an average mean temperature of 39° F, an average maximum temperature of 46° F, and an average minimum temperature of 33° F. Warmest temperatures occurred in August, with an average mean temperature of 67° F, an average maximum temperature of 82° F, and an average minimum temperature of 51° F (Oregon Climate Service). Extreme temperatures recorded at the Salem Airport from 1961-90 were -12° F (December) and 108 ° F (August). In the Willamette Valley floor in Marion County, the growing season occurs between March 3 to November 21 (NRCS, 1972), an interval of 263 days. The growing season is the number of days between the first and last days with low temperatures of 28° F in five out of ten years.

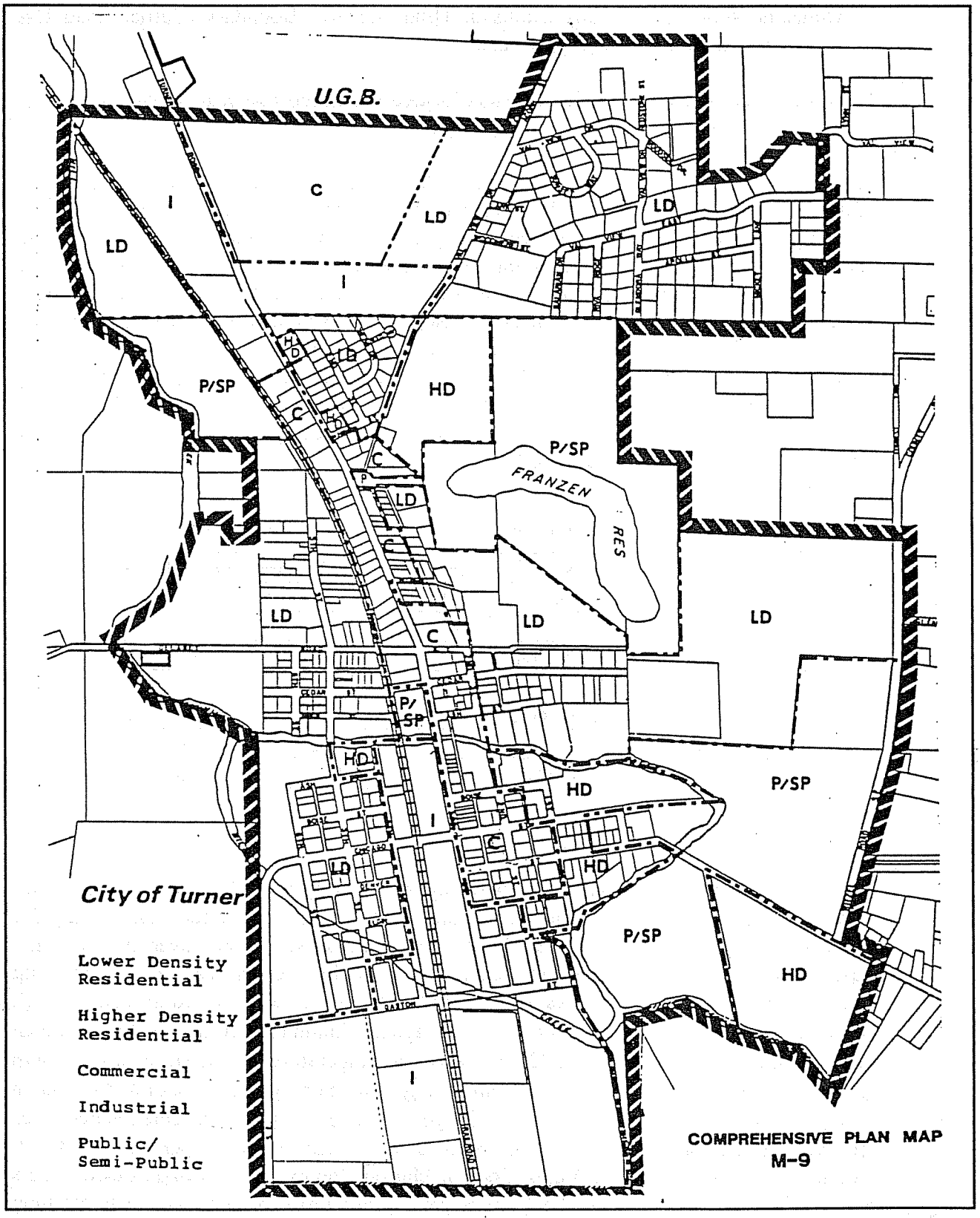

Figure 3. Turner Comprehensive Plan Map

Figure 15. Turner Local Wetlands Inventory Map

Mill Creek North Subwatershed
Mill Creek East Subwatershed
Mill Creek Central Subwatershed
Mill Creek South Subwatershed
Perrin Lateral Subwatershed

MCN-A
MCN-B
MCN-C
MCN-D
MCN-E
Future Lake Turner
MCC-A
MCC-B
MCC-C
MCC-D
MCC-E
MCS-A
MCS-B
MCS-C
MCS-D
MCS-E
MCS-F
PL-A
PL-B
PL-C
PL-D
PL-E
PL-F
PL-G
PL-H
Franzen Reservoir
Turner Bypass
Mill Creek
Perrin Lateral Canal
Marion Road
Valview Drive
Railroad
3rd Street
2nd St
Chicago St
Delaney Road
Cedar Lane
Witzel Rd
Wipper Rd

Study Area
Data Points
- Upland
- Wetland
- Bridges

Wetland Courses
- Farmed Wetland -- FW
- Palustrine Emergent -- PEM
- Riverine - 3 -- R3
- Riverine - 4 -- R4
- Riverine - 2 -- R2

Field Verified
- No
- Yes

Wetland Areas
- Farmed Wetland -- FW
- Lacustrine Unconsolidated Bottom -- LUB
- Palustrine Emergent -- PEM
- Palustrine Forested -- PFO
- Palustrine Scrub-shrub -- PSS
- Palustrine Unconsolidated Bottom -- PUB
- Palustrine Rock Bottom -- PRB
- Palustrine Forested/ Paulstrine Scrub-shrub -- PFO/PSS
- Subwatershed Basins
- Flood Plain

APPROVED WETLANDS INVENTORY
Oregon Division of State Lands
Meets LWI standards
Date 1/4/01 Approved by Dana Field

Title: Figure 15. Turner Local Wetlands Inventory Map
Prepared by: Mid-Willamette Valley Council of Governments
Created by: AJW | Date: November 20, 2000 | Revision: 3
Filename: R:/common/naturalres/wetlands/turn_lwi/maps.apr
Figure 15. Turner Local Wetlands Inventory Map 11x17--Rev: 3

400 0 400 800 Feet

State Plane Coordinates, Oregon North, North American Datum, 1983

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This map is for illustrative purposes only and is to be used for planning purposes.

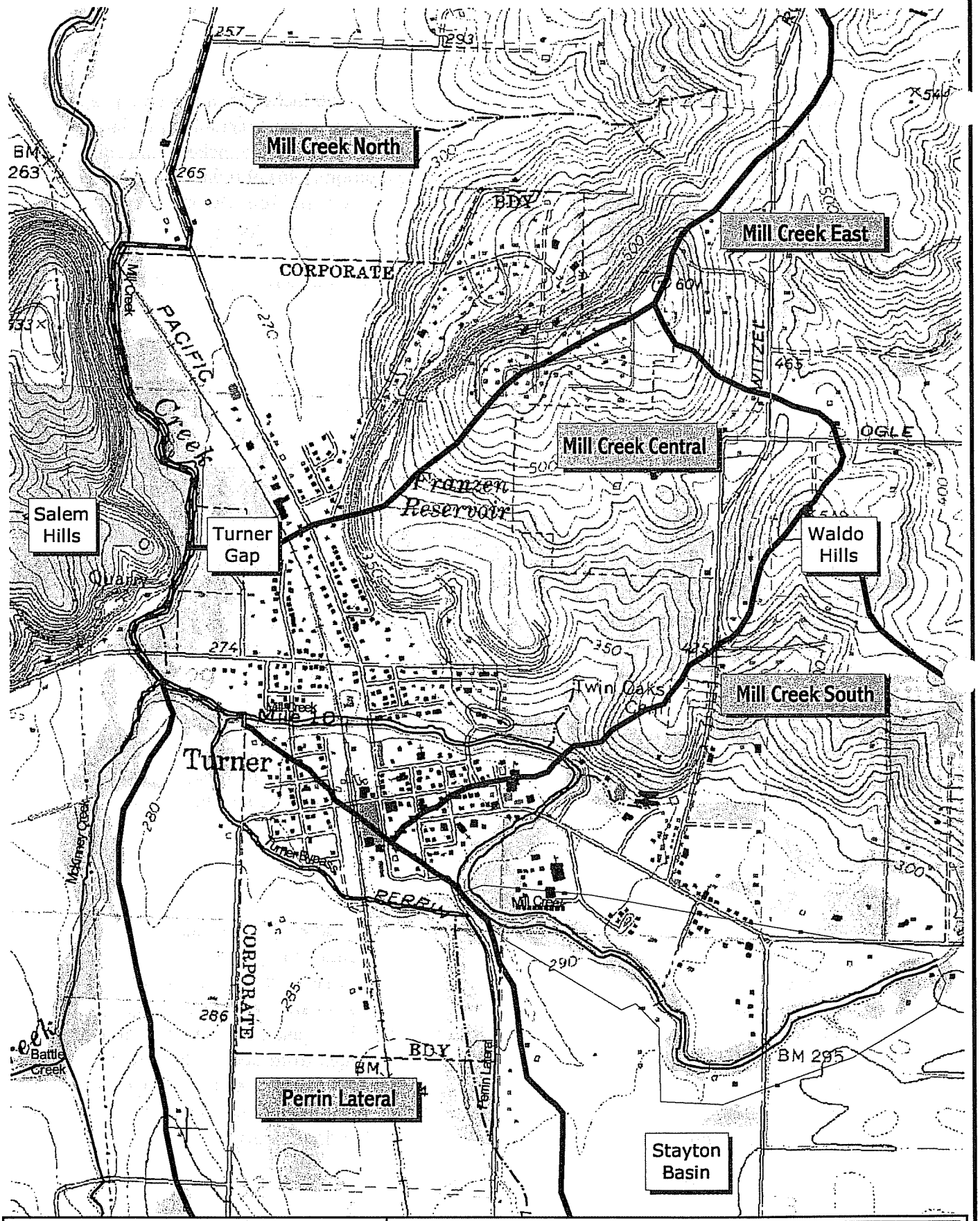
Most of the Willamette Valley receives an average 40 to 60 inches of rain per year falling mainly in the fall, winter, and spring seasons. The average annual rainfall at the Salem Airport is 39 inches; December is the wettest month (average of 6.8 inches), and July is the driest month (0.6 inches). Monthly mean precipitation (1961-90) illustrates the highly seasonal nature of precipitation in the area: 84 percent occurs from October through April, and 16 percent occurs from May through September. An average of 6.5 inches of snow falls in the winters, mostly in December and January. Because of the prevalence of marine air masses, the relative humidity in Marion County is fairly high, and heavy dews occur throughout most of the year (USDA, 1972).

Prevailing winds in the area usually blow from the north to northwest in the summer and from the south during the remainder of the year. From April through September, the average daily windspeed ranges from 4-6 mph at daybreak to 10-12 mph in the late afternoon (USDA, 1972). Strong east winds and winter storm winds occur episodically. Winter storms with sustained winds of 40-50 miles per hour are not uncommon. The Columbus Day Storm, 1962, brought winds in excess of 70 mph to the Willamette Valley (Willamette Basin Task Force, 1968). Small tornadoes or funnel clouds have been observed in the Willamette Valley but caused little damage. Thunderstorms occur about 6-8 times per year, and the accompanying lightning can ignite forest fires if fuel conditions are right. Hailstorms are frequent in the late winter and early spring but typically produce small hailstones that usually do not damage structures or crops (USDA, 1972).

Major storms in the Willamette Valley usually occur from October though April. These storms occur when warm, wet systems originating in the South Pacific meet cold air from Alaska. Strong winds, intense rainfall, valley snowfall, freezing rain, and rapid snowmelt have combined in various ways in the past to periodically wreak havoc (floods and windstorm damage) in the Willamette Valley. The 1962 Columbus Day windstorm, and the floods of 1964 and 1996, are examples of these types of extreme winter storms.

2.3. Geomorphology

Topographic and soils maps (Figures 4 and 8, and Table 3) show that land inside the Turner UGNA can be separated into two general landform types: (1) Terraces and floodplains; and (2) Low foothills. Located south and west Turner is the low-lying Stayton Basin. Mill Creek "gap" is cut between the Salem and Waldo Hills (Figures 1 and 4). The low-lying surfaces are the modern and older flood plains and alluvial fan deposits. Topography is flat to gently sloping and elevation ranges from 260 to 295 feet. Surface drainages flow north to northwest. Previous channels of Mill Creek, "meander scrolls," can be observed in some parts of the bottomlands, but grading and filling have removed most of the undulating topography typically observed in floodplains.



Title: Figure 4. Topographic and Subwatershed Map of Turner UGNA

Prepared by: Mid-Willamette Valley Council of Governments

Created by:	Date:	Revision:
AJW	November 16, 1999	1

Filename: r:/common/naturalres/wetlands/turn_lwi/maps.apr

Figure 4. Topographic Subwatershed Map of Turner UGNA 8.5x11--Rev: 1

Study Area
Water
Intermittant
Perennial
Subwatershed Boundary

400 0 400 800 Feet

This map is for illustrative purposes only and is to be used for planning purposes.

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Eastern Turner is located on the Waldo Hills, an uplifted, fault-bounded block where slopes range from 6 to 50 percent. Elevation varies from 280 to 601 feet, and surface drainages generally flow south and southwest into Mill Creek. The break in slope between the hills and bottomlands occurs at about the 290-foot elevation. The Salem Hills are located just outside the western boundary of Turner.

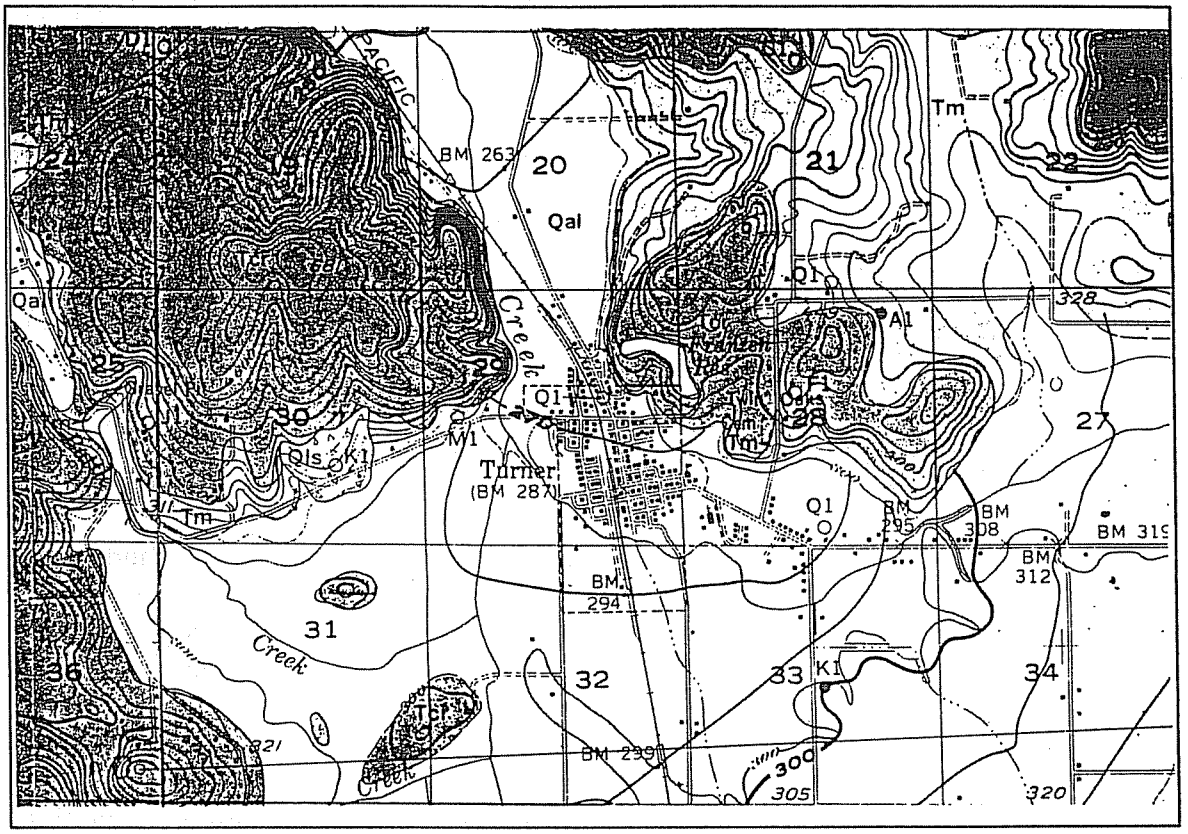


Figure 5. Geology in the Turner Area

Qal-alluvium, shown as white; Qls- landslide deposits, Tst- Sardine Formation, Tcr- Columbia River Basalts, and Tm-Marine sedimentary rocks

2.4. *Geology and Soils*

2.4.1. Geology

Table 2 contains brief descriptions of the geologic materials found in the Turner area, and Figure 5 is a map of their location. The geologic units presented in Table 2 are an idealized sequence of materials as they would be encountered in a bore hole, with the youngest rocks at the surface and progressively older rocks at depth. The original arrangement of rock types has been disordered by faulting, folding, and landslides in Turner.

TABLE 2. DESCRIPTION OF GEOLOGY IN TURNER AREA

Map Symbol	Age (years)	Unit Description
Qal	present to 10,000	Poorly to unconsolidated clay, silt, sand, and gravel deposits. Found in the floodplains of streams and rivers. Lower Turner is located on a large, thick gravel fan, with alternating layers of sand, silt, and clay. Fan materials deposited by the North Santiam and older courses of the Willamette River. Can be up to 100 m thick in the center of the Stayton Basin.
Qls	present to 10,000	Landslide deposits. Chaotic mixes of affected bedrock, usually tuffaceous sandstone, siltstone, and basalt. Occur mostly in areas where stream incisions has exposed the marine sedimentary rock.
Tst	3 to 5 million	Massive pumice tuff, basaltic andesite flows, and agglomerate-conglomerate beds. Thickness ranges from a few to 500 feet thick. Called the Sardine Formation.
Tcr	14-16 million	Volcanic rocks: basalt. Surface usually weathers to a thick layer of reddish soil. Exposed in Salem and Waldo Hills and at La Butte and Mt. Angel. Thickness varies, but can be more than 350 feet. Called the Columbia River Basalts.
Tm	about 24 million	Marine sedimentary rocks: sandstone, siltstone, and conglomerate. More than 1,000 feet thick. Deposited undersea next to an active chain of volcanoes

Data from Walker and Duncan, 1989, and Hampton, 1972.

Turner bottomlands are located on gravel interspersed with layers of silt, clay, and sand; shown as Quaternary alluvium (Qal) on Figure 5. These deposits can be up to 100 m thick in the center of the Stayton Basin (Crenna and Yeats, 1994). These deposits were episodically flushed into the basin by the ancestral Willamette and North Santiam Rivers. The Santiam River transported glacial outwash from the Cascade Mountains, laying down fan-like deposits in the Turner and Salem area (Figure 6). The layers of silt and clay are discontinuous lenses, and where they occur, impede surface infiltration which creates perched water bodies and high seasonal water tables. The gravel resources in this alluvium have been, and are currently, extensively mined in the Turner and south Salem area. Subsurface investigation, undertaken during the design phase for the new wastewater collection system, characterized the gravel as dense, gray, moderately- to well-graded, and rounded with some cobbles, sand, and silt (GeoDesign, 1998).

The hilly, higher portions of Turner are underlain by Columbia River Basalts (Tcr) and marine sedimentary rocks (Tm) (Figure 5). These same rocks are also encountered below the alluvial deposits. The basalts layers solidified from numerous molten lava flows that originated from distant fissures in northeastern Oregon between 14 and 16 million years ago. Lavas flowed down an ancestral channel of the Columbia River valley and spread into adjacent valleys and depressions (Crenna and Yeats, 1994). These basalt flows can be up to 300 feet thick. Where exposed at the surface, the basalts weather to a distinctive reddish-brown clay soil. The basalts are mined and processed for aggregate at a site adjacent to western city limits.

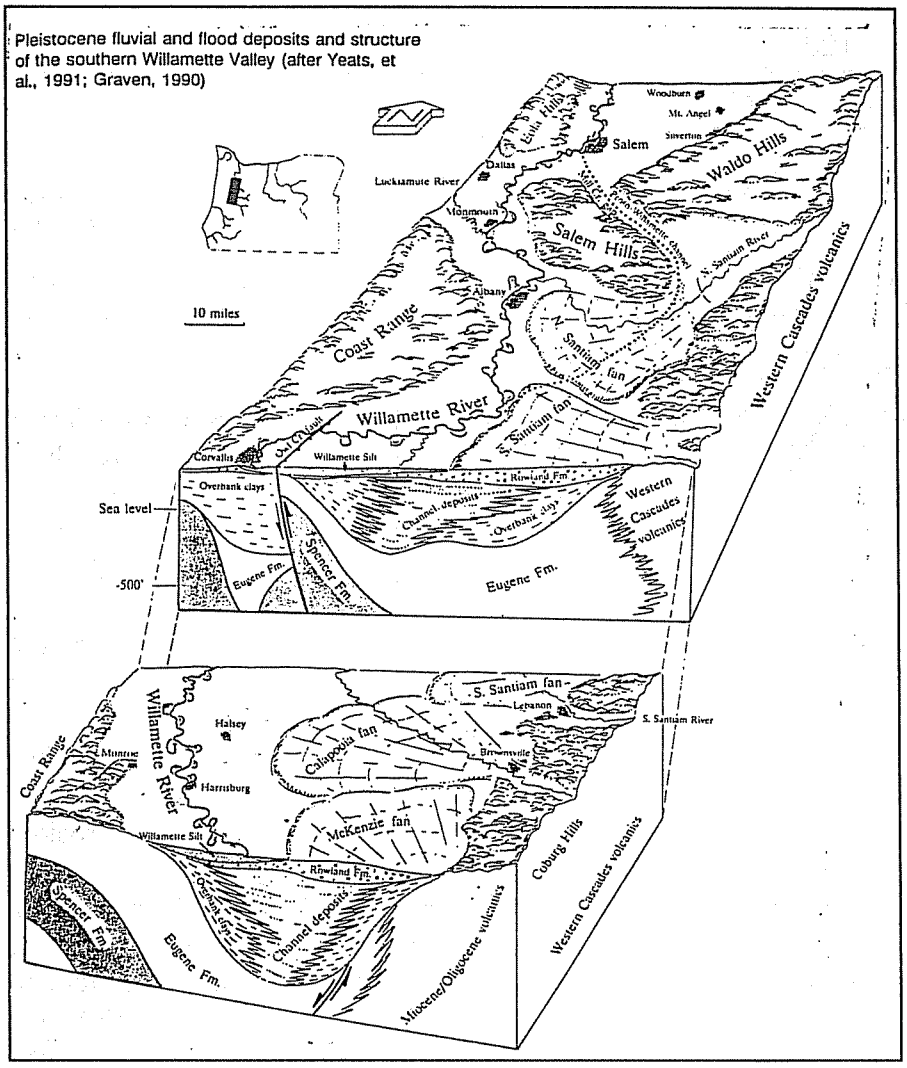


Figure 6. Alluvial Fan Deposits and Structure of the Corvallis-Salem Area

(Adapted from Orr and others, 1992)

There are no landslide deposits (Qls) or rocks of the Sardine Formation (Qst) mapped inside the Turner UGNA. A small landslide deposit is located along Delaney Road about 1/3 mile west of Turner city limits. The closest exposures of the Sardine Fm. are located on the State Penitentiary site about ½ mile north of the city.

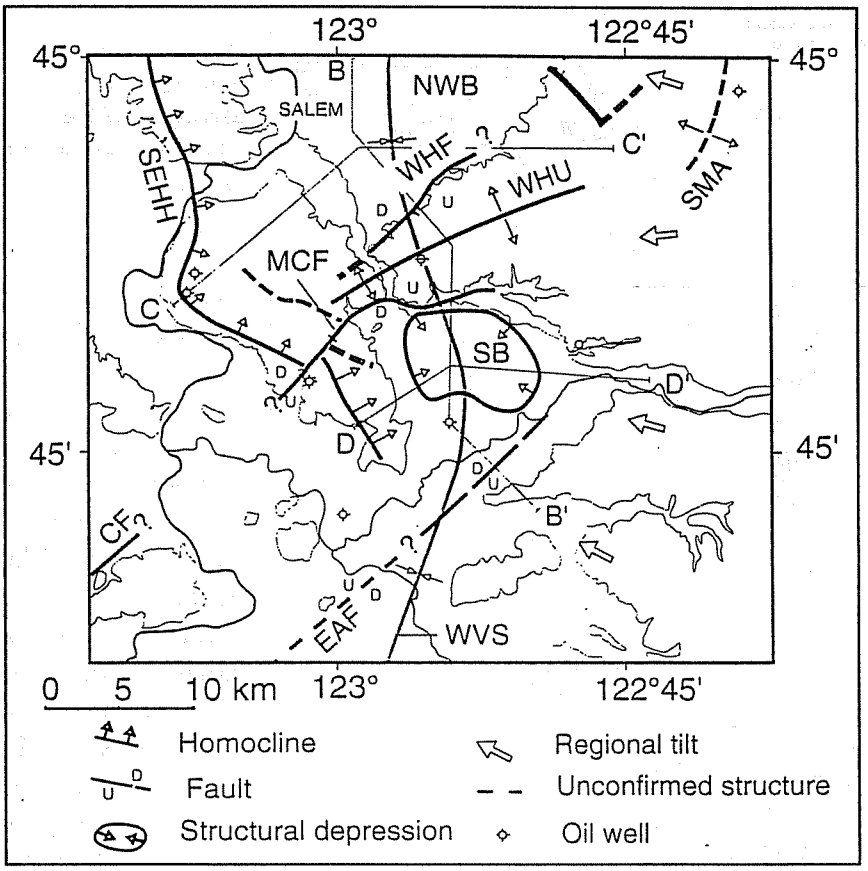


Figure 7. Location Of Faults In The Turner Area.

WHF = Waldo Hills Fault, MCF = Mill Creek Fault, SB = Stayton Basin, U = upward relative movement, D = downward relative movement *(Map from Crenna and Yeats, 1994)*

Rocks in the Turner area, and elsewhere in the Willamette Valley, have been deformed by faulting and folding. In western Oregon, faults are difficult to discern on the land surface because they are concealed by weathering, erosion, vegetation, and deposits of loose alluvial materials. Faults are identified by the occurrence of earthquakes, scientific analysis of the transmission and reflection of seismic waves, and observations of well logs and surficial geology. The Mill Creek Fault runs east-west through the city and separates the Stayton Basin from the uplifted blocks forming the Waldo and South Salem Hills (Figure 7). To the north, the Waldo Hills Fault marks the northwest margin of the Waldo Hills. Movement rates along the Mill Creek and Waldo Hills faults are estimated to be very low (10^{-2} mm/yr), but quakes in the Woodburn and Scotts Mills areas during the 1990s demonstrate that motion is still occurring along faults in the Willamette Valley (Crenna and Yeats, 1994).

As mentioned, geologic resources in the Turner area have been, and will continue to be, utilized for crushed stone and gravel resources. The low-lying portion of north Turner is currently dominated by an active gravel mine, and plans exist to open another mine south of the city. The reclamation plan for the northern site will develop future Lake Turner, an extensive open water and wetland area in northwest Turner (Scoles Associates, 1995). A stone quarry, immediately east of Turner, mines and processes Columbia River Basalt.

2.4.2. Soils

Soils mapped (Figure 8) in the Turner UGNA area are:

- Amity silt loam,
- Clackamas gravelly loam,
- Courtney gravelly silty clay loam,
- Hazelair silt loam,
- Holcomb silt loam,
- McAlpin silty clay loam,
- Nekia silty clay loam and stony silty clay loam,
- Sifton gravelly loam,
- Silverton silt loam, and
- Wapato silty clay loam.

Soils in the flat bottomland area of Turner formed in younger and older alluvial deposits. Amity, Holcomb, McAlpin, Silverton, and Wapato formed in fine grained alluvial deposits; and Clackamas, Courtney, and Sifton formed in gravelly alluvial deposits. Clackamas is the most common type of soil in low-lying Turner. Courtney is the most common soil type along Mill Creek and the Turner Bypass in southern Turner. Soils underlying the hilly portions of Turner formed on volcanic and sedimentary bedrock. Nekia soils developed in basalt bedrock and tuff. Hazelair formed in sandstone and siltstone. Nekia is the dominant soil type in the higher, hilly parts of Turner. Total acreage of each soil type inside the UGNA is shown in Table 3.

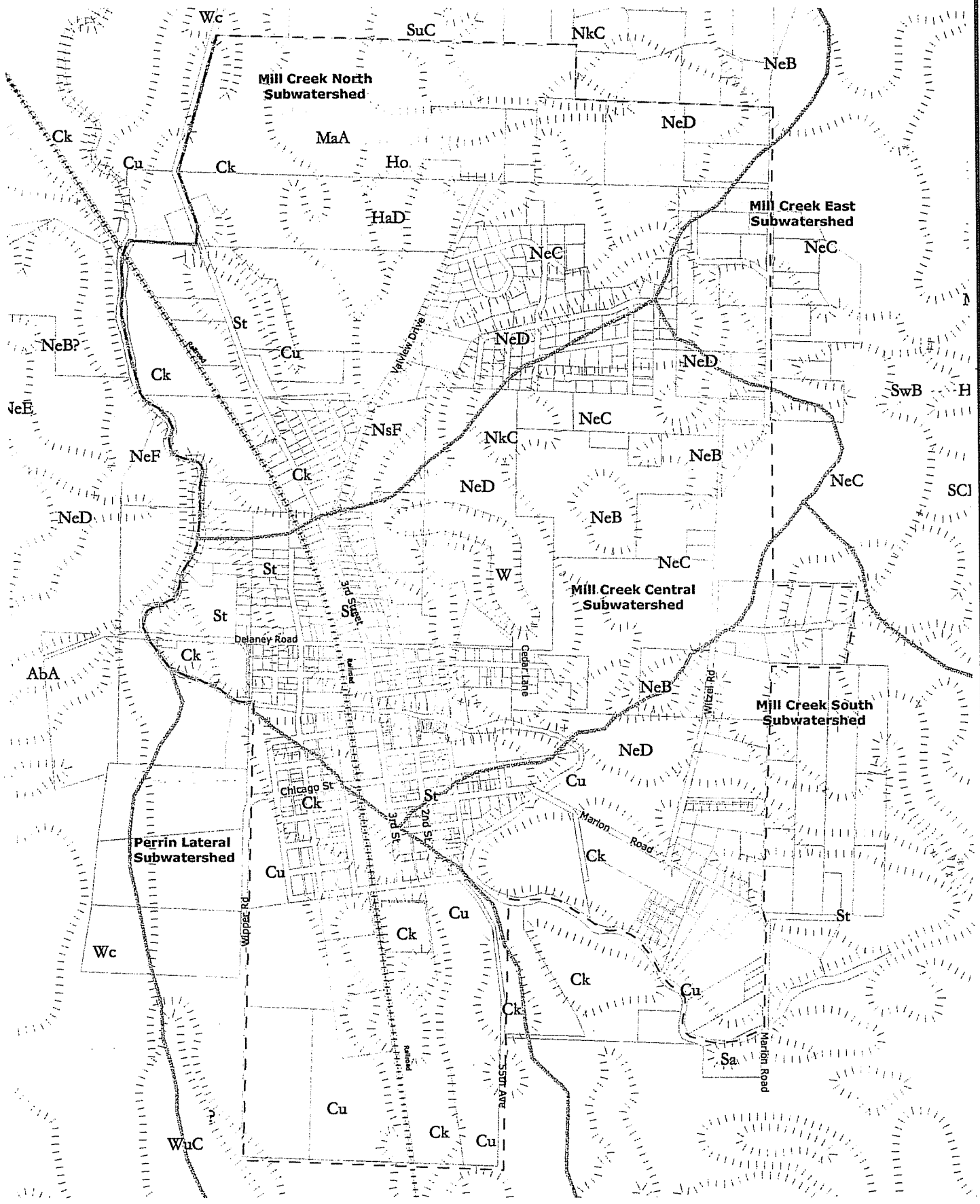
A more complete description of each of the soils mapped in Turner is given in Appendix B. The wetland and riparian inventory in Turner used soils information to estimate the probability of wetlands and the potential erosion hazard.

TABLE 3. DESCRIPTION OF SOILS IN THE TURNER STUDY AREA

Map Symbol	Soil Name	Percent Slope	Acres[1]	Parent Material	Landscape Position
Am	Amity silt loam	0-2	8.8	Mixed alluvial silts	Broad valley terraces at elevations of 150 to 350 feet.
Ck	Clackamas gravelly loam	0-3	303.7	Gravelly mixed alluvium	Terraces at elevations of 175 to 650 feet.
Cu	Courtney gravelly silty clay loam	0-2	198.8	Alluvial deposits of mixed age	Slightly concave depressions and drainages on terraces at elevations of 175 to 650 feet.
HaD	Hazelair silt loam	2-20	8.0	Weathered sandstone and shale	Footslopes adjacent to valley floor at elevations of 250 to 650 feet.
Ho	Holcomb silt loam	0-2	6.3	Silty and clayey alluvium and loess	Older terraces at elevations of 125 to 350 feet.
MaA	McAlpin silty clay loam	0-6	61.2	Mixed alluvium	On alluvial fans and along streams and intermittent drainages of Salem and Waldo Hills at elevations of 250 to 1,000 feet.
NeB	Nekia silty clay loam	2-7	99.2	Weathered tuffs and basalts	Low red foothills
NeC	Nekia silty clay loam	7-12	214.1	Weathered tuffs and basalts	Low red foothills
NeD	Nekia silty clay loam	12-20	189.1	Weathered tuffs and basalts	Low red foothills
NkC	Nekia stony silty clay loam	2-12	27.9	Weathered tuffs and basalts	Low red foothills
NsF	Nekia very stony silty clay loam	30-50	51.8	Weathered tuffs and basalts	Low red foothills
St	Sifton gravelly loam	0-2	172.9	Gravelly, sandy alluvium	Alluvial terraces
SuC	Silverton silt loam	2-12	7.1	Silty and fine-grained material with some gravel	Dissected terraces and footslopes at elevations of 225 - 300 feet.
Wa	Wapato silty clay loam	0-2	14.5	Mixed alluvium	Depressions and overflow channels on flood plains at elevations of 100-650 feet.

[1] Acreage calculated from GIS soil coverages

Data from Marion County Soil Survey, 1972



Title:
Figure 8. Soils Map of Turner UGNA

Prepared by:
Mid-Willamette Valley Council of Governments

Created by:	Date:	Revision:
AJW	November 12, 1999	1

Filename:
r:\common\naturalres\wetlands\turn_lwi\maps.apr

Figure 8. Soils Map of Turner UGNA 8.5x11 Portrait--Rev: 1

Study Area
Subwatershed Basins
Railroads

300 0 300 600 Feet

Mid-Willamette Valley Council of Governments
105 High Street S.E.
Salem, OR 97301-3367
Phone: (503) 588-6177
Fax: (503) 588-6094
e-mail:mwvcog@open.org

This map is for illustrative purposes only and is to be used for planning purposes.

TABLE 4. SELECTED INFORMATION ABOUT TURNER STUDY AREA SOILS

Map Unit	Hydric Soil?	Soil Capability Class[1]	Prime Farmland?	Potential Erosion Hazard	Permeability[2]	Depth to Seasonal High Water Table
Am	*No*[3]	II	Yes, if drained	Slight	Moderately slow	6-12"
Ck	*No*	III	Yes, if drained	Slight	Moderately slow	6-16"
Cu	YES	IV	No	Slight	Very slow	0-6"
HaD	No	IV	No	Moderate	Slow	12-24"
Ho	No	III	Yes, if drained	Slight	Very slow	6-16"
MaA	*No*	II	Yes	Slight	Moderately slow	16-30"
NeB	*No*	II	Yes	Slight	Moderately slow	>60"
NeC	*No*	III	No	Moderate	Moderately slow	>60"
NeD	No	III	No	Moderate	Moderately slow	>60"
NkC	No	III	No	Moderate	Moderately slow	>60"
NsF	No	VI	No	Severe	Moderately slow	>60"
St	No	III	No	Slight	Moderately rapid	>60"
SuC	No	II	No	Slight	Moderately slow	>60"
Wc	YES	III	Yes, if protected from flooding or not frequently flooded	Slight	Moderately slow	0-6"

Source: Soil Survey of Marion County, USDA, 1972

[1]Capability Classification refers to the soils suitability for most kinds of field crops: I-few limitations which restrict use, II-moderate limitations, III- severe limitations, IV- very severe limitations, V- limited to pasture, range, woodland, or wildlife uses, VI- severe limitations making soils generally unsuitable for cultivation, VII- very severe limitations making soils unsuitable for cultivation, VIII- soils and landforms restricted to recreation, wildlife, water supply, or aesthetic uses.

[2]Permeability is the rate at which soil transmits water when completely saturated.

[3] Italics indicates that these soils can contain inclusions of hydric soils.

Table 4 contains additional information about Turner soils relevant to wetland and riparian area identification and resource management planning. Courtney and Wapato soils are classified as hydric soils. Amity, Clackamas, McAlpin, and Nekia (2-7 and 7-12 percent slopes) soils can contain inclusions of hydric soils (Table 4). Existing soils information indicates that much of Turner is underlain by hydric soils (16 percent) or soils with the potential to contain hydric soils (50 percent). Most of southern reach of Mill Creek, and the entire length of the Turner Bypass, flow across hydric soils.

Hydric soils are very wet soils. Saturated, or water-logged, conditions retard the rate of oxygen entry into the soil. Existing soil oxygen is rapidly used up by microorganisms, plant roots, and other chemical reactions, creating low oxygen levels in the soil. Low oxygen conditions influence soil chemistry, color, and the types of microorganisms and plants that can exist. Hydric soils are strongly associated with wetlands and often require special design and construction techniques when the site is developed.

Soil Capability Class refers to the general suitability of soils for most types of field crops. A rating of I means that soils have few limitations that restrict their agricultural use. A rating of VIII means the soils can not be used for commercial crops and they are restricted for other uses. Soils in Turner generally have moderate to severe limitations for field crops. Amity, Clackamas, and Holcomb soils, if drained, are designated prime farmland. Courtney, the most common soil in the riparian area along Mill Creek and Turner Bypass, has very severe field crop limitations.

Information about permeability (Table 4) indicates that most soils inside the Turner UGB generally have moderately slow permeability. Most soils in low-lying Turner have high seasonal water tables which are very common in the Willamette Valley during the winter months. Seasonal high water table refers to saturated conditions, at or near the ground surface, that develop during winter months. Seasonal high water tables are due to perched water bodies that develop when high rainfall rates saturate the soils and infiltration is impeded by less permeable layers, such as claypans and silts, in the subsurface.

2.5. *Hydrology*

2.5.1. Hydrologic Basin Designation

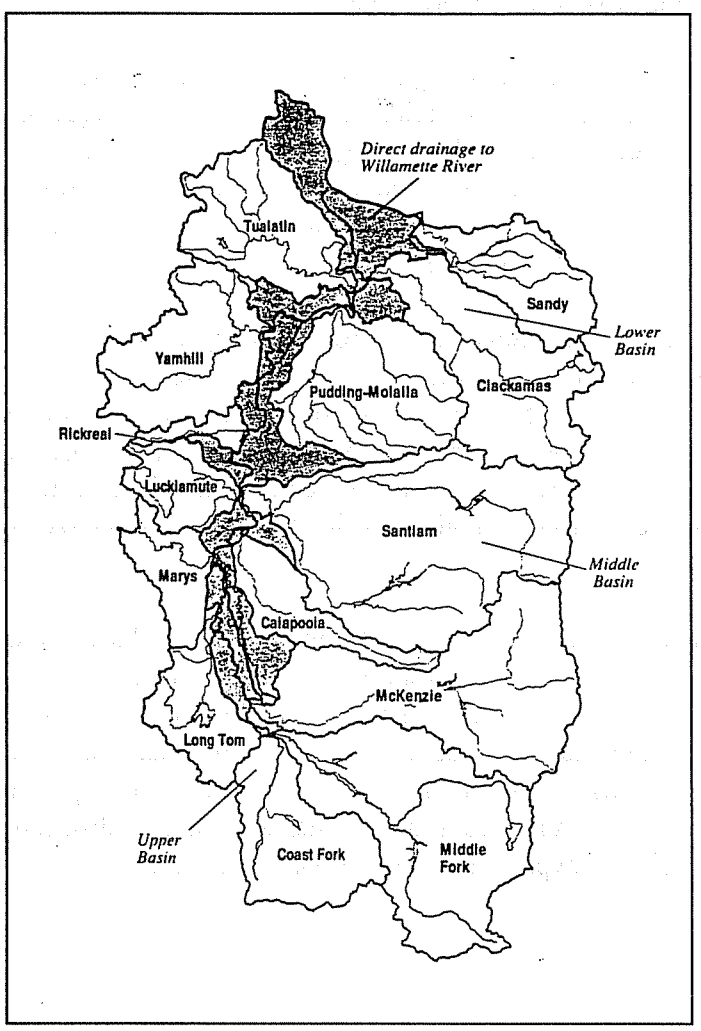


Figure 9. Major Subbasins of the Willamette Basin

Main Stem Willamette Subbasin is shaded *(from Altman and others, 1997)*

Turner is located in the Main Stem Willamette Subbasin of the Willamette Basin (Figure 9), and lies entirely within the Mill Creek Watershed (Figure 4). The Mill Creek Watershed is located between the Santiam River and Mollala/Pudding River Subbasins. The watershed is composed of two main lobes: north and east draining basins located on Salem Hills and North Santiam Fan (McKinney, Battle, Norton, and Rodgers Creeks); and west draining basins located on the Waldo Hills, North Santiam Fan, and Western Cascade foothills (Mill and Beaver Creeks). Turner is located where flows from the east and west lobes merge and flow through the "gap" into the Salem area.

Overall, the Mill Creek watershed is about 24 miles long and 6 miles wide; and total area is estimated to be 111 square miles or 71,040 acres (Army Corps of Engineers, 1968). The area of the watershed above Turner is about 67 sq. miles. Major tributary drainage areas are: (1) Beaver Ck. - 31 sq. miles; and (2) Battle Ck. - 14 sq. mi. High point in the Mill Creek watershed is about 2,200 feet and lies in the Western Cascades on the south side of Silver Falls State Park. Highest elevation along the western drainage divide is Prospect Hill in South Salem at 1,119 feet. The lowest elevation, 120 feet, is located at the confluence with the Willamette River in downtown Salem. The following urban areas are located in the Mill Creek watershed: Stayton, Sublimity, Aumsville, Turner, and Salem.

The total amount, type, and timing of precipitation in a watershed influences stream discharge behavior and has practical implications for water supply and flood hazard planning. Average annual precipitation in the Mill Creek watershed ranges from 40 inches in Salem to 70 inches in the Western Cascades (Willamette Basin Task Force, 1969). Most precipitation occurs as rain, but some snow does occur in the foothills of the Western Cascades. Silver Creek Falls, at an elevation of 1,350 feet, received an average of 17.3 inches of snow per year; and the average number of days with snow greater than or equal to 1 inch is 13 (Willamette Basin Task Force, 1969). As with other watersheds located mainly in the low-lying parts of the Willamette Basin (e.g. Pudding River), most precipitation in the Mill Creek watershed falls between October and May. Natural flow in the watershed begins to increase rapidly in October, peaks in January-February, and is lowest in August. The total amount and timing of flow in Mill Creek is altered by diversions from the North Santiam River watershed and will be discussed below.

There are currently no active gaging stages in the watershed. A station was operated by the United States Geological Survey (USGS) on Mill Creek in Salem from 1940-78 and recorded an average annual discharge of 138 cubic feet per second (cfs). For purposes of comparison, the average annual discharge of the Willamette River at Salem is 23,320 cfs, and the North Santiam River at Mehama is 3,348 cfs (Hubbard and others, 1997).

The two greatest known storms occurred on December 29, 1937, and December 23, 1964, and peak discharges were 8,320 cfs and 7,800 cfs, respectively, in Salem (ACOE, 1968). The flood of 1996 was also a large event but occurred after the gaging station was deactivated. Rainfall at the Salem Airport, between February 6-9, 1996, was 8.18 inches and the record is 8.69 inches recorded in 1937 (Taylor, 1997). Rainfall data suggests that the 1996 event was one of the larger storms to occur in the watershed after European settlement.

Turner has been subdivided into five local subwatersheds for the wetland and riparian area inventory:

- North Mill Creek Subwatershed, 484 acres;
- South Mill Creek Subwatershed, 203 acres;
- Central Mill Creek Subwatershed, 423 acres;
- East Mill Creek Subwatershed, 42 acres; and
- Perrin Lateral Subwatershed, 216 acres;

The acreage listed above is the area of the subwatershed within the study area (UGNA), not the total area of each subwatershed. The North, Central, and East Mill Creek subwatersheds are smaller than the Perrin Lateral and South Mill Creek subwatersheds, which collect drainage from areas south of Turner. Natural summertime flow in Mill Creek is substantially augmented by water diverted from the North Santiam River (see section 2.5.3). Flows in Mill Creek and other unnamed tributary watercourses are also sustained by groundwater discharge to seeps along the channel. As the shallow water

table falls during summer months, channel flow ceases, moving downstream from the headwaters.

Mill Creek does not have a watershed council at this time, but Friends of Mill Creek is working with other watershed stakeholders to form a council. Mill Creek also does not have a watershed assessment; but flood hazards in the watershed, including the Turner Bypass and Mill Creek in Turner, have been studied several times in the past. Flood hazards will be discussed further in the development limitations section.

A drainage study completed in 1983 characterized land use in the watershed as follows: 62 percent cropland, 19 percent urban and other uses, 18 percent forest land, and 1 percent in pasture (Mill Creek Watershed Task Force, 1983). Forest lands occurred as scattered, irregular patches of timber ranging form 10 to 160 acres. About 40 percent of the entire Mill Creek Watershed is zoned for urban use so the potential for degraded water quality and increased runoff is high (Marion County, 1998)

2.5.2. Water Areas and Related Resources

TABLE 5. SOURCES CONSULTED TO IDENTIFY WATER RESOURCES

Source Name	Information
United States Geological Survey (USGS) 7.5 minute quadrangle maps Figure 4	Perennial creek (1): Mill Creek Intermittent creeks (2): northern unnamed, Perrin Lateral Canal Ponds: Franzen Reservoir
Marion County Soil Survey Figure 8	Perennial creek (4): Mill Creek, 3 unnamed Intermittent creeks (2): unnamed Swale (1) underlain by hydric soil Ponds: Franzen Reservoir
National Wetland Inventory (NWI) maps Figure 10	Riverine and palustrine wetlands along Mill Creek, Perrin Lateral Canal, swales. (see Table 6)
Oregon Department of Forestry (ODF) maps indicating size, fish-bearing, and domestic water use	Mill Creek: Large and fish-bearing Perrin Lateral Canal: no size assigned, no fish Northern intermittent drainage: small, no fish
Division of State Lands maps of Essential Indigenous Anadromous Salmonid Habitat	All Mill Creek.
Santiam Water Control District maps	Mill Creek, Perrin Lateral Canal
Oregon Dept. of Water Resources (WRD) maps of water rights: source location and areas of application	Mill Creek, Perrin Lateral Canal, unnamed northern water course, Franzen reservoir. No surface water rights in Turner UGNA. Agricultural areas in south Turner have rights to groundwater sources and application areas.
Federal Emergency Management Agency (FEMA) floodplain maps (Figure 11)	Mill Creek, Turner Bypass, Perrin Lateral Canal, unnamed northern watercourse. Floodways and 100-year floodplains along Mill Creek and Turner Bypass.
Aerial photography (1998)	Mill Creek, Turner Bypass, Perrin Lateral Canal, northern unnamed watercourse, Franzen Reservoir, farm pond

Water areas and water-related resources in the Turner UGNA are comprised of perennial and intermittent streams, ponds, riparian areas, and wetlands. Table 5 summarizes the existing information consulted to characterize the nature and extent of water features and water-related resources in the study area prior to on-site investigation.

All sources identified Mill Creek, Franzen Reservoir, and several unnamed watercourses in the study area. Turner Bypass, a diversion of Mill Creek located in south central Turner, is only shown on FEMA maps. Other maps show parts of the Bypass as the Perrin Lateral Canal, and show it unconnected to Mill Creek at the east end. Field work revealed that the mapped location of Perrin Lateral canal is shown incorrectly on many maps and confirmed that Turner Bypass is connected to Mill Creek on the east and west ends. Numerous other ditches also occurred in the study area and some were connected to the Santiam Water Control District, while others drained stormwater from roadways and urban lands.

No natural lakes or ponds occurred in the study area, but several constructed facilities occurred: Franzen Reservoir, unnamed farm-use pond, and reclamation ponds associated with the gravel mining operation in north Turner. Franzen Reservoir, constructed in 1952, is an uncovered municipal water reservoir with 14.7 acres of surface area. The reservoir was located in a natural bench in the Waldo Hills (T 8 S, R 2 W, Sections 28 and 29) and is 2,040 feet in length along the center line, 200 feet wide across the bottom, and 28 feet deep. Full storage capacity is 100 million gallons. The reservoir has a clay underlining on the side slopes, and is lined with asphaltic concrete on the bottom and sides. An underdrain system intercepts winter high water tables and seepage. Water is conveyed to the reservoir by a 36" pipeline and this line, and supply lines to Salem, run through low-lying Turner. The water source is the North Santiam River, and a diversion and filtering system is located at Geren Island near Stayton. Turner obtains its drinking water from the Salem municipal water supply.

A drain line carries overflow from the reservoir to a draw located southeast of the reservoir. An intermittent stream is located in this draw and is deeply incised with extensive bank erosion. Fresh riprap was observed in the channel area on September 17, 1999. Improvements are planned for the pipelines and reservoir. Currently, the city of Salem plans to place a floating cover on Franzen Reservoir.

The farm pond is about 0.9 acres in size and is spring fed. Outflow appeared to be limited to spring and winter months in wet years. The discharge culverts had been replaced by a spillway discharging to a southeast draining swale. A small, shallow channel had developed adjacent to the pond at the discharge point, but field observations indicated channelized flow quickly spread into sheet flow.

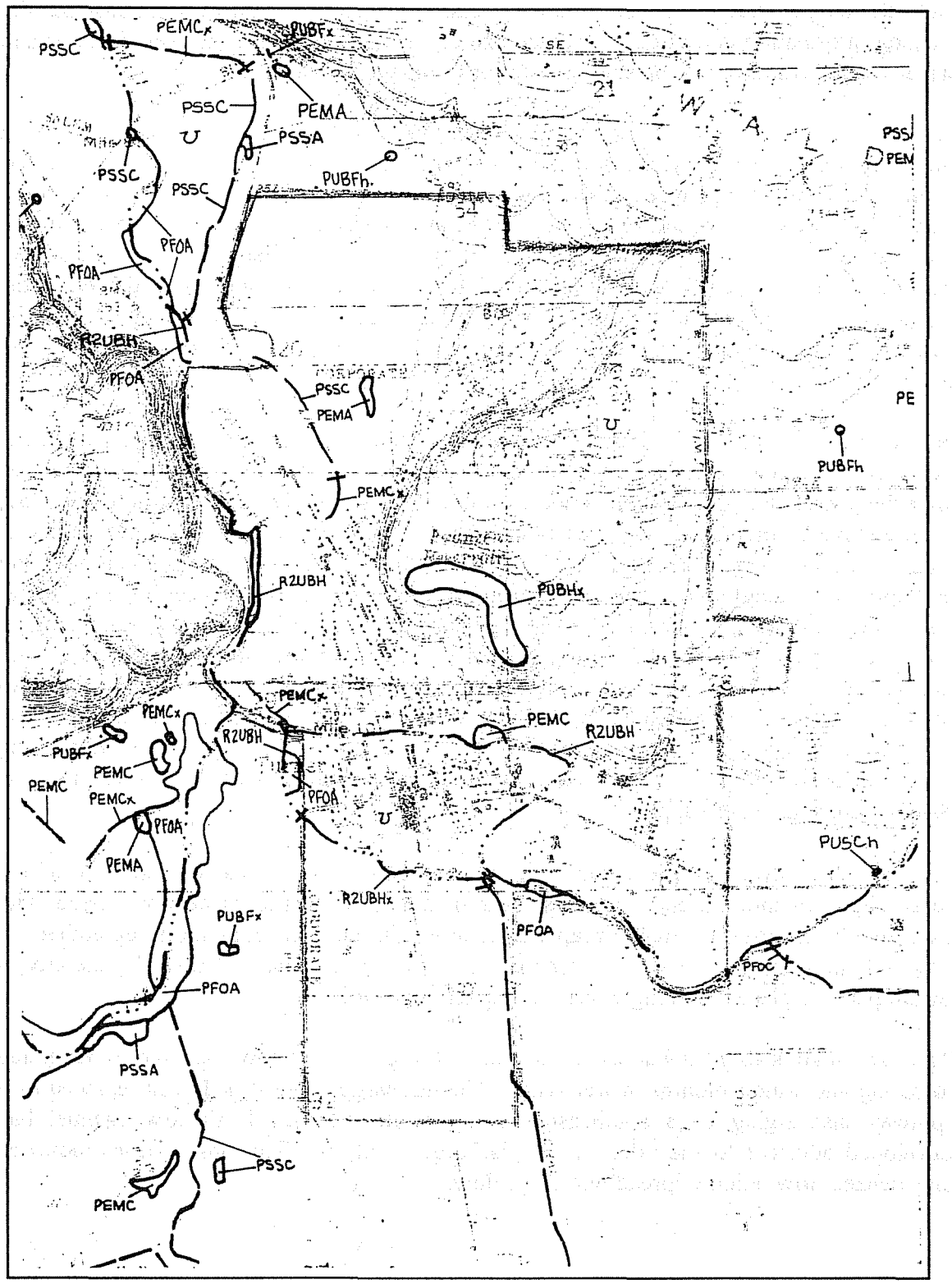


Figure 10. National Wetland Inventory Map for Turner

The gravel mining operation is reclaiming the mine site to a pond to be called Lake Turner. This extraction and reclamation process required permits from both the Department of Mineral Industries and Geology and the Division of State Lands. The current excavtion area is flooded and the pond is surrounded by a berm which screens the operation and prevents sediment laden waters from leaving the site. Source of water is the shallow water table in the area and an intermittent stream, channelized and relocated, flowing out of the adjacent Waldo Hills. Lake Turner will be about 82 acres in size and surrounded by a fringe of mitigation wetlands (Scoles Associates, Inc., 1995). The island proposed for the center of the lake is also a mitigation wetland.

TABLE 6. SUMMARY OF WETLAND INFORMATION FROM NWI MAP

Wetland Code	Map Code Explanation
	Riverine
R2UBH	(R) Riverine; (2) Lower Perennial; (UB) Unconsolidated Bottom; (H) Permanently Flooded
R2UBHx	(R) Riverine; (2) Lower Perennial; (UB) Unconsolidated Bottom; Unknown Bottom; (H) Permanently Flooded; (x) excavated
	Palustrine
PEMA	(P) Palustrine; (EM) Emergent; (A)Temporarily Flooded
PEMC	(P) Palustrine; (EM) Emergent; (C) Seasonal
PEMCx	(P) Palustrine; (EM) Emergent; (C) Seasonal; (x) Excavated
PFOA	(P) Palustrine; (FO) Forested; (A) Temporarily Flooded
PSSC	(P) Palsutrine; (SS) Scrub-Shrub; (C) Seasonal
PUBHx	(P) Palustrine; (UB) Unconsolidated Bottom; (H) Permanently Flooded; (x) Excavated

The National Wetland Inventory (NWI) shows several wetlands mapped inside the Turner UGNA (Figure 10). They are located mainly along Mill Creek, Turner Bypass, and the Perrin Lateral Canal. Wetlands are areas that are saturated or inundated by surface or ground water at a frequency and duration to support a prevalence of vegetation typically adapted for life in saturated soil conditions. The Cowardin system classifies wetlands into five major types, or systems, which are marine, estuarine, riverine, lacustrine, and palustrine. Permanently flooded areas deeper than 6.6 feet are classified as deepwater habitats and can occur in all the wetland systems listed above except palustrine.

Table 6 indicates that riverine and palustrine are the two wetland systems shown on the NWI inside the Turner UGNA. Riverine wetlands are deepwater (deeper than 6.6 ft.) habitats and shallower wetland habitats located in the channels of rivers, creeks, and streams. Riverine habitats are usually unvegetated, but may include nonpersistent emergent vegetation. Palustrine wetlands are freshwater habitats commonly called marshes, fens, bogs, swamps, and prairies. Water depth is less than 6.6 feet. Persistently and intermittently flooded, shallow water bodies are also included in the palustrine system. Riverine and palustrine wetland systems are further subdivided based on tidal influence, flow interval, type of substrate, and dominant vegetation. A more complete description of

the different wetland classes will be given in wetland inventory results section of this report.

2.5.3. Structural Controls and Flow Modification

The flow and channel characteristics of Mill Creek in Turner, and throughout the watershed, have been substantially modified by efforts to drain farmland, distribute water for agricultural and industrial uses, reduce flood damages, and provide for storm water drainage. Flood control efforts in Turner included construction of the Turner Bypass and berms along portions of the creek. In addition, there are 10 bridges over Mill Creek, Turner Bypass, and the Perrin Lateral Canal in the study area.

Two water control districts are located in the Mill Creek watershed at, or above, Turner: (1) Beaver Creek Water Control District, and (2) Santiam Water Control District (SWCD). The low-lying parts of the Turner study area are within the Santiam Water Control District. The District diverts water from the North Santiam River at Stayton for the purposes of irrigation. The District diverts up to 180 cfs and utilizes about 90 miles of canals to service 17,000 acres of farmland. The Perrin Lateral Canal (probably constructed in the early 1900s) and Mill Creek carry diverted water through Turner and into Salem during the summer months.

Irrigation water is provided during the growing season, which is normally defined by the SWCD as May 1 to September 31, but the season can begin on March 1 and end on October 31 if needed, (Trosi, oral communication, 1999). During the winter season, **no** flows are diverted from the North Santiam River and the system collects and transports runoff only from the local watershed area (Mill Creek). The Santiam Water Control District estimates that 130-150 cfs are added to natural flows in Mill Creek from June through September and noted that historically, the creek had periods of very low to no flows in late summer.

Diversion from the North Santiam River began in 1855 for the Willamette Woolen Mill and other industrial uses in Salem. The Salem Ditch diverted water from the river at Stayton and flowed into Mill Creek about 2 miles east of Aumsville. Diverted water also powered saw, flour, and feed mills in Stayton, Aumsville, Turner, and ran a turbine generating electricity at the State Penitentiary (Salzmann, Marion County Historical Society). The water rights have passed through several ownerships. The city of Salem purchased the rights to 102 cfs from Boise Cascade. Presently, this water is delivered to the city by the Santiam Water Control District using a combination of canals and ditches, including the Perrin Lateral Canal and Mill Creek.

The long-standing diversion of water from the North Santiam River into Mill Creek for agricultural and industrial uses has significantly changed the natural hydrology of the creek. Without these diversions there would be much lower summer flows, more typical of other low-lying watersheds of similar size that are not sustained by snow melt. Mill

Creek, Turner Bypass, the Perrin Lateral Canal, and some other ditches in the study area are part of the Santiam Water Control District and, therefore, are wetter in the later parts of the growing season.

Turner Bypass was built by 1968 and was constructed to divert flood flows from downtown Turner reduce flood hazards. The Bypass appears to have been constructed in the lower reaches of the Perrin Lateral Canal. The Perrin Lateral Canal was also relocated to just west of 55th Ave. sometime before 1980, though most maps still show the canal about halfway between 55th Ave. and the railroad tracks. The older canal is still located in the original mapped location. The waterway no longer transports irrigation water , but it does collect local runoff.

2.5.4. Groundwater

Regionally and locally important groundwater resources, or aquifers, are located in the alluvial deposits (Qal) and basalts (Tcr) described in the geology section. Groundwater is linked to both wetland and riparian resources via springs, high seasonal water tables, and baseflow to waterways. Shallow wells (<100 feet) in unconsolidated deposits of silt, sand, and gravel (Qal) in the Stayton Basin yield moderate quantities of water (up to 1000 gpm). These wells are hydraulically connected to river and stream water levels. Wells in recent alluvium along small streams are much less productive. Another important aquifer is located in the permeable zones between flows in the Columbia River Basalt (Tcr). These aquifers yield small to large quantities of water to wells. Typical yields are 100 gpm, and water quality is good (Hampton, 1972). Water storage is limited; and in areas where large quantities are pumped, water levels in the basalt aquifers have declined (OWRD, 1992).

The aquifers are recharged by seasonal precipitation. Shallow alluvial aquifers in this part of the Willamette Valley are recharged by infiltration of precipitation on overlying surfaces. Alluvial aquifers are also hydraulically connected to adjacent streams and rivers (USGS, 1998). Deeper aquifers, such as occur in the basalts, are also recharged by precipitation; but recharge can occur on more distant surfaces, e.g., outcrops in the Western Cascades. Shallow aquifers tend to be unconfined to partially confined (water pressure is equal to atmospheric pressure in an unconfined aquifer). Deeper aquifers tend to be confined and water rises in wells drilled into these aquifers.

Declining ground water levels for aquifers located in the Columbia River Basalts have been documented for several areas in the Willamette Valley (OWRD, 1992). The water use rate exceeds the natural recharge rate, and aquifer water levels fall. These areas have been identified and are managed by the Oregon Water Resources Department to limit further declines. Turner is located between two Groundwater Limited Areas (GLA), the Stayton - Sublimity GLA and South Salem Hills GLA. In the adjacent GLAs, water rights issued for new wells requiring a permit (non-exempt wells) have been indefinitely discontinued, and only new wells for exempt uses are allowed to tap the aquifers in the Columbia River Basalts.

Marion County recently added a Water Management Plan to the County's Comprehensive Land Use Plan (1998). The Water Management Plan included Background Information, Water Resources Element, and Goals and Policies sections. In recognition of potential supply problems in aquifers located in the basalt (Tcr) and marine sediments (Tm), Marion County developed a Sensitive Groundwater Overlay (SGO) zone which reviews applications for new land uses that use water which is exempt from the permitting requirements of the State. The Sensitive Groundwater Overlay included the Turner area. The permit review process assesses the risk that the proposed use will adversely affect the sustainability of aquifer production and other existing wells.

2.5.5. Water Quality

Information about surface and groundwater quality in the Turner area was obtained from the Department of Environmental Quality (DEQ), Oregon Health Division (OHD), and other background reports. This information was compiled from monitoring programs run by state agencies to comply with water quality standards set by the U.S. Environmental Protection Agency (EPA). Water quality investigations have also been undertaken for the Willamette Basin by the United State Geological Survey for surface water and groundwater.

The Clean Water Act (CWA) requires that states publish a list of surface water bodies that fail to meet water quality standards. The 303(d) list identifies types and location of water quality problems, but does not identify causes. Plans to improve water quality must be developed when a water body is placed on the 303(d) list. DEQ updates the list every three years, and the updated 1998 list was consulted for this project.

Water sampling data indicated that some beneficial uses of the Mill Creek are limited due to low water quality, and the stream was on the 303(d) list compiled in 1998. Water-contact recreation was not advised all year round, from the headwaters to the mouth, due to high bacteria (fecal coliform) levels in the water. Mill Creek was also rated with severe stream problems for water quality conditions affecting fish, and moderate stream problem ratings for water quality conditions affecting aquatic habitat (DEQ, 1988). Water quality problems in Mill Creek are probably related to agricultural practices and septic effluent, and are exacerbated by natural low flow in the summer months. Other water quality problems noted in the past for Mill Creek include high turbidity levels during high flow periods, fuel spills in urban areas, and cannery waste discharges (Mill Creek Watershed Task Force, 1983).

Regional studies also show that water quality in watersheds similar to Mill Creek is degraded by urban development and agricultural land uses. Pesticides and nutrients are thought to enter surface water in two main pulses: (1) the first major storms of the late fall/early winter, and (2) the large spring rainfall events that occur after the application of fertilizers and pesticides during spring planting (Rinella and Janet, 1998). Urban storm

water runoff from Sublimity, Stayton, Aumsville, Turner, and Salem is discharged to Mill Creek.

Natural groundwater quality, from a regional perspective, is generally good, though some groundwater is saline or high in iron/manganese and arsenic content (Oregon Water Resources, 1992). Recent studies suggest that shallow (<80 feet) groundwater supplies in the Willamette Valley are affected by chemicals associated with human activities (Hinkle, 1997). Nitrate concentrations are higher in groundwater downgradient of irrigated agriculture. About 9 percent of the wells tested exceeded the drinking water quality standard for nitrate. Low concentrations of pesticides were also detected in about 1/3 of the sampled wells; but only one chemical, dinoseb (a common herbicide used to control weeds), exceeded the drinking water standard. A higher concentration of volatile organic compounds (degreasers and solvents) were associated with urban land use.

Groundwater quality in Turner probably reflects regional patterns, but has had a strong local contaminant signature related to on-site sewage disposal. This situation is changing because Turner has recently built a wastewater collection system and joined the Salem municipal sewage treatment system. Some groundwater in the Turner area was also contaminated by a wood waste dump site located in southeast Turner and prompted the city to join Salem's municipal water system.

2.6. Ecoregion

2.6.1. Overview

Ecoregions are geographic areas with characteristic physical features, ecosystem processes, and plant and animal communities. Ecosystems are an interrelated assemblage of living organisms and the supporting physical environment. Turner is located in the Willamette Valley Ecoregion (Natural Heritage Advisory Council, 1998). Prior to European settlement, the terrestrial ecosystem of the Willamette Valley was composed of Douglas-fir and Ponderosa pine woodlands, marginal oak woodlands, open oak savannas and prairie, and gallery forests. Wetland and aquatic ecosystems in the valley were mainly riverine (stream and rivers), lacustrine (lake and pond), and palustrine (wet meadow, spring, marsh, swamp) types (Franklin and Dyrness, 1973; Oregon Natural Heritage Plan, 1998). Pre-European inhabitants maintained these vegetation patterns by annual fall burning which promoted and maintained open grassy areas and oak savanna in the valley.

Given the variety of land form types, slope aspects, geology, soils, and waterways occurring in Turner, it is likely that a diverse set of ecosystem types was located here, and included most of the terrestrial and aquatic ecosystem types found in the Willamette Valley prior to European settlement. The most common types were probably gallery forests, oak savannas and prairies, and oak woodlands.

Current land use patterns in the Willamette Valley have substantially altered the pre-settlement vegetation patterns and wildlife habitats. Presently, the Willamette Valley is

dominated by vegetation associated with farming. Woodlots and urbanized areas are interspersed within the agricultural lands. Riparian forests and wetlands persist in limited areas along rivers and streams.

2.6.2. Local Vegetation Communities

Aerial photography and field observations indicated that although much of the natural vegetation inside the Turner UGNA has been converted into urban or agricultural land uses, existing vegetation shows the diversity indicated by the historical vegetation maps. The steep, west-facing slopes of hilly Turner are dominated by a forest composed of Douglas-fir *(Psuedotsuga menziesii)*, bigleaf maple *(Acer macrophyllum)*, and Oregon white oak *(Quercus garryana)*. In eastern Turner, where the slopes are flatter, existing vegetation is dominated by pasture and Christmas tree plantations. On the ridge tops where soils are shallow and droughty, remnants of madrone *(Arbutus menziesii)* -Douglas-fir - oak woodlands with poison oak *(Rhus diversiloba)* and snowberry *(Symphoricarpos albus)*; and Oregon white oak - madrone/poison oak/bunchgrass woodlands were observed.

In general, very limited amounts of remnant native vegetation are located on the terraces and floodplains of low-lying Turner. Narrow riparian woodlands dominated by Oregon ash *(Fraxinus latifolia)*, bigleaf maple, and Oregon white oak are located along Mill Creek, Turner Bypass and the old location of Perrin Lateral Canal. The riparian forest is fairly extensive in two locations:

1. Along Mill Creek between Delaney Rd. Bridge and the rail road bridge at the northern study boundary, and
2. Between the old and new locations of the Perrin Lateral Canal in southeast Turner.

2.6.3. Fish and Wildlife Habitat

The Oregon Department of Fish and Wildlife (ODF&W), Division of State Lands (DSL), Oregon Department of Forestry (ODF), and Oregon Natural Heritage Program (ONHP) were consulted for information about fish and wildlife habitat in Turner. As previously mentioned, native vegetation and wildlife habitat have been substantially altered by urbanization in Turner and agriculture in the surrounding lands. Therefore, it is very likely that fish and wildlife habitat will not be abundant inside the Turner UGNA and quality may be degraded.

Regional studies for the Main Stem Willamette Subbasin (Rien and others, 1992) indicated that crayfish, winter steelhead, spring chinook, rainbow trout (possibly), cutthroat trout, Oregon chub, and whitefish are native to the subbasin (Resources Figure 9). Summer steelhead, fall chinook salmon, shad, and warm water game fish (including bass, bluegill, and brown bullhead) have been introduced into the watershed. Sturgeon above the Willamette Falls were also introduced. ODF mapped Mill Creek as fish-bearing, but other watercourses in Turner were not shown as fish-bearing.

Native fish populations in Mill Creek included minor runs of winter steelhead, some spring chinook salmon, and cutthroat trout in the 1980s. Rough fish also used the creek. The gravel beds of Mill Creek were noted to be excellent for the spawning and rearing of the introduced fall Chinook salmon (Mill Creek Watershed Task Force, 198). The first adult returns were noted in 1970 and were related to stocking program that began in Cascade Gateway Pond. The stocking program later included ponds in the Aumsville and Stayton areas. Rainbow trout were also stocked in the Cascade Gateway Pond.

Mill Creek, between the Willamette River and the Salem Ditch is mapped as Essential Indigenous Anadromous Salmonid Habitat. Mill Creek is part of the 17,600 stream miles in Oregon that are currently so designated, as of May 1, 1999. This habitat, identified by the DSL after consultation with ODFW, is defined as necessary to prevent the depletion of native salmon species during their life history stages of spawning and rearing. The glossary contains a definition of essential habitat (Appendix A). The designation applies only to those species that have been listed as Sensitive, Threatened, or Endangered by state or federal authority. One practical implication of this designation is that all removal and fill activities, even those involving less than 50 cubic yards, require a permit from DSL (OAR 141-102-000 through 141-102-100).

On March 16, 1999, after long-term monitoring of fish population trends, the National Marine Fisheries Service (NMFS) listed several new fish species as protected by the Endangered Species Act (ESA). The upper Willamette River winter steelhead and spring chinook salmon were listed as threatened with extinction. Plant and animals threatened with extinction are protected under the ESA. The purpose of this federal law is to save species from extinction, and the act prohibits "take" of listed species. Take includes killing, harming, or harassing the species; and federal agencies are constrained from conducting, authorizing, or funding any projects which may include "takings." Federal and private projects may go forward if measures to protect the long-term survival of the species or essential habitat are developed to compensate for short-term project-related impacts.

Table 7 shows some species in the Willamette Valley currently "listed," or with the potential to be "listed" under ESA. Presently, about 65 animal species and 23 plant species in the Willamette Basin are considered at-risk. The composition of this list changes; and it is important to check with the FWS, ODF&W, and ONHP for the most current version of the list. Field checks and agency consultations for these species are typically a part of the permitting process in <u>any</u> projects supported by federal funds.

TABLE 7. SELECTED PLANT & ANIMAL SPECIES THAT ARE RARE, THREATENED, OR ENDANGERED WITH EXTINCTION

Species	Category of Concern
PLANTS	
Bradshaw's lomatium *(Lomatium bradshawii)*	Listed endangered[2]
Nelson's checker-mallow *(Sidalcea nelsoniana)*	Listed threatened
Willamette daisy *(Erigeron decumbens var. decumbens)*	Listed threatened
Kincaid's lupine *(Lupinus sulphureus var. kincaidii)*	Listed threatened
FISH	
spring Chinook (*Onchorynchus tshawytscha)*	Listed threatened
Pacific lamprey *(Lampetra tridentata)*	Species of concern[4]
winter steelhead *(Onchorynchus mykiss)*	Listed threatened
Oregon Chub *(Oregonichthys crameri)*	Listed threatened
BIRDS	
Aleutian Canada goose *(Branta canadensis leucopareia)*	Listed threatened
Bald eagle *(Haliaeetus luecocephalus)*	Listed threatened
INVERTEBRATES	
Fender's blue butterfly *(Icaricia icarioides fenderi)*	Listed threatened
MAMMALS	
Long-eared myotis (bat)	Species of concern
Fringed myotis (bat)	Species of concern
Pacific western big-eared bat	Species of concern
AMPHIBIANS & REPTILES	
Northwestern pond turtle *(Clemmys marmorata marmorata)*	Species of concern
Northern red-legged frog *(Rana aurora aurora)*	Species of concern

[1]Listed as threatened with extinction under the Endangered Species Act (ESA)
[2]Listed as endangered with extinction under the ESA
[3]Being considered for listing as threatened or endangered with extinction under the ESA
[4]Species whose conservation status is of concern but for which further information is still needed

Existing records of rare, threatened, and endangered plant and animal species, maintained by the Oregon Natural Heritage Program (ONHP), showed 8 occurrences within a two-mile radius of Turner (Terry Campos, ONHP, written communication, 1999). Species noted included: Oregon spotted frog, upper Willamette winter steelhead, Oregon chub, Willamette Valley larkspur *(Delphineum oreganum)*, shaggy Horkelia *(Horekia congesta ssp congessta)*, meadow checkermallow *(Sidalcea campestris)*, and Nelson's sidalcea *(Sidalcea nelsoniana)*. The Nelson's sidalcea occurrence is a population of plants under observation since 1985.

There are no identified ecologically or scientifically significant areas, wilderness areas, Oregon recreation trails, or wild and scenic waterways within or adjacent to the Turner UGNA. However, Turner is located in a unique geologic-geomorphologic setting noted in many of the background sources consulted for this study. The Turner "water gap" is an interesting and unique landform produced by a combination of faulting and fluvial

processes. Subsurface information suggests that the ancestral North Santiam River once flowed through the gap laying down deep, fan-like deposits of gravel in the Stayton Basin and Salem area (Crenna and Yeats, 1994).

2.7. Development Limitations

Current development limitations in Turner are mainly excessive slope (exceeding 25 percent), flooding, and poor drainage. Wetland and riparian resources are often located in areas associated with poor drainage and flooding. Preserving wetland and riparian resources can help reduce repetitive, flood-related damages to buildings and structures.

Flooding is common in those portions of the Mill Creek watershed that lie below the 450 feet (ACOE, 1968). Of the development limitations listed above, flood hazards are widespread in low-lying Turner and have periodically caused damage throughout the town's history. In December 1964, Turner sustained an estimated $100,000 in flood damages and 3,000 acres were flooded in the watershed (Mill Creek Watershed Task Force, 1983). In 1996, Turner sustained at least $146,415 in damages (Mid-Willamette Valley Council of Governments, 1996).

Several existing sources of information can be used to identify the location of flood hazards in a community including: Flood Insurance Rate Maps (FIRM) generated by the Federal Emergency Management Agency (FEMA), Soil Survey of Marion County, and community experience. Typically, land use decisions, building standards, and other regulations are linked to FIRMs; but FEMA-type regulations can be applied by a community to areas known to flood but not depicted on a FIRM.

The FIRM Maps (41047C0677 G, 41047C0679 G, 41047C0681 G, and 41047C0683 G) show that land inside the Turner UGNA is mapped Zone X- other areas, Zone X- other flood areas, Zone AE, and Zone AE- floodway. Areas in Zone AE have a 1-percent chance of flooding in any given year (the "100-year" or base flood) and the base flood elevation has been established. Structures located in Zone AE areas are subject to National Flood Insurance Program regulations. Zone X, other flood areas (lightly shaded on Figure 11), are areas between the limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flood with average depths less than one (1) foot; or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood. Zone X, other areas, are outside the 500-year floodplain.

Land adjacent to Mill Creek and Turner Bypass lies in Zone AE and Zone X (Figure 11), and a floodway is mapped along the creek and bypass. The Base Flood Elevation has been has been determined along Mill Creek by previous studies. The elevation is about 260 feet at the northern study boundary and 296 feet at the east study boundary where Mill Creek flows under Marion Road. The area affected by the 1-percent chance is narrowest along Mill Creek in north central Turner where the "gap" constricts the floodplain width to about 400 feet. The flood plain width widens to 2,350 feet on east

edge of the study area and 3,500 feet on the north end. Most of downtown central Turner between 1st and 6th Streets and Ash and Gaston Street, lies within Zone AE or Zone X, other flood areas. Most of higher Turner is located in Zone X, other area.

Table 3 contains information from the Soil Survey of Marion County regarding landscape position and flood hazards. Much of Turner is low foothills, side slopes, terraces, and fans located above modern floodplains and subject to a much lower risk of flooding. However, two soils in Turner, Courtney and Wapato, are located on bottomlands and floodplains associated with higher flood risks. These soils are rated with severe development limitations for structures and roads due to flooding or high seasonal water tables (USDA, 1972). Clackamas and Sifton soils are located on terraces where the lower elevations may be flood prone.

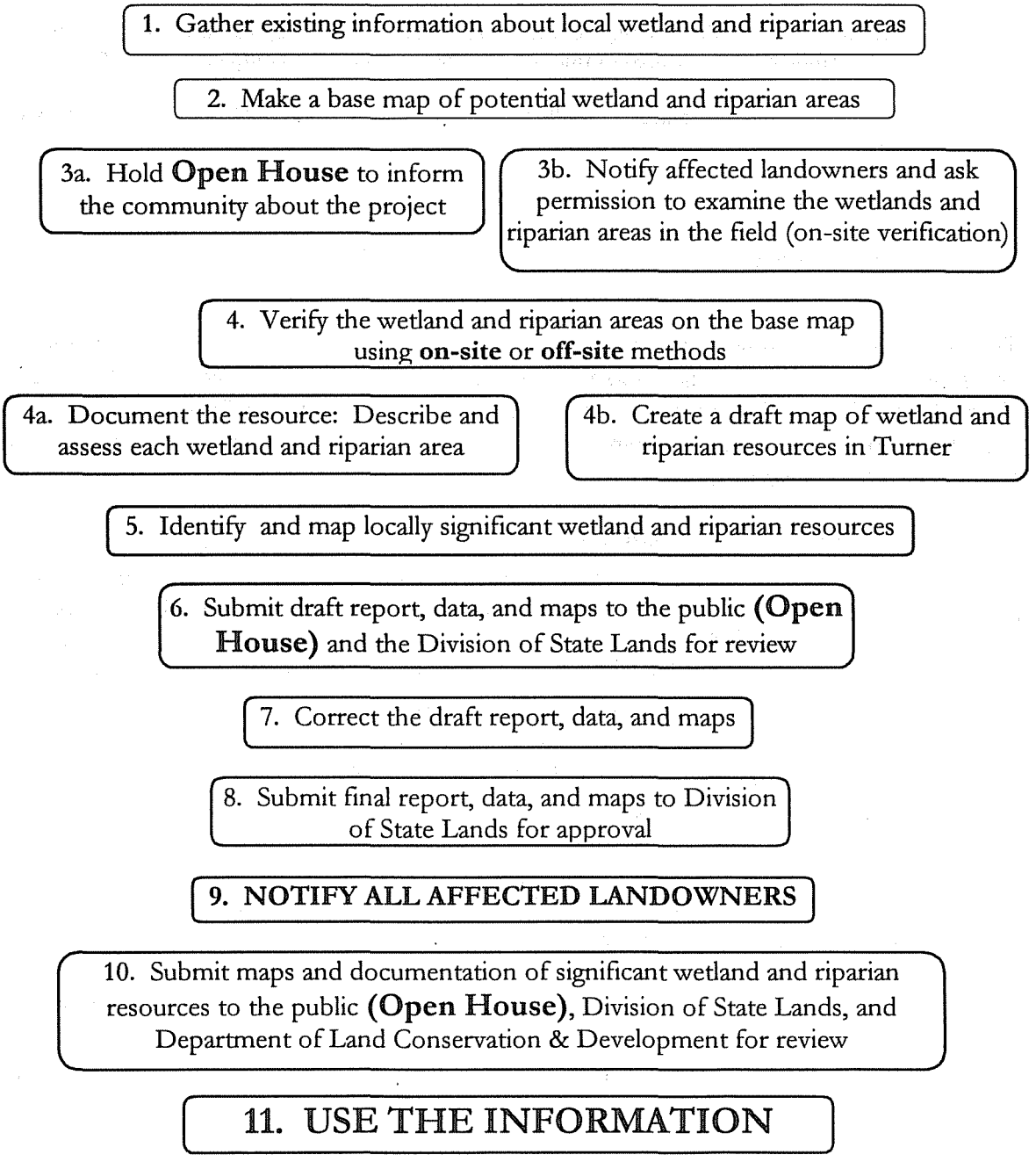
Geomorphic maps, based on soils maps, show that low-lying Turner is located on the Ingram and Winkle surfaces (Reckendorf, 1998). The Winkle surface is the oldest surface related to the present drainage system (less than 10,000 years old) and was typically flooded in 100- to 500-year events. The Ingram surface lies below the Winkle and is the higher of the two floodplains associated with the modern drainage system. Both Ingram and Winkle surfaces were probably flooded by the largest known flood in the Willamette Valley which occurred in 1861 and inundated 513,000 acres.

3. Project Methodology

3.1. Local Wetland Inventory Methodology

A Local Wetland Inventory (LWI) is a systematic survey of an area to identify, characterize, and map the approximate boundaries of wetland resources. Inventory methodology is defined by OAR 141-86-110 through 141-86-240 and the project steps are summarized in Figure 12.

Figure 12. Project Methodology Flow Chart



The LWI begins by compiling a base map of potential wetlands from existing information which are listed below:

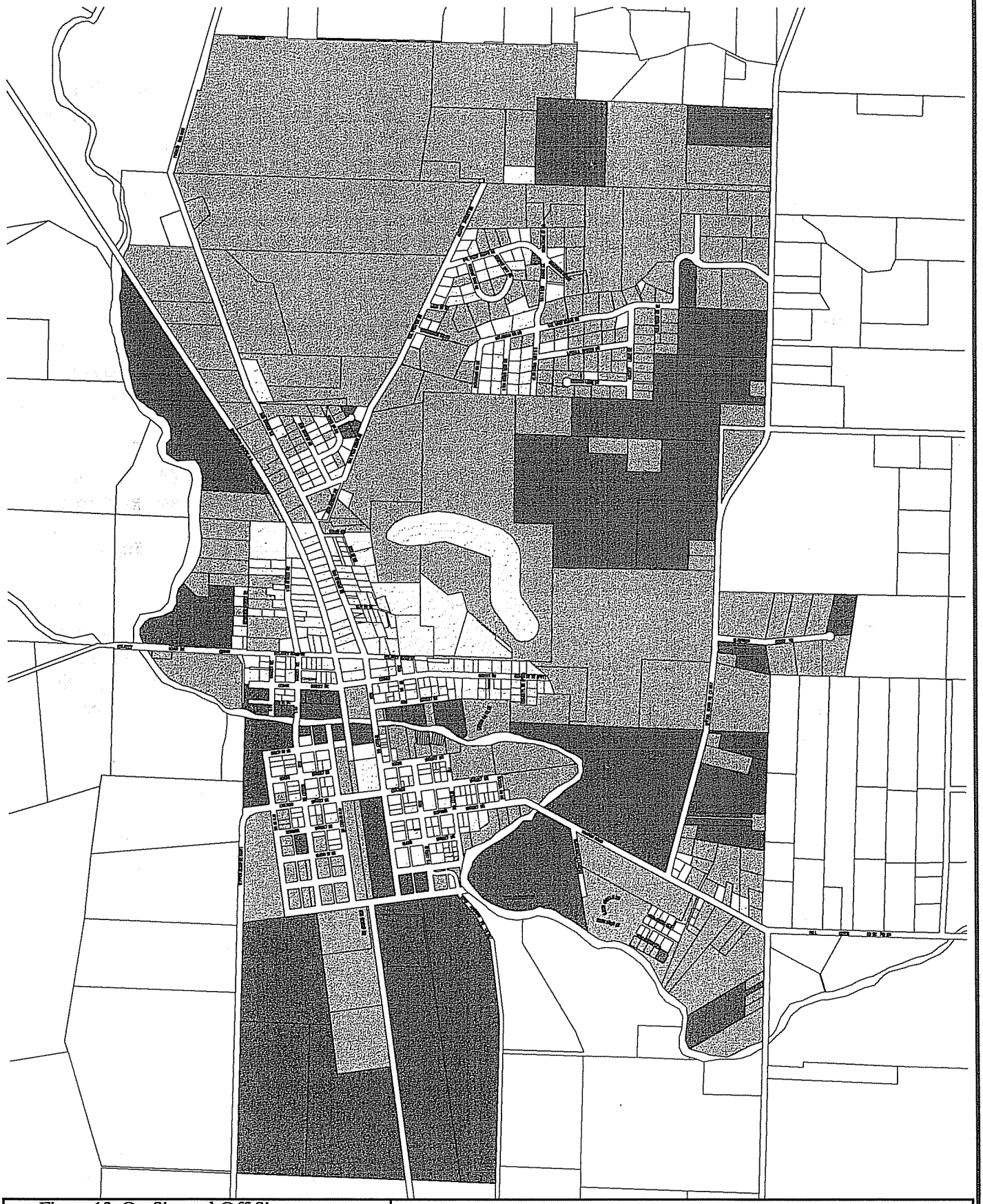
- National Wetlands Inventory (NWI) Turner, Oregon, 7.5-minute quadrangle, US Fish and Wildlife Service (USFWS);
- Wetland delineations, determinations, and permits on file with the Division of State Lands;
- United States Geological Survey, Topographic Map Series, Turner Quadrangle, 7.5 minute quadrangle;
- Soil Survey of Marion County, Oregon, US Department of Agriculture Natural Resources Conservation Service (NRCS) (formally known as the Soil Conservation Service), 1972;
- Color slides of areas enrolled in USDA farm programs, 1993, 1996, 1999, Farm Services Agency;
- Color photography, 1996, 1" = 800', WAC Corporation; and
- Black and white orthorectified, digital photography, 1995, 1" = 100', Photogrammetric Data Services.

The base map of potential wetlands was used to notify landowners with potential wetland areas on their property. Landowners were invited to an Open House and asked to select either the on-site or off-site wetland verification method. On-site verification of the potential wetland was performed where the landowner granted permission to enter the site and Figure 13 is a map of those parcels where field work was permitted.

3.1.1. Routine On-site Verification

The purpose of on-site verification was to identify the extent and location of wetlands larger than 0.5 acres and to characterize the vegetation, soils, hydrology in the wetland. Wetland areas were identified in the field using the 'triple parameter' method for routine on-site delineations described in the *US Army Corps of Engineers (ACOE) Wetlands Delineation Manual* (Environmental Laboratory, 1987). This method requires an area to possess a prevalence of hydrophytic vegetation, wetland hydrology, and hydric soils. Under normal circumstances, positive indicators of each of these three parameters must be present for an area to satisfy the criteria for a wetland.

Methods outlined in the *Food Security Act Manual* (USDA, 1996) were used in agricultural areas where vegetation was disturbed. The principle difference between the ACOE and USDA methods is the criteria used for wetland hydrology. On agricultural land with disturbed vegetation, the wetland hydrology criteria is satisfied if the area is inundated (as opposed to saturated near the surface) for a significant portion of the growing season (two weeks). Color slides (aerial photography) taken in 1993, 1996, and 1998 were obtained from the Farm Services Agency and examined for evidence of wetland hydrology (Appendix H).



Title: Figure 13. On-Site and Off-Site Verification Areas

Prepared by: Mid-Willamette Valley Council of Governments

Created by:	Date:	Revision:
AJW	November 16, 1999	1

Filename: r:/common/naturalres/wetlands/tum_lwi/maps.apr

Figure 13. On-site and Off-Site Verification Areas 8.5x11--Rev: 1

On-site Verification
Off-site Verification
Upland Parcels

500 0 500 1000 Feet

This map is for illustrative purposes only and is to be used for planning purposes.

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Each potential wetland site was examined for the presence of wetland hydrology. Water is the key factor in wetland occurrence and causes the formation of hydric soils and habitat suitable for water-adapted vegetation. For the purpose of identifying wetlands, an area is considered to possess wetland hydrology when the soil is saturated to the surface for more than 12.5 percent of the growing season. Areas saturated to the surface between 5 and 12.5 percent of the growing season are sometimes wetlands and sometimes uplands. Areas saturated to the surface for less than 5 percent of the growing season are not wetlands. The growing season is defined as the number of days between the last killing frost in the spring and the first killing frost in the fall during an average year. As mentioned in the subsection on climate, the growing season in the Willamette Valley in Marion County is defined as March 3 to November 21 (NRCS, 1972), an interval of 263 days. Saturation to the surface must therefore occur for a minimum of 13 consecutive days (5 percent) during the growing season, but more likely for 33 consecutive days (12.5 percent), in order for wetland hydrology to occur.

Data on hydrology should be collected during the early growing season (April through early May in the project area). Otherwise, wetland hydrology must be assumed to be present during the growing season based on field indicators. Field indicators are divided into two categories: primary and secondary. Primary indicators include visual observation of inundation or saturation within 300 millimeters (12 inches) of the surface, water marks on woody vegetation or other fixed objects (e.g., fence posts), drift lines, sediment deposits, and drainage patterns. Secondary field indicators include the presence of oxidized rhizospheres (rust coloration around living roots), water-stained vegetation, morphological plant adaptations, and local soil survey data. At each sample plot, the surrounding area was examined for the presence of these primary and secondary indicators of wetland hydrology.

Each site was examined for the presence of hydric soils. These are soils which are saturated, flooded, or ponded long enough (usually a week or more) during the growing season to develop anaerobic conditions in the upper part (Environmental Laboratory, 1987). Typical field indicators of hydric conditions include: organic soils, thick organic layers (histic epipedons), gleying (gray soil colors), and low soil chromas (intensity of the soil hue) with or without redoximorphic features (mottles). Low soil chroma and redoximorphic features are indicators of reduced soil conditions caused by anaerobic, wet environments. Redoximorphic features indicate a fluctuating water table. Local NRCS offices and the National Technical Committee for Hydric Soils (NTCHS) have published complete lists of hydric soil series. Hydric soils in the study area were Wapato silty clay locam and Courtney gravelly silty clay loam (Table 4 and Appendix B)

Soil pits were dug to a minimum depth of 15 inches at each sample location. Soil was analyzed for color using the Munsell Soil Color Chart (Munsell Color, 1990). Soil color is based on hue, value, and chroma. A soil color denoted by "10YR 3/2" has a hue of 10 yellow-red, a value of 3, and a chroma of 2. Prescribed methods require a colormetric determination immediately below the "A" horizon, or ten inches, whichever is less. A

hydric mineral soil usually will have either a matrix chroma of 2 or less in soils with redoximorphic features, or a matrix chroma of 1 in soils without redoximorphic features.

Each site was examined for the presence of hydrophytic, or "water-loving" vegetation. Vegetation plots (0.01 acre) were established in areas of typical homogeneous vegetation, and all plant species observed were identified (Hitchcock and Cronquist, 1973; Reed, 1988). Percent cover of all plant species identified was estimated. Dominant species were those species in each stratum (tree, shrub, and herb layer) that, when ranked in descending order of estimated percent areal coverage and cumulatively totaled, immediately exceed 50 percent of the total coverage. Additionally, any species comprising at least 20 percent of the total coverage for their respective stratum was also considered dominant.

The US Fish and Wildlife Service has classified vegetation according to its frequency of occurrence in wetlands (Reed, 1988). Plant species have been given wetland indicator status of either obligate wetland (OBL), facultative wetland (FACW), facultative (FAC), facultative upland (FACU), or upland (UPL) based on their probabilities for occurring in wetlands. Table 8 provides definitions of plant indicators used to determine wetland status.

TABLE 8. PLANT INDICATORS USED TO DETERMINE WETLAND STATUS

Indicator Symbol	Indicator Status	Definition
OBL	Obligate	Species that occur almost always (estimated probability >99 percent) in wetlands under natural conditions.
FACW	Facultative wetland	Species that usually occur in wetlands (estimated probability 67 to 99 percent), but occasionally are found in non-wetlands.
FAC	Facultative	Species that are equally likely to occur in wetlands or non-wetlands (estimated probability 34-66 percent).
FACU	Facultative upland	Species that usually occur in non-wetlands (estimated probability 67-99 percent), but occasionally are found in wetlands.
UPL	Upland	Species that occur almost always in non-wetlands under normal conditions (estimated probability >99 percent).
NI	No indicator	Species for which insufficient information was available to determine an indicator status.

Source: Reed, 1988.

The *National List of Plant Species That Occur in Wetlands: Northwest (Region 9)* (Reed 1988) uses a plus (+) sign or a minus (-) sign to specify a more hydrophytic or less hydrophytic portion, respectively, of a particular wetland indicator frequency for the three facultative types of indicators. Under normal circumstances, an area is considered to have hydrophytic vegetation when more than 50 percent of the dominant species, from all plant strata, are classified as either obligate wetland (OBL), facultative wetland (FACW), or facultative (FAC), excluding FAC-.

Data forms were completed for typical wetland and upland communities observed at each field verification site. These data forms are included as Appendix D. Areas in which wetland hydrology, hydric soils, and hydrophytic vegetation were all simultaneously present would likely be considered wetlands by the ACOE or Oregon Department of State Lands (DSL).

The wetland was also classified by type as described in Cowardin et al. (1979). Section 2.5.2 gives a brief explanation of the wetland systems shown on the NWI in Turner. Field verification plots were placed so as to best characterize the type of wetland. Additional plots were used to characterize major changes in plant community within a wetland type. Pairs of wetland plots were used to characterize the wetland/ upland boundary.

3.1.2. Routine Off-Site Verification

Off-site verification of the potential wetland was performed where landowners did not grant permission to enter the site (Figure 13). Off-site verification involved aerial photo interpretation of those areas identified as potential wetlands on the base map. The photographic signature of wetlands verified on-site (ground truthing) was used to interpret the aerial photography. In some instances, it was possible to observe the potential wetlands from public roads or other observation points.

3.2. Public Involvement

The local wetland and riparian area inventory process included several steps where the public and local decision makers were informed about the project and given an opportunity to review and correct the information. All landowners, about 230, with property underlying potential wetlands on the base map were notified about the project and invited to an Open House (April, 1999). Two articles about the project were placed in the Turner Community Newsletter. The purpose of the Open House was to inform the community about wetland and riparian resources, the inventory process, and how the inventory results would be used in development and natural resource planning. The Turner City Council was also briefed about the project (March, 1999).

The draft local wetland and riparian area inventory, including locally significant wetlands and high-value riparian areas, was available for public review and comment, and a second Open House was held. After the inventory was corrected to reflect review comments, all landowners with wetlands mapped on their property were sent a letter about the inventory results. One final Open House was held to discuss the natural resource planning requirements for locally significant wetlands and riparian areas.

3.3. Wetlands Quality Assessment

The local wetland inventory gathered information about the location, type, and size of wetland resources in the Turner Urban Growth Notification Area. Information about the quality of wetland resources was obtained by applying the Oregon Freshwater Assessment Methodology (OFWAM) to inventory information. Wetland quality assessments; combined with data about size, type, and location; completes the information required to determine resource "significance", and proceed with long-range planning to conserve significant natural resources (Oregon Land Use Planning Goal 5).

3.3.1. The Oregon Freshwater Assessment Methodology

The Oregon Freshwater Assessment Methodology (OFWAM) gathers information about the watershed and the individual wetlands from background reports, maps, and field work. Relevant information in existing background reports and maps has been summarized in Section 2 of this report which described the study area characteristics. The methodology indicates which functions are performed by wetlands in the planning area. OFWAM evaluates four ecological functions (wildlife habitat, fish habitat, hydrologic control, and water quality); three social functions (education use, recreational use, and aesthetic appeal), and two wetland conditions (sensitivity to impact and enhancement potential). The functions and conditions considered in OFWAM are:

- **Wildlife Habitat-** evaluated the habitat diversity for species typically associated with wetlands and wetland edges. No single species is emphasized.
- **Fish habitat-** evaluates how the wetland contributes to fish habitat in streams, ponds, or lakes associated with the wetland for either warm-water or cold-water fisheries. No single species or group of species is emphasized.
- **Water quality-** evaluates the potential of the wetland to reduce the impacts that excess nutrients and sediments in runoff water will have on downstream waters.
- **Hydrologic control-** evaluates the effectiveness of the wetland in storing floodwaters and reducing downstream flood peaks.
- **Sensitivity to impact-** evaluates the susceptibility of a wetland to secondary effects of impacts.
- **Enhancement potential-** evaluates the suitability of a degraded wetland site for enhancement.
- **Education-** evaluates the suitability of the wetland as a site for an "outdoor classroom".

- **Recreation-** evaluates the suitability of the wetland and associated watercourses for non-powered boating, fishing, and similar recreation activities.

- **Aesthetic quality-** evaluates the visual and aesthetic quality of the wetland.

3.3.2. Wetlands of Special Interest For Protection

Wetlands that are uncommon, already in a resource management plan, or protected by regulatory rules or statutes are categorized as "wetlands of special interest for protection" by OFWAM. The methodology uses ten questions to screen out this type of wetland which includes: wetlands that contain or provide critical habitat for species that are rare, threatened, or endangered with extinction; wetlands dedicated as a state or federal natural area or natural heritage conservation area; wetlands dedicated as a Nature Conservancy Preserve, wetlands of regional or national significance for migratory birds; wetlands protected by local management plans under Goal 5 or 17; wetlands that are designated a State Outstanding Resource Water; wetlands that are in a protected area in a park management plan; wetlands in a protected mitigation site; wetlands in a federal restoration or conservation reserve program; or wetlands that are rare or unique in Oregon. Appendix G in the OFWAM methodology contains a list of rare wetland types.

3.3.3. Wetland Characterization

OFWAM characterizes wetlands by collecting information in a systematic manner. The characterization includes a landscape section based on existing information and a site specific section that requires field observation and measurement. The landscape section includes 14 questions regarding watershed setting, drainage basin, topography, hydrologic profile, land uses within the watershed, water quality, and biologic characteristics of the watershed. The field observation and measurement section focuses on individual wetland sites and includes 44 questions regarding wetland structure and relationship to surrounding landscape, wetland habitat, fisheries habitat, streams connected with a wetland, lakes or ponds, wetland hydrology, public access to wetland site, recreation and aesthetics. Appendix C contains wetland characterization sheets for wetlands in the Turner UGNA. Appendix D contains wetland determination data forms which record field observation of landscape position, land use, vegetation, soils, and hydrology.

3.3.4. Function and Condition Assessment

The information gathered during wetland characterization was used to assess the functions and conditions listed above for each individual wetland. The assessment included a set of questions, directions, rationales, and criteria. The assessment questions reference questions answered in the wetland characterization process. The criteria assign a relative value to each function and condition based on how the questions were answered. For example wildlife habitat can be assessed as diverse, providing some habitat, or lost or not present; and aesthetics can be assessed as pleasing, moderately pleasing, or not pleasing

depending on how the questions were answered. Appendix C contains OFWAM summary sheets for wetlands in the Turner UGNA. The summary sheets recorded how each question in the assessment was answered and the assessment results for each function and condition.

3.4. Riparian Area Inventory

The riparian area is the land immediately adjacent to a water resource which affects, or is affected by, the water resource. The riparian area is a transitional zone between aquatic and upland habitat. The importance of riparian areas in maintaining or restoring conditions that support fish and wildlife habitat, clean the water, and minimize flood damages has become increasingly clear in Oregon watersheds especially as adjacent land uses intensify. Urban areas are required under State Land Use Goals 5 and 17 to inventory riparian resources and develop management plans to protect significant resources. Forest land uses adjacent to water resources have been required to minimize disturbance to the riparian area beginning in 1971 and farm land uses are in the process of developing voluntary management plans, Agricultural Water Quality Management Plans, for riparian resources under Senate Bill 1010.

3.4.1. Riparian Functions

Riparian areas perform many essential ecological functions which provide economic and other benefits. The urban inventory and assessment process focused on four riparian functions: (1) water quality, (2) flood management, (3) thermal regulation, and (4) wildlife habitat. The open space, recreational use, aesthetic enjoyment, and educational value of riparian areas are also very important in urban areas and can add significantly to the quality of life. During field work, numerous Turner residents were seen swimming in or strolling along Mill Creek.

Riparian areas benefit water quality by absorbing precipitation, filtering and trapping surface runoff and sediments, using nutrients, stabilizing channel location, and reducing bank erosion. Riparian areas reduce the force and volume of floodwaters by temporary and permanent storage of water. This stored water recharges the shallow aquifer and provides baseflow to waterways in the summer months. Riparian areas provide shade which moderates temperatures in and around the riparian resource. Shade can prevent additional increases in water temperature. Water temperature is linked to oxygen availability and thus affects all organisms in the water. Salmonid fish require cool water for all stages of their life cycle. Riparian areas are crucial wildlife habitat because of their proximity to water. All animals need water and many species can only complete certain parts of their life cycle in water. Riparian areas provide shelter, food, and nesting opportunities. Linked networks of riparian areas provide migration corridors for wildlife.

The water quality, flood management, thermal regulation, and wildlife habitat functions are optimized by riparian areas with dense, diverse, and multi-layered vegetation which binds the soil, intercepts precipitation and sunlight, promotes sheet flow, resists erosion,

slows and spreads floodwaters, and provides food and cover for fish and wildlife. Native vegetation is adapted to local climate, soil, diseases, and pest and, therefore, well suited for riparian areas.

3.4.2. Urban Riparian Inventory and Assessment Guide

The riparian areas inside the Turner UGNA were inventoried and assessed using the *Urban Riparian Inventory and Assessment Guide* (Oregon Division of State Lands, 1998). The riparian resource inventory and assessment process included:

- Background research and producing the base map;
- Identifying and coding subwatersheds;
- Identifying and coding riparian reaches;
- Determining the riparian area width;
- Characterizing the riparian area;
- Assessing the riparian area functions; and
- Summarizing and mapping the inventory assessment results.

The purpose of the riparian inventory and assessment was to identify the location and size of the resource, characterize the resource, assess the quality of the resource, and evaluate the adequacy of the information. This process lays the groundwork for identifying significant riparian resources, conducting an ESEE analysis, and developing a management plan for significant riparian resources. An ESEE analysis identifies conflicting land uses (currently zoned land uses that may impact the resource) and evaluates the economic, social, environmental, and energy consequences of decisions to limit the conflicting use, limit the conflicting use, or fully allow the conflicting use.

A base map of water and riparian resources was prepared using the sources listed in Table 5. Additional background information about the watershed was also consulted to characterize relevant physical, biological, and cultural characteristics. This information was summarized in Section 2, Study Area Characteristics, of this report.

The project area was subdivided into subwatersheds and each water resource, and associated riparian resource, was identified and coded on the subwatershed base map. The riparian areas were subdivided and coded using the following rationale:

- Subwatershed location;
- Water resource type;
    - Watercourse in a natural swale (perennial & intermittent streams, sometimes channelized);
    - Constructed watercourse not located in a natural swale (some ditches);
    - Wetland;
    - Farm pond or reservoir;
- Left or right bank (if applicable);
- Confluence of watercourses;

- Changes in vegetation usually related to type and extent of adjacent land use; and
- Changes in landform type or topographic breaks.

Primary breaks in riparian areas along streams and ditches were based on subwatershed location: Perrin Lateral, Mill Creek South, Mill Creek Central, Mill Creek East, Mill Creek North, and Mill Creek East. Secondary reach breaks were based on changes in flow volumes at confluences with other watercourses and included:

Reach breaks

- Mill Creek between the east UGB and confluence with the Turner Bypass/Perrin Lateral Canal (MCS-1);
- Mill Creek between the Turner Bypass and confluence with the drainage basin located east of Franzen Reservoir (MCS-2);
- Mill Creek between confluence with the drainage basin located east of Franzen Reservoir (drainage divide between Mill Ck. South and Mill Ck. Central subwatersheds) and return flow from Turner Bypass (MCC-1);
- Mill Creek between the confluence with the Turner Bypass and McKinney Creek (MCC-2);
- Mill Creek between the confluence with McKinney Creek and the North Mill Creek Subwatershed Boundary (MCC-3)
- Mill Creek between the North Mill Creek Subwatershed Boundary and the north UGB (MCN-1
- Perrin Lateral Canal between the south UGB and confluence with Turner Bypass (PL-1); and
- Perrin Lateral Canal (Turner Bypass)between the diversion and return flow points with Mill Creek..

Table 13 in section 7.1 includes the complete list of coded riparian areas evaluated in this study. All watercourses (channels); including those that were channelized, located perpendicular to contour lines, or not associated with natural swales; were included in the riparian resource inventory and evaluation. Watercourse channelization, berming, armoring, bridging, culverting, and relocation was described in the riparian resource inventory and assessment. For example, the original location of the Perrin Lateral canal appears to have been a natural watercourse in a shallow swale. The channel was subsequently straightened and deepened to convey water for irrigation and industrial uses. The current location of the Perrin Lateral does not appear to have utilized a natural drainage feature, but has diverted flow from the natural waterway.

The riparian area width was established after the water resources were identified, subdivided into reaches, and coded. Width was based on the "potential tree height" in each riparian area. The potential tree is that dominant species located within 100 feet of the water resource. Where natural vegetation had been disturbed, an undisturbed area (reference reach) with similar physical characteristics was used to identify the potential tree. The dominant tree species was identified by on-site examination where access was permitted and observation from other vantage points and aerial photo interpretation where

access was not permitted. The potential tree height is the mature tree height of the dominant species and establishes the zone within which the tree can affect the water resource by shade or contribution of organic material. The riparian width determination forms are included in Appendix F.

The riparian area was characterized after the riparian width was established. Characterization was not extensive, but included information about the water resource such as water quality, flow duration, and salmonid use; soil type and potential erosion hazard; flood hazards; adjacent land use; and selected other traits. Selected other traits included such things as riparian area average slope, percent impervious surface, channel and riparian area disturbance, shading potential, and type and extent of vegetation in the riparian area. On-site observation provided the most complete and accurate information and most reaches in the study were observed in the field at one or more locations. These observations were made during on-site verification of the wetland areas and as separate filed checks. Riparian characterization forms are included in Appendix F.

Each riparian area was evaluated for its relative ability to provide four functions: (1) water quality, (2) flood management, (3) thermal regulation, and (4) wildlife habitat. A complete list of factors evaluated in the assessment are found in Appendix F. Assessment resulted in a raw score for each function which was used to rank the result as high, medium, or low. Assessment results are summarized in Appendix F.

4. Cartography

Wetlands and sample plots were mapped on color (1998, 1" = 800') and black and white aerial (1997, 1" = 100') photos laminated for field use. Wetland boundaries and sample plots were digitized and registered with the parcel base map in a Geographic Information System (GIS). The maps in the Turner LWI show approximate location, size, and boundary of wetlands, creeks, river, ditches, and ponds in the study area. The maps do not have site specific accuracy and should be used only for general planning purposes. The maps were made by transforming hand drawn lines on aerial photographs into digitized information overlain on tax lot maps.

Map uncertainty comes from many sources including the accuracy of the on- and off- site mapping, tax lot map accuracy, different map scales, and digitizing error. For on-site verification methods, the mapped wetland boundary is accurate to ±25 feet; for the off-site verification methods, the mapped wetland boundary is accurate to ±75 feet.

In densely developed urban areas where lots are small, this can translate into a significant amount of uncertainty, but this uncertainty can be resolved if and when necessary. For example, if a stream or watercourse appears to be incorrectly mapped on a parcel the land owner can request a verification of map accuracy from the Division of State Lands (DSL).

As a general rule, a field investigation of the mapped wetlands should be included in the initial stages of development planning when a project is located in or near a wetland.

Another type of potential error in the maps is the error of omission. A LWI is not required to include wetlands less that 0.5 acres, thus, not all wetlands in the study area are mapped.

The LWI process requires that all landowners with a wetland mapped on their property be notified regardless of the size of the wetland area (Figure 12). Although the LWI may not include wetlands less than 0.5 acres, landowners will be notified when a watercourse is adjacent to their lot, or when only a few square feet of wetland were located on their property.

5. Local Wetland Inventory and Assessment Results

This section describes the type, size, and location (Local Wetland Inventory) and quality (OFWAM) of wetlands located inside the Turner Urban Growth Notification Area (UGNA).

5.1. Local Wetland Inventory Results

The Local Wetland Inventory examined 1,366 acres located within the Turner UGNA. Wetlands were mapped on 136.8 acres, or 10 percent of the study area (Figure 15). A large wetland mitigation project (Wetland MCN-C), associated with a reclaimed gravel mining operation, is included in the figures listed above. If the wetland mitigation is removed from the total acreage amounts, about 51.1 acres of wetlands were mapped, about 4 percent of the study area, in the UGNA.

5.1.1. Study Area Wetland Acreages, Numbers, and Types

Excluding the large mitigation wetland (MCN-D), Table 9 shows that the most abundant type of non-linear wetland in the study area was the palustrine forested type (PFO), followed by palustrine rock bottom (PRB), palustrine forested/scrub-shrub (PFO-PSS), palustrine emergent (PEM), palustrine scrub-shrub (PSS), farmed wetland (FW), and palustrine unconsolidated bottom (PUB) wetlands. The PRB and PUB wetlands are constructed features located on upland soils. The PRB wetland is a lined, municipal water reservoir (Franzen Reservoir).

TABLE 9. DISTRIBUTION OF WETLAND AREA BY COWARDIN CLASSIFICATION

Cowardin Wetland Class and Other Types	Number of Wetland Units	Area (acres)	Length (feet)
Emergent (PEM)	7	8.7	17,399
Farmed (FW)	4	0.85	1,216
Forested (PFO)	25	22.81	-
Forested/Scrub-Shrub (PFO/PSS)	4	9.0	-
Palustrine Rock Bottom (PRB)	1	14.7	-
Lacustrine Unconsolidated Bottom (LUB)	1	76.8	-
Palustrine Unconsolidated Bottom (PUB)	1	0.9	-
Scrub-Shrub (PSS)	9	3.11	
Riverine lower perennial (R2)		-	19,399
Riverine upper perennial (R3)		-	12,308
Riverine intermittent (R4)		-	6,402
TOTAL	**52**	**136.84**	**56,723**

When the reclamation plan for the gravel mine in north Turner is completed, the created lacustrine unconsolidated wetland (LUB) will become the most common type of wetland in the UGNA. The Lake Turner mitigation project encompasses 85.7 total acres and will be composed of LUB (76.8 acres), PEM (4.16 acres), and PFO (4.74 acres) wetlands.

The length of linear wetlands in the study area is also shown in Table 9. A total of 56, 723 feet (10.7 miles) were mapped in the inventory. Linear wetlands were dominated by riverine lower perennial (R2) types, followed by palustrine emergent (PEM), riverine upper perennial (R3), riverine intermittent (R4), and farmed wetland (FW). Most of the linear wetlands were characterized and assessed in the urban riparian area inventory (Appendix F).

The palustrine forested wetland class is dominated by woody plants taller than 20 feet and water tolerant shrubs often form a second layer beneath the forest canopy, with a layer of herbaceous plants growing beneath the shrubs. Soils in these wetlands can be permanently to intermittently flooded or saturated to the surface. Palustrine forest wetlands in Turner were dominated by Oregon ash, black cottonwood *(Populus trichocarpa)*, and red alder *(Alnus rubra)* tree species. Douglas hawthorn *(Crataegus douglasii)* and Pacific willow *(Salix lasiandra)* were common secondary species. Pacific ninebark *(Physocarpus capitatus)* was the most common wetland shrub in the understory. The herbaceous layer in forested wetlands was typically limited by shaded conditions.

The palustrine scrub-shrub wetland class is dominated by shrubs and woody plants less than 20 feet tall. These wetlands are permanently to intermittently flooded or saturated to the surface. Palustrine scrub-shrub wetlands in Turner were dominated by Pacific willow,

Pacific ninebark, Douglas spirea *(Spirea douglasii)*, red-osier dogwood *(Cornus stolonifera)*, clustered rose *(Rosa pisocarpa)*, and Nootka rose *(Rosa nutkana)*.

The palustrine emergent wetland class is generally seasonally flooded and have saturated soils for much of the growing season. Vegetation is dominated by grasses, sedges, and rushes. Palustrine emergent wetlands in Turner were dominated by soft rush *(Juncus effusus)*, spreading rush *(Juncus patens)*, velvet grass *(Holcus lanatus)*, slough sedge *(Carex obnupta)*, reed canarygrass *(Phalaris arundinacea)*, common cattail *(Typha latifolia)*, and common or Leichtlin's camas *(Camassia leichtlinii or quamash)*.

Vegetation in Turner's palustrine forested/scrub shrub wetlands combines the plants listed above. A complete list of plants observed in Turner during the wetland and riparian area inventory is found in Appendix G.

Most of the wetlands were located on 10YR 3/1 silty gravelly clay loams which strongly resembled the description of the mapped soil type, Courtney gravelly silty clay loam. Wetland hydrology was typically a combination of seasonal flooding and high seasonal water tables. Water depths of 4 to 5 feet were noted in some of the flooded wetlands but the more common situation was saturation to the surface or shallow inundation of less than 1 foot.

5.1.2. Subwatershed Distribution of Wetlands

The distribution of wetland types and acreages by study area subwatersheds is summarized in Table 10 and illustrated in Figure 14 as wetland density. Wetland density was determined for linear and non-linear wetlands (Table 9). Non-linear wetland density is acres of wetland compared to the acreage of the subwatershed. Linear wetland density is the feet of linear wetland compared to the subwatershed acreage.

Total wetland acreage (non-linear) in each subwatershed, ranked by abundance, was:

- Mill Creek North- 90.8 acres;
- Perrin Lateral- 21.5 acres;
- Mill Creek Central-16.5 acres;
- Mill Creek South- 8.1 aces; and
- Mill Creek East- 0 acres.

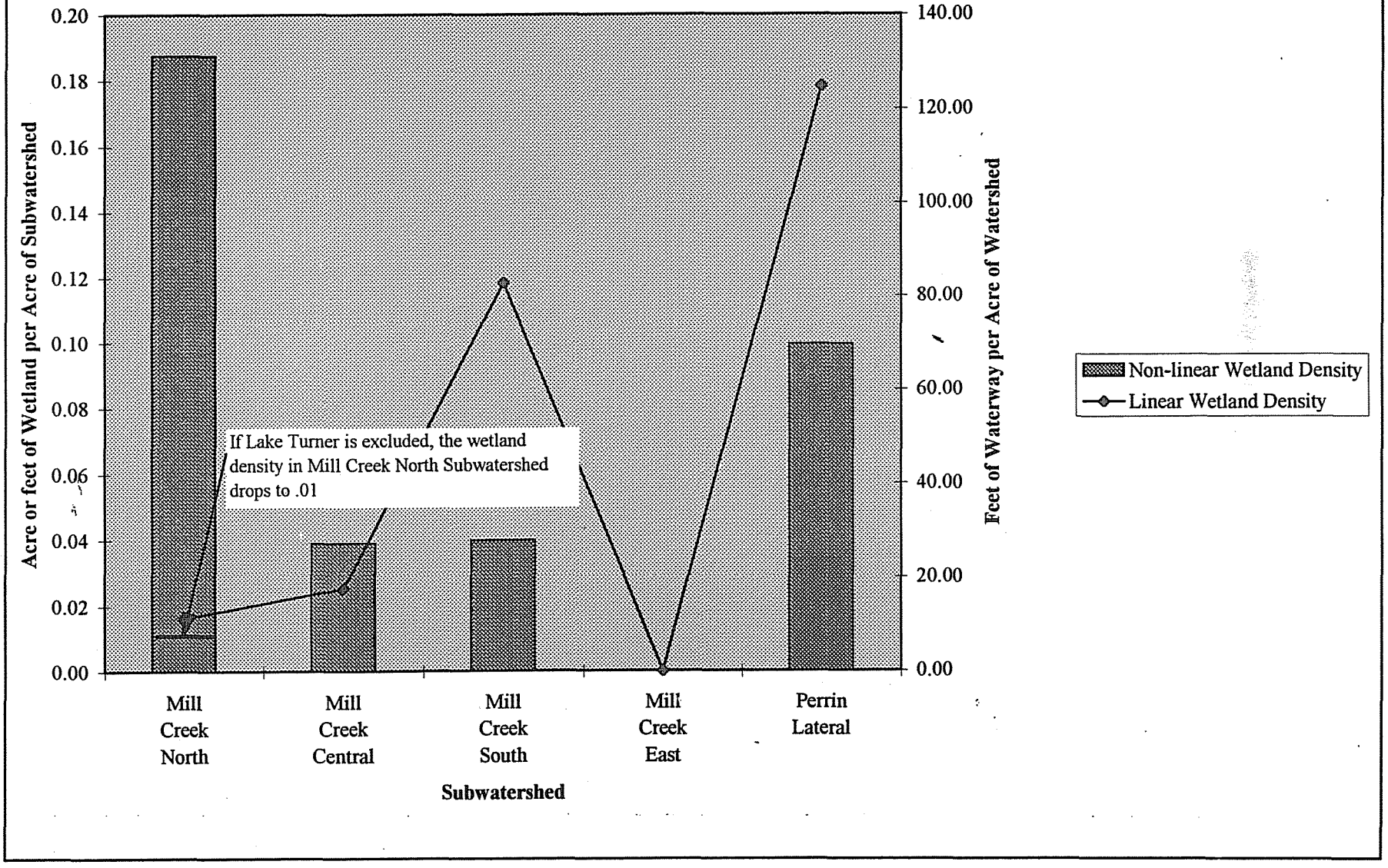
Removing the wetland mitigation acreage from the Mill Creek North subwatershed reduces the total wetland acreage to 5.1 acres and drops the watershed to 4th in terms of wetland abundance.

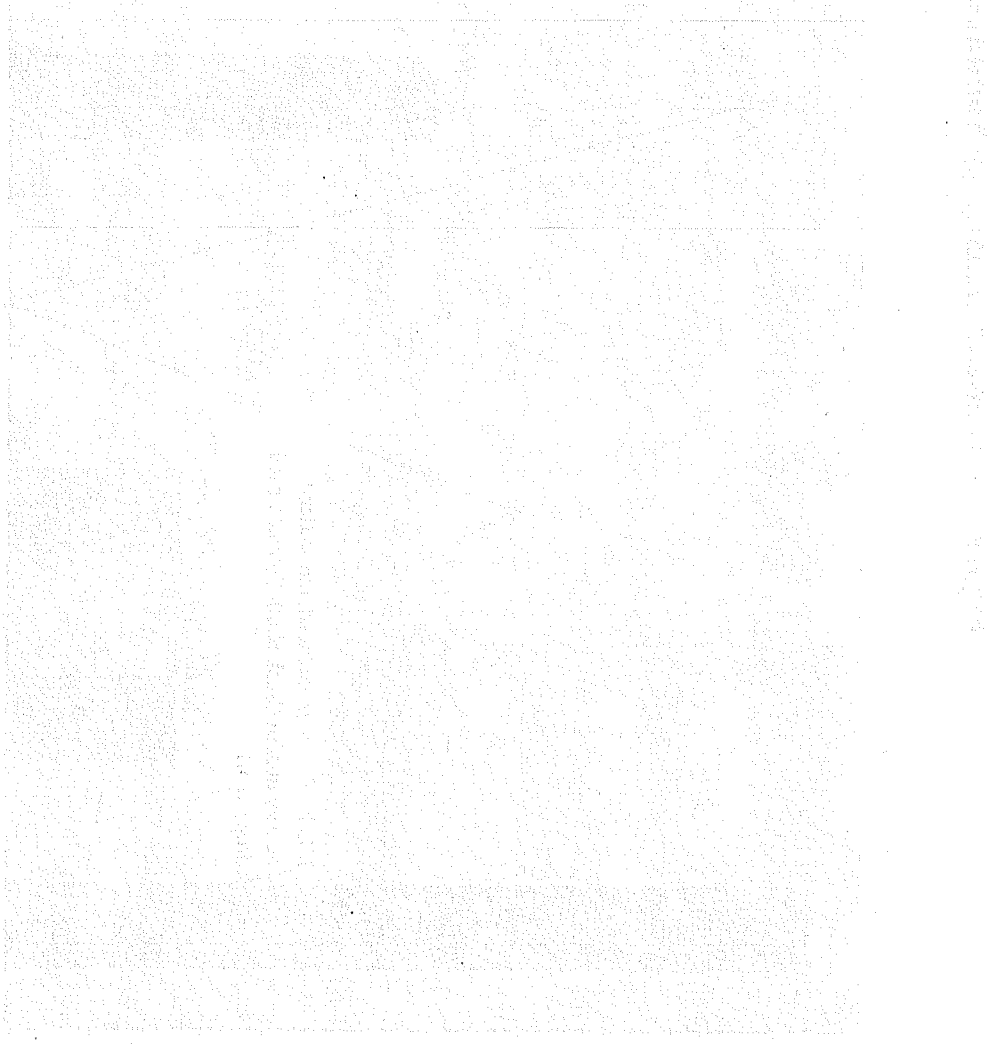
Figure 14 depicts linear and non-linear wetland abundance normalized to watershed area. If future Lake Turner is excluded from the analysis, the Perrin Lateral subwatershed had the most acres and feet of wetlands per subwatershed acre. Mill Creek South and Central watersheds had similar non-linear wetland densities, but Mill Creek South had more feet of linear wetland per unit area of watershed.

TABLE 10. SUBWATERSHED WETLAND DISTRIBUTION BY TYPE & SIZE

Wetland ID	Wetland Type(s)	Size
	Perrin Lateral (PL)	
PL-A	R2	3,882 feet
PL-B	PFO	1.09 acres
PL-C	PFO/PSS	0.54 acres
PL-D	FW PF0 R3 R4	0.85 acres and 1,216 ft. 0.89 acres 7,056 feet 227 feet
PL-E	PEM PFO	5,797 feet 2.45 acres
PL-F	R4 PEM PFO PSS PPF/PSS	2,899 feet 2.5 acres 3.58 acres 1.6 acres 8.0 acres
PL-G	R3	5,252 feet
PL-H	PEM	613
Subwatershed Total		**21.5 acres 26,942 feet**
	South Mill Creek (MS)	
MCS-A	R2	5,848 feet
MCS-B	PFO	0.2 acres
MCS-C	PFO	2.51 acres
MCS-D	PFO	4.04 acres
MCS-E	PEM	10,988 feet
MCS-F	PFO	1.34 acres
Subwatershed Total		**8.1 acres 16,836 feet**
	Central Mill Creek (MC)	
MCC-A	R2	6,604 feet
MCC-B	PFO PFO/PSS R4	0.44 acres 0.49 acres 131 feet
MCC-C	PRB	14.66 acres
MCC-D	PUB	0.9 acres
MCC-E	R4	707 feet
Subwatershed Total		**16.5 acres 7,442 feet**
	North Mill Creek (MCN)	
MCN-A	R2	3,064 feet
MCN-B	PSS PFO	0.23 acres 1.53 acres
MCN-C	WM, "Lake Turner", composed of LUB PEM PFO	 76.8 acres 4.16 acres 4.74 acres
MCN-D	PSS PEM R4	1.9 acres 2.01 acres 2,438 feet
MCN-E	PSS	0.2 acres
Subwatershed Total		**90.8 acres 5,502 feet**

Figure 14. Wetland Density by Subwatershed





5.2. *Oregon Freshwater Wetland Assessment Methodology Results*

5.2.1. Wetlands of Special Interest for Protection

Riverine wetlands (R2) in Mill Creek (MCN-A, MCC-A, and MCS-A) have been identified as essential habitat for indigenous, anadromous salmonids. It is very likely that Turner Bypass (PL-A) would be mapped as essential habitat due to the free and open connections to Mill Creek. The Perrin Lateral Canal (PL-G) may also provide salmon habitat due to its open connection to Mill Creek/Turner Bypass and perennial water supply. Winter steelhead and spring chinook are known to use Mill Creek and both these species were listed as threatened with extinction by the National Marine Fisheries Service in 1999.

5.2.2. Wetland Quality Assessment

The OFWAM assessment results for each wetland, grouped by subwatershed, are summarized in Table 11. Appendix C has the answers to the individual questions for each ecological and social function, and condition assessment for each non-linear wetland in the study. The OFWAM summary results shown in Figure 16 are based on acreage data shown in the last three rows of Table 11 and do not include assessment results for future Lake Turner (Wetland MCN-C).

The assessment showed that most wetlands in Turner provide relatively high ecological function for three of the four functions. These functions were wildlife habitat, water quality, and hydrologic control. Diverse wildlife habitat was provided by 49 percent, and some wildlife habitat was provided by 22 percent, of the wetland area in the Turner. This ecological function, as well as all others, was judged not applicable to Wetland MCC-C (Franzen Reservoir).

The summary of the fish habitat assessment showed that 6 percent of the wetland areas provide intact function (Wetlands MCN-B, MCN-E, and MCC-B), and 8 percent of the wetland area had impacted function. This ecological function was judged not applicable to 86 percent of the wetlands because of no surface water connection, or proximity to, surface water.

The summary of the water quality assessment showed that 49 percent of the wetland areas provide intact function and 22 percent of the wetland area had impacted function. The summary of the hydrologic control assessment showed that 57 percent of the wetland areas provide intact function and 14 percent of the wetland area had impacted function.

With respect to assessment results for sensitivity to impact, 11 percent of the wetland area was sensitive (Wetlands MCS-D and MCS-F) and 61 percent was potentially sensitive, to impacts. Enhancement potential assessment was not applicable to 78 percent of the wetlands because they had intact ecological function. About 8 percent of the wetland area had high enhancement potential (Wetlands MCN-D and MCC-D).

TABLE 11. OFWAM ASSESSMENT RESULTS FOR EACH WETLAND

Ecological Functions					Wetland Conditions		Social Functions		
Wetland ID	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Sensitivity to Impact	Enhancement Potential	Education	Recreation	Aesthetic Quality
MCN-B	Diverse	Intact	Intact	Intact	Potentially sensitive	NA	Not appropriate	Provides opportunities	Moderately pleasing
MCN-C	Diverse	Impacted	Impacted	Intact	Potentially sensitive	High	Not appropriate	Has potential	Pleasing
MCN-D	Provides some	Impacted	Impacted	Impacted	Potentially sensitive	High	Not appropriate	Not appropriate	Moderately pleasing
MCN-E	Diverse	Intact	Intact	Intact	Potentially sensitive	NA	Has uses	Provides opportunities	Pleasing
MCC-B	Diverse	Intact	Intact	Intact	Potentially sensitive	NA	Has potential	Provides opportunities	Pleasing
MCC-C	NA	NA	NA	NA	NA	NA	NA	NA	NA
MCC-D	Provides some	Impacted	Impacted	Impacted	Potentially sensitive	High	Not appropriate	Provides opportunities	Not pleasing
MCS-B	Provides some	Impacted	Impacted	Intact	Potentially sensitive	Moderate	Has uses	Has potential	Moderately pleasing
MCS-C	Diverse	NA	Intact	Intact	Potentially sensitive	NA	Has uses	Provides opportunities	Pleasing
MCS-D	Provides some	NA	Impacted	Intact	Sensitive	Moderate	Has uses	Provides opportunities	Moderately pleasing
MCS-F	Provides some	NA	Impacted	Impacted	Sensitive	Moderate	Has potential	Has potential	Pleasing

Table 11 Continued

Ecological Functions					Wetland Conditions		Social Functions		
Wetland ID	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Sensitivity to Impact	Enhancement Potential	Education	Recreation	Aesthetic Quality
PL-B	Diverse	NA	Intact	Intact	Potentially sensitive	NA	Has potential	Provides opportunities	Pleasing
PL-C	Diverse	NA	Intact	Intact	Potentially sensitive	NA	Has potential	Provides opportunities	Pleasing
PL-D	Provides some	NA	Impacted	Impacted	Potentially sensitive	Moderate	Has potential	Has potential	Moderately pleasing
PL-E	Diverse	NA	Intact	Intact	Potentially sensitive	NA	Has potential	Not appropriate	Moderately pleasing
PL-F	Diverse	NA	Intact	Intact	Potentially sensitive	NA	Has potential	Provides opportunities	Pleasing
	49% Diverse	6% Intact	49% Intact	57% Intact	11% Sensitive	8% High	14% Have uses	54% Provides opportunities	44% Pleasing
	22% Provides Some	8% Impacted	22% Impacted	14% Impacted	61% potentially sensitive	14% Medium	46% Have potential uses	6% Have potential uses	26% Moderately pleasing
	0% Lost or not present	0% Lost or not present	0% Lost or not present	0% Lost or not present	0% Not sensitive	0% Little	11% Not appropriate	11% Not appropriate	2% Not pleasing
	29% NA	86% NA	29% NA	29% NA	29% NA	78% NA	29% NA	29% NA	29% NA

The assessment of social functions resulted in high or moderate results for most wetlands in the study area. Most uses were passive and off-site types because public access to most wetlands is restricted or limited. Educational function for wetland area was assessed as having uses in 14 percent (Wetlands MCN-E, MCS-B, MCS-C, MCS-D) had potential uses in 46 percent, was not an appropriate use in 11 percent (Wetlands MCN-B, MCN-D, and MCC-D). Recreational use function was provided in 54 percent, had potential in 6 percent, and not appropriate in 11 percent (Wetlands MCN-D and PL-E) of the wetland area. Recreational use was mainly passive off-site observation via non-motorized boating on Mill Creek or observation from city roads. The aesthetic quality of 44 percent of the wetlands was pleasing, followed by 26 percent moderately pleasing, and 2 percent not pleasing (Wetland MCC-C). Future Lake Turner (MCN-C) has the potential to provide high social functions depending on the adjacent land use and development design.

Wetlands in the Perrin Lateral subwatershed had the highest assessment results for most ecological functions and had high assessment results for off-site recreational opportunities and aesthetics. Wetland MCS-C had highest assessment results for ecological and social functions when compared to other wetlands in the study. This wetland is located on church facilities in southeast Turner and many people were observed walking on a path through the wetland.

Figure 16. Summary of OFWAM Results

The assessment of social functions resulted in high or moderate results for most wetlands in the study area. Most uses were passive and off-site types because public access to most wetlands is restricted or limited. Educational function for wetland area was assessed as having uses in 14 percent (Wetlands MCN-E, MCS-B, MCS-C, MCS-D) had potential uses in 46 percent, was not an appropriate use in 11 percent (Wetlands MCN-B, MCN-D, and MCC-D). Recreational use function was provided in 54 percent, had potential in 6 percent, and not appropriate in 11 percent (Wetlands MCN-D and PL-E) of the wetland area. Recreational use was mainly passive off-site observation via non-motorized boating on Mill Creek or observation from city roads. The aesthetic quality of 44 percent of the wetlands was pleasing, followed by 26 percent moderately pleasing, and 2 percent not pleasing (Wetland MCC-C). Future Lake Turner (MCN-C) has the potential to provide high social functions depending on the adjacent land use and development design.

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Wetlands in the Perrin Lateral subwatershed had the highest assessment results for most ecological functions and had high assessment results for off-site recreational opportunities and aesthetics. Wetland MCS-C had highest assessment results for ecological and social functions when compared to other wetlands in the study. This wetland is located on church facilities in southeast Turner and many people were observed walking on a path through the wetland.

Figure 16. Summary of OFWAM Results

6. Significant Wetlands Determination

6.1. Locally Significant Wetlands Criteria

The purpose of the locally significant wetland criteria is to establish standardized criteria and procedures to identify significant wetlands under Statewide Planning Goal 5, which is to protect natural resources and conserve scenic and historic areas and open space. The criteria for locally significant wetlands rely substantially on the results of the OFWAM assessment, and other information, to identify locally significant wetland resources. The criteria and process are set out in OAR 141-86-300 to 141-86-350. Each wetland in the study area, except linear wetlands, was screened using the criteria to identify "significance" and the results are contained in Appendix C.

6.2. Applying Significant Wetland Criteria to the LWI Study Area

6.2.1. Locally Significant Wetlands

TABLE 12. LOCALLY SIGNIFICANT WETLANDS IN TURNER

Wetland Identifier	Wetland Type	Rationale
MCN-B	PFO and PSS	Diverse wildlife habitat and intact fish habitat, water quality and hydrologic control ecological functions.
MCN-C	WM future Lake Turner	Diverse wildlife habitat and intact hydrologic control ecological functions.
MCN-E	PSS	Diverse wildlife habitat and intact fish habitat, water quality and hydrologic control ecological functions.
MCC-B	PFO, PFO/PSS	Diverse wildlife habitat and intact fish habitat, water quality and hydrologic control ecological functions.
MCS-B	PFO	Intact hydrologic control ecological function.
MCS-C	PFO	Diverse wildlife habitat and intact water quality and hydrologic control ecological functions.
MCS-D	PFO	Intact hydrologic control ecological functions.
PL-B	PFO	Diverse wildlife habitat and intact water quality and hydrologic control ecological functions.
PL-C	PFO/PSS	Diverse wildlife habitat and intact water quality and hydrologic control ecological functions.
PL-E	PEM and PFO	Diverse wildlife habitat and intact water quality and hydrologic control ecological functions.
PL-F	PEM, PFO, PSS, and PFO/PSS	Diverse wildlife habitat and intact water quality and hydrologic control ecological functions.
Total Acres of Locally Significant Wetlands: 29.4*		
Percent of Total Wetland Acreage that is a significant wetland resource: 57*		

* If future Lake Turner (MCN-C) is included, then the total acres of locally significant wetlands is 115.1 and the percentage of locally significant wetlands increases to 84 percent.

Table 12 summarizes the results of the locally significant wetland screening process and shows that 11 wetlands in the study area met the criteria. Significant wetlands were also mapped on Figure 19. Table 11 also includes the rationale for the finding of local "significance". About 57 percent (29.4 acres) of the wetlands in the study area are locally significant wetland resources. Each subwatershed had a locally significant wetland, but most are located into the Perrin Lateral and Mill Creek North Subwatersheds.

The Goal 5 process begins with resource inventories and ends with programs to conserve significant resources located inside the UGB. The LWI provides information about the location, type, and quantity of the wetland resource type within the UGNA and the OFWAM assessment results determine the quality of the wetland resource. The Locally Significant Wetland Criteria identify which of the wetland resources are significant. The remaining steps in the Goal 5 process are to:

- Identify uses that conflict with the significant resource;
- Evaluate the economic, social, environmental, and energy consequences of resource protection and conflicting uses; and
- Develop and implement a program that manages significant resources.

The program can apply any of the following options to manage significant resources:

- Fully protect the resource by prohibiting all conflicting uses;
- Partially protect the resource by allowing some conflicting uses; or
- Do not protect the resource by allowing all conflicting uses.

7. Urban Riparian Inventory Results

7.1.1. Water and Riparian Resources

Most water resources in Turner were perennial and intermittent streams. As mentioned previously, ditches were shown as water resources and the riparian area was examined because these constructed features were often located within natural features or have intercepted and replaced the natural waterways. Two constructed ponds were located in the city. A very large constructed pond, future Lake Turner, will be located inside the city when the reclamation plan for the gravel mining operation is completed. Table 13 describes the riparian areas identified and examined in this inventory and Figure 16 shows their mapped location.

TABLE 13. CLASSIFYING AND CODING RIPARIAN AREAS

Riparian Code	Location
	Mill Creek South Subwatershed (MCS)
MCS-1 R	Mill Ck. between Marion Rd. Bridge and confluence with Turner Bypass
MCS-2.1 R	Mill Ck. between confluence with Turner Bypass and Marion Rd. Bridge near Turner School.
MCS-2.2 R	Mill Ck. between Marion Rd. Bridge and forested footslope
MCS-2.2A R&L	Unnamed intermittent stream in swale
MCS-2.2B R&L	Constructed ditch on north side of Marion Rd. and west side of Witzel Rd.
MCS-2.2C R&L	Constructed ditch on south and west side of Marion Rd.
MCS-2.3 R	Mill Ck. between forested footslope and subwatershed boundary (MCS/MCC)
MCS-1 L	Mill Creek between Turner Bypass and MCS/MCC subwatershed boundary
	Mill Creek Central Subwatershed (MCC)
MCC-1.1 R	Mill Ck. between MCS/MCC subwatershed boundary and open, flat area south of Cedar Ln.
MCC-1.1A R&L	Unnamed intermittent stream receiving discharge from Franzen Reservoir and flowing into Mill Creek
MCC-1.1B	Constructed municipal reservoir (Franzen Reservoir)
MCC-1.1C	Constructed farm pond, spring fed
MCC-1.2 R	Mill Ck. between Cedar Ln. and confluence with Turner Bypass
MCC-2 R	Mill Ck. between Turner Bypass and McKinney Ck.
MCC-3.1 R	Mill Ck. between McKinney Creek and 600 feet north of Delaney Rd. Bridge
MCC-3.2 R	Mill Ck. between 600 feet north of Delaney Rd Bridge and MCC/MCN subwatershed boundary
MCC-1 L	Mill Creek between MCS/MCC boundary and confluence with Turner Bypass
	Mill Creek North Subwatershed (MCN)
MCN-1.1 R	Mill Ck. between MCC/MCN subwatershed boundary and north end of Turner City Park
MCN-1.2 R	Mill Ck. between north end of Turner City Park and railroad bridge
MCN-1.2A	Constructed pond in reclaimed gravel mine to be called Lake Turner
MCN-1.2B R&L	Unnamed intermittent stream, flowing into future Lake Turner, between the lake and the break in slope at the foothills
MCN-1.2C R&L	Unnamed intermittent stream, flowing into future Lake Turner between the headwaters and the break in slope at the base of the foothills.
	Perrin Lateral Subwatershed (PL)
PL-1 R&L	Right and left banks of constructed canal (Perrin Lateral) between study area south boundary and confluence with Turner Bypass. Located immediately west of 55th Ave.
PL-2 R&L	Right and left banks of Turner Bypass (channelized stream) between Mill Creek and Wipper Rd. Bridge.
PL-2A R&L	Right and left banks of channelized intermittent stream, former location of Perrin Lateral Canal. Located between 55th Ave. and Railroad.
PL-2B R&L	Right and left banks of constructed ditch east of railroad
PL-2C R&L	Right and left banks of constructed ditch east of Wipper Rd.

7.2. Riparian Area Distribution

About 78,360 feet (14.8 miles) of riparian area was located within the study area. This figure included the left and right banks of the water area when both riparian areas were located within the Turner UGNA (Figure 17) . The riparian area length was 73,644 (13.9 miles) if future Lake Turner is excluded from calculations. Riparian area width, based on site potential tree height varied from 60 to 120 feet (Table 13). Thus, the total riparian area acreage ranged from a minimum of 108 acres to a maximum of 216 acres, or 8 percent and 16 percent of the total study area, respectively. Soils in the study area which were located in depressions, overflow channels, and drainages (riparian area landforms) were Courtney and Wapato. These soils comprised about 213 acres, or 16 percent of the study area which is comparable to the size of the riparian area based on a width of 120 feet.

The total riparian area length for the study area was 78,360 feet. Subwatershed lengths, listed from high to low, were: Perrin Lateral- 26,365 feet (34 percent of total); Mill Creek South- 19,864 (25 percent of total); Mill Creek North- 16,487 feet (21 percent of total); Mill Creek Central- 15, 642 feet (20 percent of total), and Mill Creek East- 0 feet. Riparian area density, the length of the riparian corridor divided by the area, was:

- Perrin Lateral- 122 feet/acre;
- Mill Creek South- 98 feet/acre;
- Mill Creek North- 37 feet/acre;
- Mill Creek Central- 34 feet/acre;

Riparian area density for the entire study area was 57 feet/acre and density for the Mill Creek East Subwatershed was zero.

Most of the riparian area in Turner had been disturbed by building footprints, landscaping, farming, or roadways. In undisturbed areas, typical riparian vegetation was a forest over a shrub layer with a sparse groundcover. In the flat, low-lying areas the forest was dominated by Oregon ash, red alder, Pacific willow, and black cottonwood adjacent to the channel; and Oregon white oak in the drier areas. Shrubs included Pacific ninebark, cascara *(Rhamnus purshiana)*, red-osier dogwood, snowberry, beaked hazelnut *(Corylus cornuta)*, Douglas hawthorn, service berry *(Amelanchier alnifolia)*, clustered rose) and Nootka rose. Riparian areas in hilly areas were less common and dominated by a forest composed of Douglas-fir, bigleaf maple, and Oregon white oak. Common shrub species were vine maple *(Acer circinatum)*, beaked hazelnut, and holly *(Ilex aquifolium)*. Himalayan blackberry *(Rubus discolor)* was a common shrub on disturbed sites. Appendix F contains a description of each riparian area which includes a detailed list of plants.

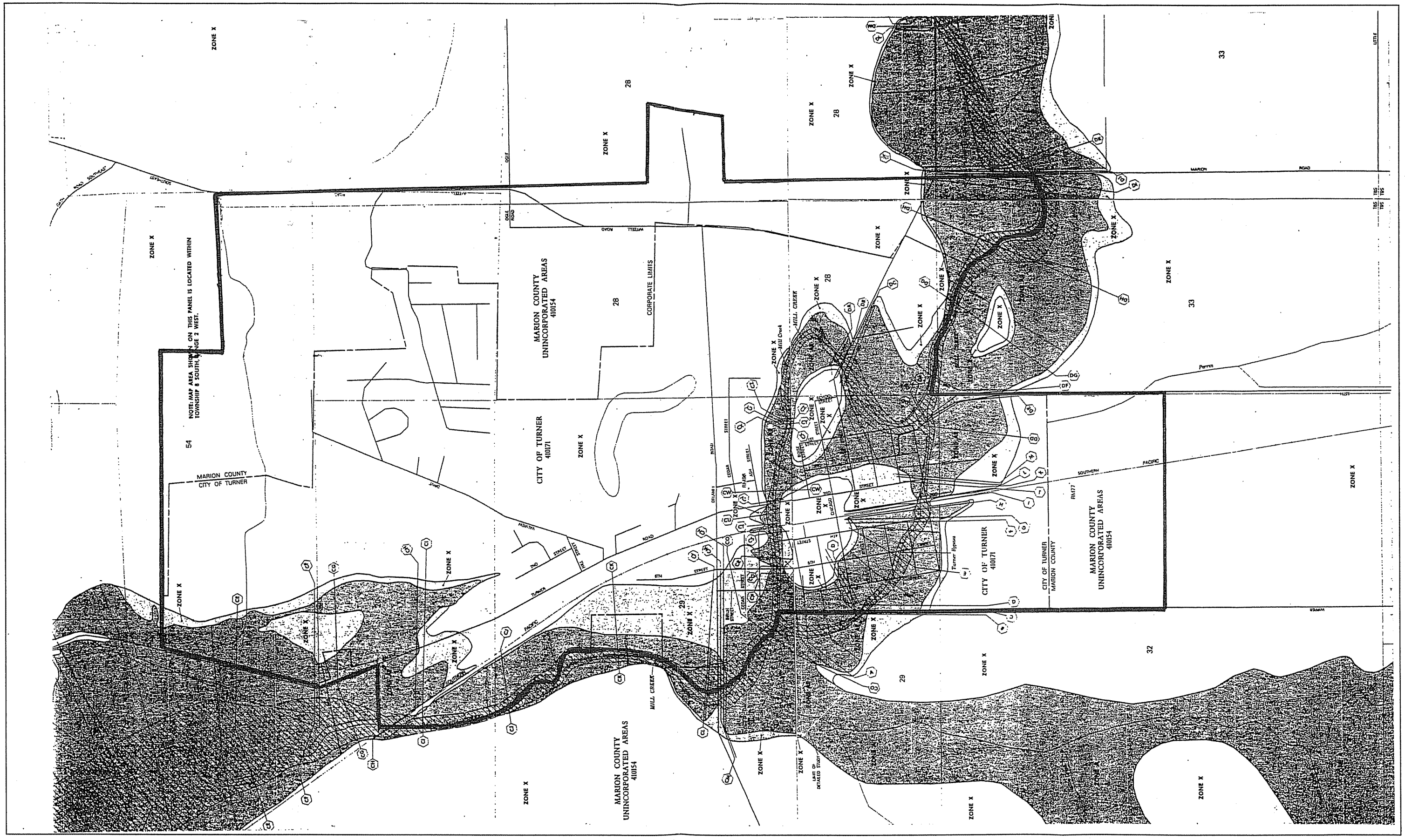
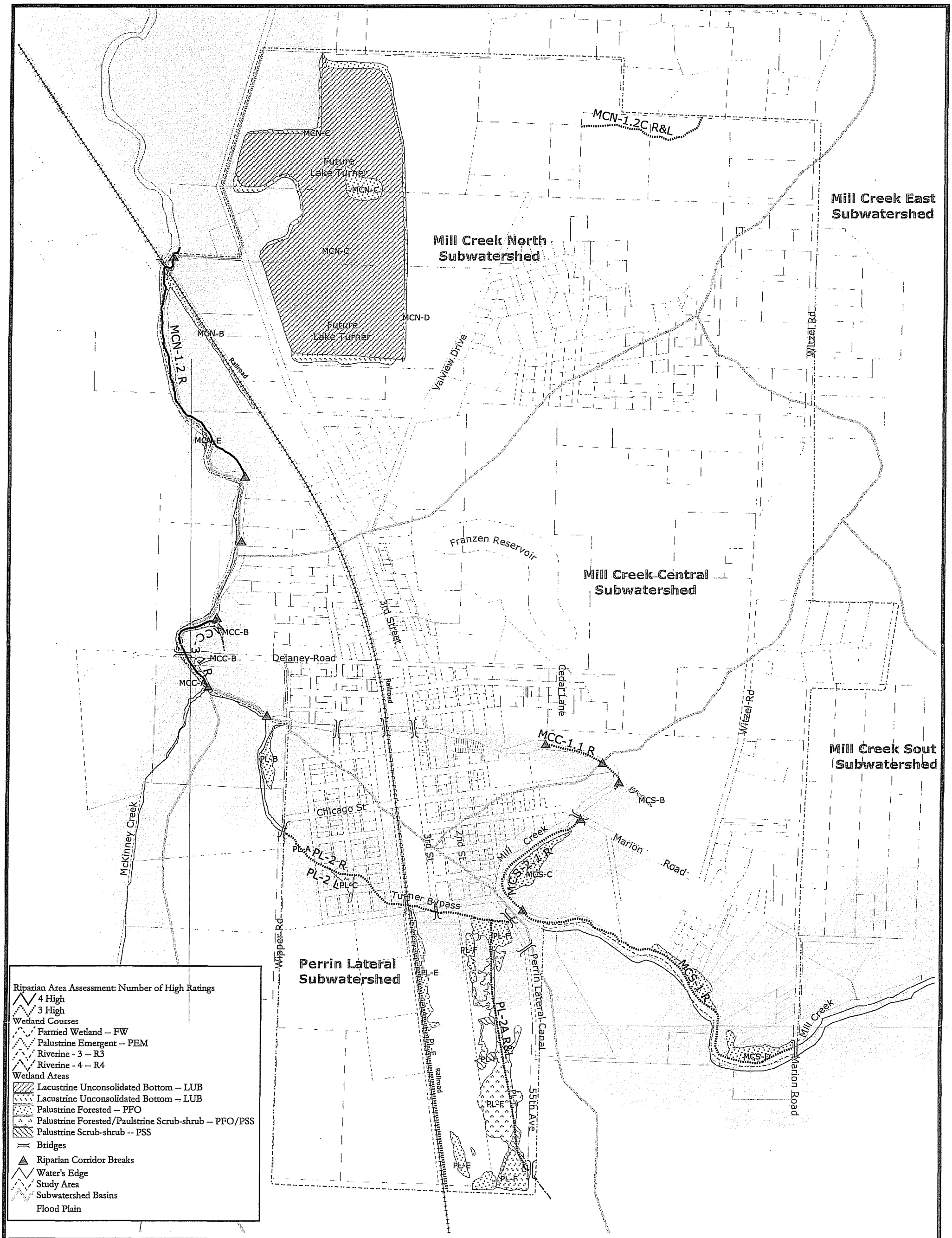


Figure 11. Turner Flood Insurance Rate Map



Title: Figure 19. Turner Locally Significant Wetland and High Value Riparian Area Map

Prepared by:
Mid-Willamette Valley Council of Governments

Created by:	Date:	Revision:
AJW	February 29, 2000	2

Filename:
R:/common/naturalres/wetlands/turn_lwi/maps.apr

Figure 17. Turner Locally Significant Wetland and High Value Riparian Area Map 11x17--Rev: 2

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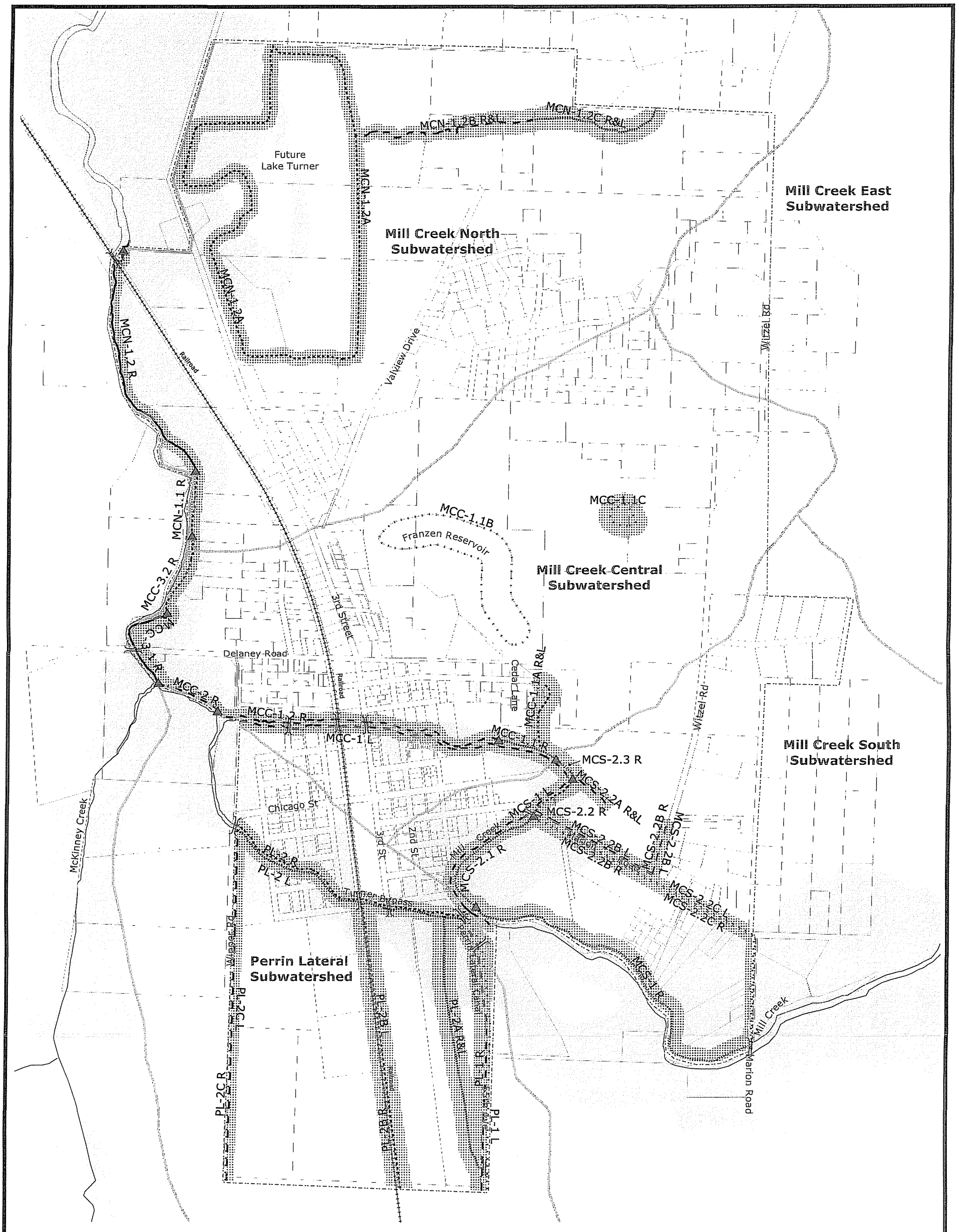
This map is for illustrative purposes only and is to be used for planning purposes.



Title:	Figure 17. Riparian Inventory Results Map	
Prepared by:	Mid-Willamette Valley Council of Governments	
Created by: AJW	Date: February 25, 2000	Revision: 2
Filename:	r:/common/naturalres/wetlands/turn_lwi/maps.apr	
Riparian Inventory Map 11x17 Portrait--Rev: 2		

Bridges
Riparian Corridor Breaks
Riparian Area Assessment: Number of High Ratings
4 High
3 High
2 High
1 High
0 High
Water's Edge
Study Area
Subwatershed Basins
Riparian Buffer Area
Flood Plain

300 0 300 600 Feet

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This map is for illustrative purposes only and is to be used for planning purposes.

TABLE 14. SUMMARY OF RIPARIAN FUNCTION ASSESSMENT

Riparian Code	Reach Length (feet)	Riparian Area Width (feet)	Water Quality	Flood Management	Thermal Regulation	Wildlife Habitat
MCC-1 L	3,251	60 - 75	Medium	Medium	High	Medium
MCC-1.1 A R & L	707	90 - 120	High	Medium	Medium	High
MCC-1.1 R	615	90 - 120	High	Medium	High	High
MCC-1.1B [1]	4,715	---	---	---	---	---
MCC-1.1C	746	60 - 120	Medium	Low	Medium	Low
MCC-1.2 R	2,993	60 - 75	Medium	Medium	High	Medium
MCC-2 R	667	60 - 75	Medium	Medium	High	Medium
MCC-3.1 R	1,089	60 - 75	High	High	High	High
MCC-3.2 R	858	60 - 75	High	Medium	Medium	High
MCN-1.1 R	664	60 - 75	High	Medium	Medium	High
MCN-1.2 R	2,782	60 - 75	High	High	High	High
MCN-1.2A [2]	9,677	60-75	High	Medium	Medium	High
MCN-1.2B R&L	1,992	60 - 75	High	Medium	Medium	Medium
MCN-1.2C R&L	1,374	60 - 120	High	Medium	High	High
MCS-1 R	3,647	75 - 120	High	Medium	High	High
MCS-1L	2,518	60-75	Medium	Medium	High	Medium
MCS-2.1 R	1,417	60 - 75	High	Medium	High	High
MCS-2.2 R	477	60 - 75	High	Medium	High	Medium
MCS-2.2A R &L	438	65 - 75	Medium	Medium	High	Medium
MCS-2.2B L	1,830	60 - 75	Medium	Medium	Medium	Low
MCS-2.2B R	1,825	60 - 75	High	Medium	Medium	Low
MCS-2.2C L	3,656	65 - 75	Medium	Medium	Medium	Low
MCS-2.2C R	3,695	65 - 75	Medium	Medium	Medium	Low
MCS-2.3 R	361	90 - 120	High	Medium	High	High
PL-1 L	2,789	75 - 120	High	Medium	Low	Medium
PL-1 R	2,767	75 - 120	Medium	Medium	Low	Low
PL-2 L	2,679	60 - 75	High	Medium	High	High
PL-2 R	2,672	60 - 75	High	Medium	High	Medium
PL-2A R & L	2,604	75 - 120	High	Medium	High	High
PL-2B L	2,890	75-120	Medium	Low	Low	Low
PL-2B R	2,907	75-120	High	Medium	Low	High
PL-2C L	3,529	75 - 120	Medium	Medium	Low	Low
PL-2C R	3,527	75 - 120	High	Medium	Low	Low
TOTAL	**78,360**	**# of high reaches**	**20**	**2**	**16**	**14**
	14.8 mi	**# of medium reaches**	**12**	**28**	**10**	**9**
		# of low reaches	**0**	**2**	**6**	**9**

1 Not assessed because this is a constructed municipal water reservoir that is mainly isolated from the surface water system. The city of Salem plans to reline the bottom and sides, and place a floating cover on the reservoir.

2. Assessment is an estimate based on the approved reclamation plan for the mining operation. Plan includes a forested area around the reservoir.

7.3. Riparian Area Assessment Results

Assessment results are discussed in detail by function for the entire study area. Assessment results are shown graphically in Figure 18 as the percentage of the total riparian corridor length with high, medium, and low ratings for each function. More general discussions of assessment results are given for each subwatershed and those reaches with high assessment for all functions are identified. Appendix F contains the function assessment results for each riparian area.

7.3.1. Water Quality

The assessment results for water quality for the total riparian area were:

- 61 percent high, and
- 39 percent medium(Figure 18).

Most of the riparian area was located on slopes less than 10 percent, was dominated by herbaceous or woody vegetation less than 1 meter high, had woody vegetation greater than 1 meter high along the top of the bank, had less than 10 percent impervious surface, and was underlain by soils with low, slight or moderate water erosion hazard. The Mill Creek North Subwatershed had high water quality function in all the riparian areas and the other subwatersheds were split about evenly between high and medium function (Table 14).

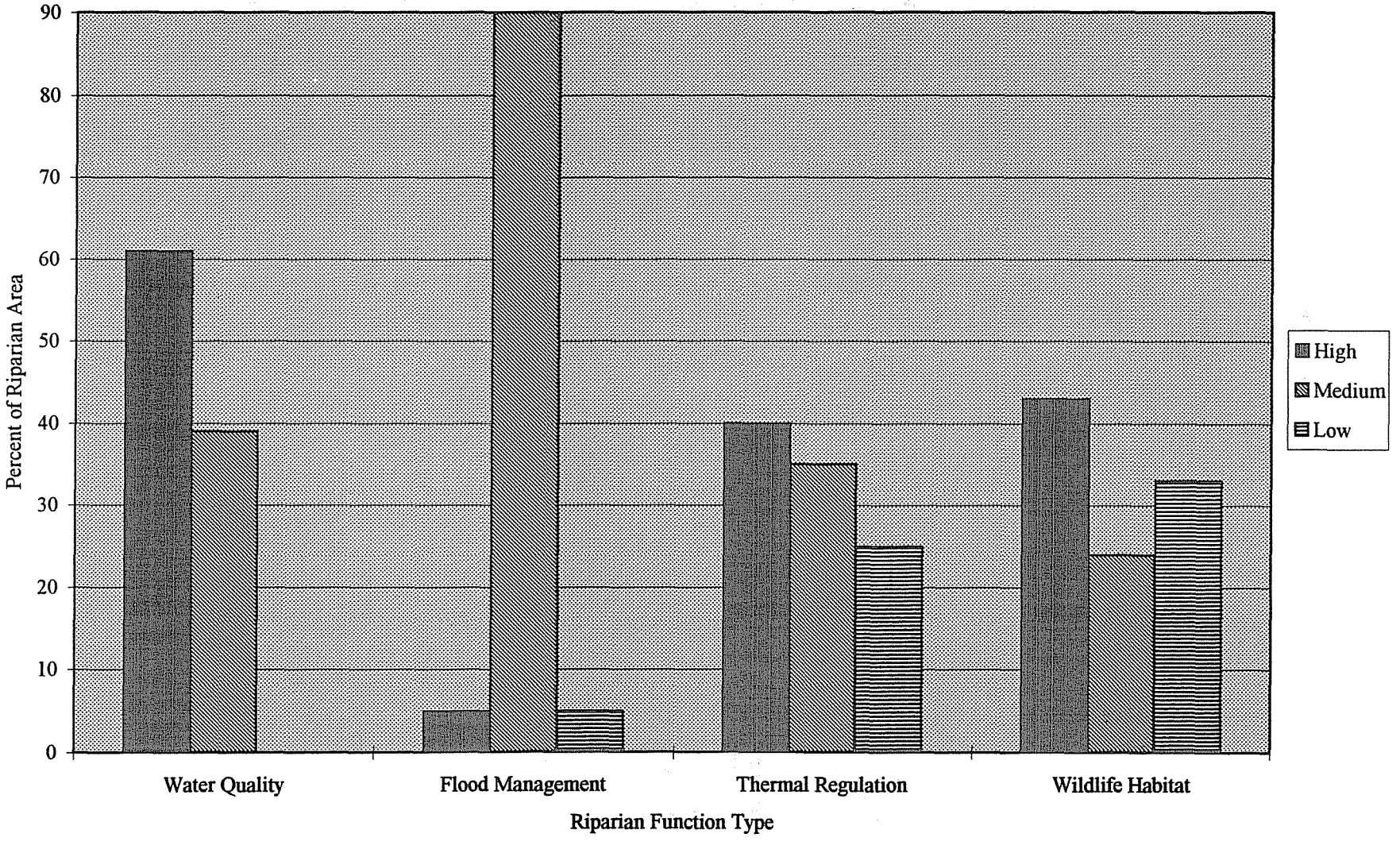
7.3.2. Flood Management

The assessment results for flood management for the total riparian area were:

- 5 percent high,
- 90 percent medium, and
- 5 percent low function.

Most of the riparian area was bordered by flat areas, depressions, swales, or 100-year floodplains and floodways; the flood-prone area was not dominated by woody vegetation higher than one meter, and the water resource was constricted by man-made features such as channelization and rip rap. Flood management function assessment results in the subwatersheds were similar to the overall results (Table 14).

Figure 18. Summary of Riparian Function Assessment Results



7.3.3. Thermal Regulation

The assessment results for thermal regulation for the total riparian area were:

- 40 percent high,
- 35 percent medium, and
- 25 percent low function (Figure 18).

The aspect or orientation of the riparian area allowed for shading of the water at midday in the summer in about half of the study area. It should also be noted that where aspect or orientation of the riparian was north-south, the narrow width of the waterways could easily be shaded by the site potential tree species identified for Turner: red alder, Oregon ash, and black cottonwood. The riparian area was dominated by vegetation less than one meter high, and about half the riparian area had vegetation hanging over the water's edge.

All subwatersheds except the Perrin Lateral had a mix of high and medium assessment results for thermal regulation (Figure 18). The Perrin Lateral Subwatershed had a mix of high and low assessment results because the watercourses were located along roads and farmed fields (Table 14). Pavement or crops dominated the riparian areas and eliminated all sources of shade. Water courses in this subwatershed also tended to run north-south which exacerbates the lack of shading provided by vegetation. The thermal assessment results for the Mill Creek North Subwatershed were mixed between high and medium. However, the topographic shading of the adjacent Salem Hills should partially compensate for the orientation because the slope is steep and immediately adjacent to the left bank of Mill Creek in most of the subwatershed.

7.3.4. Wildlife Habitat

The assessment results for wildlife habitat for the total riparian area were:

- 43 percent high,
- 24 percent medium, and
- 33 percent low function (Figure 18).

Vegetation layers in the riparian area were mixed between more than 2 layers, 2 layers, and 1 layer or unvegetated. The dominant vegetation in the riparian area was wood vegetation less than one meter high. Over half the riparian areas have some woody debris and vegetation that hangs over the water's edge. Most of the water courses contain water throughout the year and are bordered by a vegetated riparian area at least 30 feet wide. About half have more than one type of water resource within or adjacent to the water resource. Most of the riparian areas have been disturbed by building, impervious surface, lawns, agriculture, or trash. Low wildlife habitat assessment results occurred for reaches in all subwatersheds except Mill Creek North, and were most common in the Mill Creek South and Perrin Lateral subwatersheds.

Riparian reaches MCN-1.2 R and MCC-3.1R had high assessments in all evaluated functions (Table 14). MCN-1.2 R is the least disturbed riparian area in Turner and is a good local reference for restoration activities (Figure 19 and Table 14). Riparian reaches MCC-1.1R, MCN-1.2C R&L, MCS-1R, MCS-2.1R, MCS-2.3R, PL-2L, and PL-2A R&L had high assessment results for 3 or 4 functions. All subwatersheds had a least one riparian area with three or more high function assessment results.

8. Project Summary

8.1. Wetland Resources

The Local Wetland Inventory examined 1,366 acres located within the Turner UGNA. Wetlands were mapped on 136.8 acres, or 10 percent of the study area (Figure 15). A large wetland mitigation project, associated with a reclaimed gravel mining operation, is included in the figures listed above. If the wetland mitigation is removed from the total acreage amounts, about 51.1 acres of wetlands were mapped, which is about 4 percent of the study area, in the UGNA.

The most abundant type of non-linear wetland in the study area was the palustrine forested type (22.8 acres), followed by palustrine rock bottom (14.7 acres), palustrine forested/scrub-shrub (9.0 acres), palustrine emergent (8.7 acres), palustrine scrub-shrub (3.1 acres), palustrine unconsolidated bottom (0.9 acres), and farmed wetland (0.85 acres) wetlands. The PRB and PUB wetlands are constructed features located on upland soils. When the reclamation plan for the gravel mine in north Turner is completed, the created lacustrine unconsolidated wetland (LUB) will become the most common type of wetland in the UGNA. The Lake Turner mitigation project encompasses 85.7 total acres.

A total of 56,723 feet (10.7 miles) of linear wetlands were mapped in the inventory. Linear wetlands are dominated by riverine lower perennial (19,399 feet) types, followed by palustrine emergent (17,399 feet), riverine upper perennial (12,308 feet), riverine intermittent (6,402), and farmed wetland (1,216). Most of the linear wetlands were characterized and assessed in the urban riparian area inventory.

Total wetland acreage (non-linear) in each subwatershed, ranked by abundance, was:

- Mill Creek North- 90.8 acres;
- Perrin Lateral- 21.5 acres;
- Mill Creek Central-16.5 acres;
- Mill Creek South- 8.1 aces; and
- Mill Creek East- 0 acres.

Removing the wetland mitigation acreage from the Mill Creek North subwatershed reduces the total wetland acreage to 5.1 acres and drops the watershed to 4th in terms of wetland abundance.

The Perrin Lateral subwatershed had the most acres and feet of wetlands per subwatershed acre. Mill Creek South and Central watersheds had similar non-linear wetland densities, but Mill Creek South had more feet of linear wetland per unit area of watershed.

Riverine wetlands in Mill Creek have been identified as essential habitat for indigenous, anadromous salmonids. The OFWAM assessment showed that most wetlands in Turner provide relatively high ecological function for three of the four functions. These functions were wildlife habitat, water quality, and hydrologic control. Diverse wildlife habitat was provided by 49 percent, and some wildlife habitat was provided by 22 percent, of the wetland area in the Turner. The summary of the fish habitat assessment showed that 6 percent of the wetland areas provide intact function and 8 percent of the wetland area had impacted function. This ecological function was judged not applicable to 86 percent of the wetlands because of no surface water connection, or proximity to, surface water.

The summary of the water quality assessment showed that 49 percent of the wetland areas provide intact function and 22 percent of the wetland area had impacted function. The summary of the hydrologic control assessment showed that 57 percent of the wetland areas provide intact function and 14 percent of the wetland area had impacted function.

With respect to assessment results for sensitivity to impact, 11 percent of the wetland area was sensitive and 61 percent was potentially sensitive, to impacts. Enhancement potential assessment was not applicable to 78 percent of the wetlands because they had intact ecological function. About 8 percent of the wetland area had high enhancement potential.

The assessment of social functions resulted in high or moderate results for most wetlands in the study area. Most uses were passive and off-site types because public access to most wetlands is restricted or limited. Educational function for wetland area was assessed as having uses in 14 percent, having potential uses in 46 percent, and not an appropriate use in 11 percent. Recreational use function was provided in 54 percent, had potential in 6 percent, and not appropriate in 11 percent of the wetland area. Recreational use was mainly passive off-site observation via non-motorized boating on Mill Creek or observation from city roads. The aesthetic quality of 44 percent of the wetlands was pleasing, followed by 26 percent moderately pleasing, and 2 percent not pleasing. Future Lake Turner (MCN-C) has the potential to provide high social functions depending on the adjacent land use and development design.

Wetlands in the Perrin Lateral subwatershed had the highest assessment results for most ecological functions and had high assessment results for off-site recreational opportunities and aesthetics. Wetland MCS-C had highest assessment results for ecological and social functions when compared to other wetlands in the study.

Turner might choose to maximize the ecological and social benefits provided by wetland and riparian areas in the community by pursuing a management plan that preserves wetlands but allows for social uses such as education, recreation, and open space. The

potential to develop a system of paths or trails in these areas would strongly enhance the pedestrian transportation mode, or "walkability," of Turner and provide many recreational and aesthetic benefits.

Determination of locally significant wetlands identified eleven wetlands, about 57 percent (29.4 acres) of the wetlands in the study area, as locally significant wetland resources. Each subwatershed had at least one locally significant wetland, but most were located into the Perrin Lateral and Mill Creek North Subwatersheds. The Goal 5 process will need to be completed for significant wetlands in order to develop a management plan for significant wetland resources. The management plan includes three options for each significant wetland:

- Fully protect the resource by prohibiting all conflicting uses;
- Partially protect the resource by allowing some conflicting uses; or
- Not protect the resource by allowing all conflicting uses.

8.2. Riparian Resources

About 78,360 feet (14.8 miles) of riparian area was located within the study area. Riparian area width, based on site potential tree height varied from 60 to 120 feet. Thus, the total riparian area acreage ranged from a minimum of 108 acres to a maximum of 216 acres, or 8 percent and 16 percent of the total study area, respectively. Subwatershed riparian area lengths, listed from high to low, were: Perrin Lateral- 26,365 feet (34 percent of total); Mill Creek South- 19,864 (25 percent of total); Mill Creek North- 16,487 feet (21 percent of total); Mill Creek Central- 15, 642 feet (20 percent of total), and Mill Creek East- 0 feet. Riparian area density, the length of the riparian corridor divided by the area of the watershed, was:

- Perrin Lateral- 122 feet/acre;
- Mill Creek South- 98 feet/acre;
- Mill Creek North- 37 feet/acre;
- Mill Creek Central- 34 feet/acre;

Riparian area density for the entire study area was 57 feet/acre and density for the Mill Creek East Subwatershed was zero.

Most of the riparian area in Turner has been disturbed by building footprints, landscaping, farming, or roadways. In undisturbed areas, typical riparian vegetation was a forest over a shrub layer with a sparse groundcover. The most common riparian area vegetation was a forest dominated by Oregon ash, red alder, Pacific willow, black cottonwood, and Oregon white oak. Shrubs included Pacific ninebark, cascara, red-osier dogwood, snowberry, beaked hazelnut *(Corylus cornuta)*, Douglas hawthorn, service berry *(Amelanchier alnifolia)*, clustered rose, and Nootka rose. Himalayan blackberry *(Rubus discolor)* was a common shrub on disturbed sites.

Most riparian areas had high or medium water quality function (100 percent) and medium flood management function (90 percent) assessment results. Assessment results for thermal regulation and wildlife habitat were more evenly mixed between high, medium, and low function. The wildlife habitat function had the highest percentage of low function (33 percent) of all the functions evaluated.

Assessment results also suggest how riparian area functions in Turner could be improved. Increasing the percentage of tall woody vegetation in the riparian area, and flood prone area, would improve water quality, flood management, thermal regulation, and wildlife habitat functions. Increasing the percentage of trees and shrubs along the top of the bank to provide overhanging vegetation along the water course would improve water quality, thermal regulation, and wildlife habitat functions. Removing rip rap, berms, and channelization from water courses in undeveloped areas could improve the flood management function of the riparian area. Increasing tall woody vegetation could improve wildlife habitat by providing more layers of vegetation (structural diversity) and increasing the amount of large woody debris in the riparian area. Preserving existing wetlands could improve wildlife habitat by retaining a diverse set of water resources. Minimizing human disturbances in the riparian area could also improve wildlife habitat. Examples of disturbance minimization would be: encourage building locations and road alignments outside of riparian area, leave or establish native vegetation corridors in developed and undeveloped areas, and minimize road crossings.

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10. Appendix A: Glossary

ACOE: Army Corps of Engineers federal agency regulating wetlands.

Alluvium: Rock fragments of various sizes transported and deposited by flowing water.

Amplification: A process whereby the intensity of earthquake shaking is enhanced due to the presence of "soft" earth materials.

Anadromous: Species of fish that hatch in fresh water, migrate to saltwater where they spend most of their adult lives, and return to fresh water to lay eggs.

Andesite: A volcanic rock similar to basalt in appearance and composition but has a higher silica (SiO_2) content and is lighter colored.

Aquatic bed: A wetland class dominated by plants that are completely submerged or float on the water's surface.

Aquifer: A natural underground layer of porous, water-bearing materials (sand, gravel, fractured rock) usually capable of yielding a large supply of water.

Areal cover: A measure of dominance defining the degree to which the portions of plant above the gourd cover the ground surface.

Area of Special Flood Hazard - means the land in the flood plain within a community subject to a one (1) percent or greater chance of flooding in any given year as defined by FEMA. Designation on maps always includes the letters A or V.

Armor: Riprap, concrete or other material to reinforce streambanks against erosion.

Basalt: A dark colored, fine-grained volcanic rock with relatively low percentages of silica (SiO_2). Basalt flows cover 70 percent of the Earth's surface (continental and oceanic). Local exposures of basalt include Silver Falls and the Columbia River Gorge.

Bankful Stage- Defined in OAR 141-85-010 (definitions for removal fill permits) as the stage or elevation at which water overflows the natural banks of a stream or other waters of the state and begin to inundate upland areas. In the absence of physical evidence, the two-year recurrent flood elevation may be used to approximate the bankfull stage.

Base flood: The flood having a 1-percent probability of being equaled or exceeded in any given year; also referred to as the 100-year flood.

Base flood elevation: the height of the base flood (100-year) flood in relation to a specified datum, usually the National Geodetic Vertical Datum or North American Vertical Datum.

Bog: Wetlands characterized by a waterlogged, spongy mat of sphagnum moss, ultimately producing a thickness of acid peat. Boas are highly acid and tend to be nutrient poor. The are typically dominated by sedges, evergreen trees and shrubs.

Breccia: Coarse, angular sedimentary rocks or volcanic rocks.

Buffer strips: Strips of grass or other close-growing vegetation (herbs, shrubs, and trees) that separate a waterway (ditch, stream, creek) from an intensive land use area (subdivision, farm), also referred to as filter strips, vegetated filter strips, and grassed buffers.

cfs: Cubic feet per second, a measure of flowing water in streams and rivers.

Channel: An open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.

Channel bank: The sloping land bordering a channel. The bank has a steeper slope than the bottom of the channel and is usually steeper than the land surrounding the channel.

Channelize: To straighten bed or banks of a stream or river or to line them with concrete or other materials.

Clay: Particles less than 0.002 mm in diameter.

Colluvium: Rock material which has moved downslope by creep or surface wash.

Comprehensive Plan: A local document that guides a community's land use, conservation of natural resources, economic development, and public services. Plans contain data and information called the inventory, and the policy element. The policy element sets forth the community's long-range objectives and the policies by which they will be achieved. The plan in adopted by ordinance and has the force of law.

Condition: The integrity of a wetland's, or other type of ecosystem, physical and biological structure. This determines the ecosystem's ability to perform specific functions, as well as its resilience and enhancement opportunities.

Confined aquifer: An aquifer in which groundwater is confined under pressure that is significantly greater than atmospheric pressure.

Debris - Discarded man-made objects that would not occur in an undeveloped stream corridor or wetland. Debris includes, but is not limited to, tires, vehicles, litter, scrap metal, construction waste, lumber, plastic or Styrofoam. Debris does not include objects necessary to a use allowed by this ordinance, or ornamental and recreational structures. Debris does not include existing natural plant materials or natural plant materials which are left after flooding, downed or standing dead trees or trees which have fallen into protected water features.

DEQ: Department of Environmental Quality

Deep-water habitat: Aquatic habitat, such as portions of lakes, rivers, estuaries, and marine water, where surface water is permanent and deeper than 6.6 feet most of the year.

Degraded: Lowered in quality from adverse impacts such as vegetation removal, invasion of nonnative species and or/draining.

Delineation: identifying and marking the wetland/upland boundary of wetlands.

Detention: Temporary storage of water.

Determination: identifying an area as wetland or upland.

Development - means any man-made change to improved or unimproved real estate, including, but not limited to, buildings or other structures, mining, dredging, filling, grading, paving, excavation, or drilling operations located within the area of the Restricted Development Overlay zone. In addition, any activity that results in the removal of more than 10 percent of the vegetation in the Water Quality and Significant Riparian Resource Areas on the lot is defined as development. Development does not include the following: a) stream restoration or enhancement projects, b) farming practices as defined in ORS 30.930 and farm use as defined in ORS 215.203, except that buildings associated with farm practices and farm uses are subject to the requirements of the ordinance, and c) Construction of lots in subdivision meeting the criteria of ORS 92.040(2) (1995).

DLCD: Department of Land Conservation and Development, the State of Oregon's land use planning agency.

Dominant: The species controlling the environment.

DSL: Division of State Lands. State agency that administers Oregon's state-owned lands and regulates removal and fill in waterways and wetlands.

EPA: Environmental Protection Agency

Earthquake: A sudden movement of a part of the Earth's crust caused by movement along a fault or by volcanic activity.

Ecology: The study of the interactions between living things an their environment.

Ecosystem: An organic community of plants and animals, viewed within its physical environment (habitat). The ecosystem results from the interaction between soil, climate, vegetation, and animal life.

Edge: The border between two vegetation types or between a vegetation type and open water. Edge contributes to diversity o wildlife in an ecosystem because some species ("edge dwellers") depend on such areas.

Emergents: Erect, rooted herbaceous plants that can tolerate flooded soil conditions, but cannot tolerate being submerged for extended periods; e.g. cattails, reeds and pickerel weeds.

Emergent wetland: A wetland class dominated by emergent plants. Emergent wetlands include marshes and wet meadows.

Enhancement: The process of improving upon the natural functions and/or values of an area or feature which has been degraded by human activity. Enhancement activities may or may not return the site to a pre-disturbance condition, but creates/recreates processes and features that occur naturally.

Erosion - Erosion is the movement of soil particles resulting from actions of wind or water.

Erosion hazard: The likelihood of soil becoming detached and transported by flooding, surface runoff, or channel velocities.

Essential Indigenous Salmonid Habitat: Shall include the streambed and streambanks to the top of bank as well as adjacent off-channel wetland habitat to the extent those wetland are hydrologically connected to the stream and their protection necessary to prevent the depletion of indigenous anadromous salmonid species during their spawning or rearing (OAR 141-102—030).

FEMA: Federal Emergency Management Agency. The federal agency that manages emergency response and hazard mitigation planing. Administers the National Flood Insurance Program (NFIP); and creates or reviews maps that define the location and elevation of the 1-percent chance flood.

Fill - Any material such as, but not limited to; sand, gravel, soil, rock or gravel that is placed in a wetland or floodplain for the purposes of development or redevelopment.

Floodway and floodway fringe: Components of the 100-year floodplain. Floodway is defined as the channel of a stream and the adjacent land areas reserved to discharge the

100-year flood without cumulatively increasing the elevation of the 100-year flood more than a specified height.

Flood hazard boundary map: Initial insurance map issued by FEMA that identifies approximate areas of 100-year flood hazard in a community.

Flood insurance rate map: Insurance and floodplain management map issued by FEMA that identifies areas of 100-year flood hazard in a community. In some areas, the map also shows base flood elevations and the 500-year floodplain boundaries and, and occasionally, regulatory floodway boundaries. These maps are referred to as FIRMs.

Floodplain Management Regulations: Zoning ordinances, subdivision regulations, building codes, health regulations, special purpose ordinances, and other applications of enforcement for mitigation of flood damage.

Flood prone area: a topographic feature such as a depression or swale, or floodplain subject to inundation during a storm event.

Forested wetland: A wetland class in which the soil saturate and often inundated, and woody plants taller that 20 feet form the dominant cover, e.g. Oregon ash, alders, and cottonwoods. Water-tolerant shrubs often form a second layer beneath the forest canopy, with a layer of herbaceous plants growing beneath the shrubs.

Function: A characteristic action or behavior associated with a wetland that contributes to a larger ecological condition such as wildlife habitat, water quality and/or flood control.

Geomorphology: The study of the landforms on the surface of the Earth and the processes that have fashioned them.

Gravel: Rock materials 2mm to 3 inches in size.

Groundwater: Water found at and beneath the water table in the zones of saturate soil and bedrock.

Ground water discharge: Groundwater that emerges at the land surface in the form of springs or seepage areas. Groundwater can also discharge into rivers and sustain flow during the direr months.

Habitat: The environment in which the requirements of a specific plant or animal are met.

Headwaters: Tributary stream located in upper portions of a watershed.

Herbaceous vegetation: A plant, whether annual, biennial, or perennial, with non-woody stems that die back to the ground at the end of the growing season.

Hydric soil: Saturated or water-logged soils creating low-oxygen (anaerobic) conditions. Strongly associated with wetlands.

Impact: an action that creates an effect.

Impervious surface: A surface that cannot effectively absorb or infiltrate water, such as roads, parking lots, and sidewalks.

Intermittent stream: A waterway that flows for part of the year.

Inventory: A systematic survey of an area to identify, classify, and map the approximate boundaries of a resource or natural hazard.

Lacustrine wetland: Wetland and deepwater habitats with all of the following characteristics: (1) situated in a topographic depression or damned river channel, (2) lacking trees, shrubs, persistent emergents, emergent mosses or lichens with greater that 30 percent areal coverage, (3) total area exceeds 20 acres, and (4) ocean-derived salts less than 0.5‰ .

LCDC: Land Conservation and Development Commission, seven-member lay commission that oversees the statewide land use planning program and reviews and approves land use ordinances and plans.

Landslides: Movement of soil and earth materials down slope. Earthquakes, wet conditions, and excavation can trigger landslides in marginally stable situations.

LUBA: Land Use Board of Appeals, three-member independent tribunal that reviews contested decisions regarding land use plans and ordinances.

Large woody debris: Dead material from trees and shrubs that is large enough to persist more than one season.

LWI: Local Wetland Inventory A Goal 5 resource inventory defined by OAR 141-86-110 through 141-86-240. Systematic survey of an area to identify, classify and map the approximate boundaries of wetlands, and includes the supporting documentation required by these rules.

Main stem: The largest continuous channel of a river system that tributaries flow into.

Mass Wasting: General term for the transfer of earth material down hillsopes. It includes flow, slide, fall, and creep.

Marsh: An emergent wetland that is flooded either seasonally or permanently. Marshes support the growth of emergent plants such as cattails, bulrushes, reeds, and sedges; floating-leaved plant such as pondweeds and submergents.

Nonpoint source: Pollution sources that are diffuse and do not have a single point of origin or are not introduced into a receiving stream from a specific outlet.

Noxious vegetation: Plant species that have been introduced (non-native), and due to aggressive growth patterns and lack of natural enemies in the area where introduced, spread rapidly into native plant communities.

NWI: National Wetland Inventory, database designed and established by the Unites States Fish and Wildlife Service (USFWS) that maps and classifies wetlands in the United States.

Open water: A wetland class consisting of areas of water less that 6.6 feet deep. Submerged or floating-leaved plants often inhabit the shallower portions along the edges of the body of water.

Palustrine: Palustrine wetlands included all freshwater wetlands dominated by trees, shrubs, emergents, mosses or lichens. They also include wetlands lacking such vegetation but with all of the following characteristics: areas less than 20 acres, lacking active wave-formed or bedrock shorelines, maximum water depth less than 6.6 feet, and salinity less that 0.5 percent.

Perennial Stream: A waterway where water flows throughout the year.

Periodic Review: A broad reevaluation of the comprehensive plan and land use ordinances that occurs every four to ten years.

Permeability: Permeability is the rate at which soil transmits water when completely saturated. Rate is given as inches per hour: very slow, less than 0.06; slow 0.06-0.2; Moderately Slow, 0.2-0.6; Moderate, 0.6-2.0; Moderately Rapid, 2.0-6.0; Rapid, 6.0-20.0; Very Rapid, more than 20.

Point source: A stationary location or fixed facility from which pollutants are discharged or emitted.

Potential tree height: The potential height o a mater tree for a particular location which is determined by climate, geology, hydrology, and landscape position.

Pumice: Light colored, glassy, vesicular rock formed when gas passes through newly erupted rock.

OAR: Oregon Administrative Rules. A body of law that describes how legislation and other laws will be implemented.

OFWAM: Oregon Freshwater Wetland Assessment Methodology is an assessment method that determines wetland functions and values. OFWAM was developed for planners, and public officials that are not technical specialists. OFWAM is intended for planning and educational uses and not detailed impact analysis on individual wetlands.

Ordinary Mean High Water Line - As defined in OAR 141-82-005 as the line on the bank or shore to which water ordinarily rises in season; synonymous with Mean High Water (ORS274.005).

Ordinary Mean Low Water Line - As defined in OAR 141-82-005 as the line on the bank or shore to which water ordinarily recedes in season; synonymous with Mean Low Water (ORS274.005).

Reach: A segment of a riparian area with relatively homogeneous physical characteristic, its length parallel to the water resource can be determined by major changes in vegetation type, slope, or by changes in land use.

Recharge: Process by which rain water (precipitation) seeps into the groundwater system.

Recharge area: Generally, an area that is connected with the underground aquifer(s) by a highly porous soil or rock layer.

Reference: An undisturbed area that exhibits the potential natural vegetation under a particular set of conditions. Used as a model for restoration or disturbed sites.

Restoration: The process of returning a disturbed or altered are or feature to a previously existing natural condition. Restoration activities reestablish the structure, function, and/or diversity to that which occurred prior to impacts caused by human activity.

Riparian buffer: A zone within the riparian area where placement of new structures, surficial alteration and disturbance, and vegetation removal is limited to prohibited in order to preserve the environmental and social benefits of the riparian area.

Riparian area: The area immediately adjacent to surface water such as rivers, streams, ponds, lakes, wetlands, and springs consisting of transition areas between an aquatic ecosystem to terrestrial ecosystem.

Riparian corridor: A Goal 5 resource that includes theater areas, fish habitat, riparian areas, and wetlands within the riparian corridor boundary.

Riverine wetland: Wetland and deepwater habitats contained within the channel except: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and (2) habitat with water containing ocean derived salts in excess of 0.5 ‰. Water is usually flowing.

Runoff: That part of precipitation, snow melt, or irrigation that runs off land into streams or other surface water. It can carry pollutants from the air and land into the receiving waters.

Rural: Any area not included in a business, industrial, or residential zone of moderate or high density, whether or not it is within the boundaries of a municipality.

Sand: Rock particles that range in size from 0.05 to 2 mm in size.

Scrub-shrub wetland: A wetland class dominated by shrubs and woody plants less than 20 feet tall, e.g. red-osier dogwoods, Douglas hawthorns, serviceberry, Pacific ninebark, etc. Water levels in shrub swamps can range from permanent to intermittent flooding.

Seismic: Relating to earthquakes

Silt: Particles that range in size from 0.002 to 0.05 mm in diameter.

Spring: A flow of water above ground level that occurs where the water-table (groundwater) intercepts the ground surface. Springs and lines of springs are often found at breaks in slope, at contacts between different types of rocks or soils, and along faults. Springs may be associated with wetland and/or riparian areas and increased hazard of unstable slopes.

Statewide Planning Goals: Nineteen statements of land use planning standards that establish broad policies that must me addressed through local comprehensive land use planning.

Statewide Planning Goal 5: Oregon's statewide planning goal that addresses open space, scenic and historic areas, and natural resources. The purpose of the goal is to conserve open space and protect natural and scenic resources.

Statewide Planning Goal 6: Oregon's statewide planning goal that addresses air, water, and land resources quality to "maintain and improve the quality of air, water, and land resources of the state" as implemented by the Land Conservation and Development Commission (LCDC).

Statewide Planning Goal 7: Oregon's statewide planning goal that addresses areas subject to natural disasters and hazards to "protect life and property from natural disasters and hazards" as implemented by the Land Conservation and Development Commission (LCDC).

Stream - A body of water moving over the earth's surface in a channel or bed, such as a creek, rivulet or river. It flows at least part of the year, including perennial and intermittent streams. Stream are dynamic in nature and their structure is maintained through build-up and loss of sediment. Streams that have been straightened and/or ditched are still considered streams.

Surface water: All water naturally open to the atmosphere (rivers, lakes, reservoirs, streams, impoundments, seas, estuaries) and all springs, wells, or other collectors that are directly influenced by surface water.

Submergent: Plants that grow and reproduce while completely submerged in water.

Swamp: A wetland in which the soil is saturated and often inundated and that is dominated by a woody cover.

Terrace: A nearly flat portion of the landscape terminated by a steep edge. Formed by a variety of processes including the action of rivers, glaciers, and soil movement.

Top of Bank - The same as "bankfull stage" defined in OAR 141-85-010(2).

Tuff: Lithified (transformed to rock) volcanic ash. Ash particles are less than 2 mm in diameter. Ash deposits are explosively ejected and settle out as air fall deposits. Deposits can be further transported and deposited by flowing water.

Urbanizable area: Area between the Urban Growth Boundary and city limits that will eventually be developed.

UGB: Urban Growth Boundary. A line which drawn around a geographic area which separates urban use lands from resource, or rural, use lands; and shows where the city intends to grow.

Urban: Area with at least 50 percent built-up with structures devoted to business, industry, or residences for a distance of a quarter mile or more.

Urbanizing: Areas within an urban growth boundary that are undeveloped.

Water resource: Rivers, streams, lakes, ponds, springs, and adjacent wetlands.

Water table: The level of groundwater. The upper surface of the zone where all open spaces in the earth materials are filled with water.

Watershed: The area from which a surface water course receives its water. An area of land that contributes runoff to one specific delivery point. Large watersheds can be composed of several smaller "subwatersheds", each of which contributes runoff to different locations that ultimately combine at a delivery point.

Wet meadow: Emergent wetlands that are generally seasonally flooded and have saturated soils for much of the growing season. Wet meadows are dominated by grasses, sedges and rushes and are often cultivated or pastured.

Wetland: An area that is inundated or saturated by surface water or ground water at a frequency and duration to support, and that under normal circumstances does support, a prevalence o vegetation typically adapted for life in saturated soil conditions.

Wetland delineation: The process of using field indicators (vegetation, soils, hydrology) to determine the boundary between a wetland and an upland.

Woody vegetation: A plant with woody stems that persist throughout the growing season.

Zone A: Areas shown on Flood Insurance Rate Maps (FIRMS) within the 100-year floodplain for which base flood elevations have not been determined.

Zone AE: Areas shown on Flood Insurance Rate Maps (FIRMS) within the 100-year floodplain for which base flood elevations have been determined and are shown on the map.

Zone X: Areas shown on Flood Insurance Rate Maps (FIRMS) subject to (1) 500-year flood event, or (2) a 100-year flood event with average depths of less than 1 foot, or (3) having a drainage area of less than one square mile, or (4) and area protected from a 100-year flood by a levees. Structures located in X zones are not subject to National Flood Insurance Program Regulations.

11. Appendix B: Detailed Soil Descriptions

Amity silt loam, mapping unit Am

The Amity series is a somewhat poorly drained soil located on nearly level (0 to 2 percent slopes) broad valley terraces. It formed in old alluvial (sediments deposited by flowing water) or lacustrine (lake) deposits at elevations ranging from 150-350 feet). The surface layer in a representative profile is a very dark grayish-brown (10YR 3/2) and dark gray (10YR 4/1) silt loam about 24 inches thick with concretions occurring below 7 inches. The subsoil layer is a grayish-brown (2.5Y 4/2) silty clay loam located at depths between 24 and 37 inches with reddish and black concretions. The substratum, between 37 to 60 inches depth, is a olive brown (2.5Y 4/4) silt loam. Amity is classified as a fine-silty, mixed, mesic Argiaquic Xeric Argialboll. Native vegetation is Douglas-fir, Oregon white oak *(Quercus garryana),* shrubs, and grasses. Permeability is moderately slow and these soils have moderate shrink-swell potential. Amity soils are in hydrologic group C. Runoff is slow and this soil has a slight water erosion hazard. Amity soils are not usually flooded, but high water tables associated with perched water bodies occur in the winter and early spring.

Included in the Amity series are areas of Concord and Woodburn soils. Amity and Woodburn soils are not listed as hydric by the Marion County NRCS or the NTCHS. Concord is listed as a hydric soil.

Amity Field Clues:
A: Color ranges from dark brown to very dark grayish-brown
B: Texture is heavy silt loam in places
Bedrock depth exceeds 60"

Clackamas Gravelly Loam, mapping unit Ck

This series is a deep, somewhat poorly drained soil that formed in mixed gravelly alluvium (very small fragments of rock transported and deposited by running water). Clackamas occurs on nearly level (0 to 3 percent) slopes on terraces. Elevations range from 175 to 650 feet. In a representative profile the surface layer is very dark grayish-brown (10YR 3/2) gravelly loam about 6 inches thick. The subsurface layer is very dark grayish-brown (10YR 3/2) gravelly loam between 6 and 15 inches depth. The subsoil is a very dark gray (10YR 3/1) gravelly clay loam between 15 and 24 inches depth, with dark reddish-brown (2.5YR 3/4) mottles. The substratum, between 24 and 60 inches depth, is a dark brown (10YR 3/3) very gravelly clay loam with strong brown mottles (7.5YR 5/6). Clackamas is classified as a fine-loamy, mixed, noncalcareous, mesic Typic Argiaquoll. Native vegetation is Douglas-fir *(Pseudotsuga menziesii),* hazel *(Corylus cornuta),* wild rose *(Rosa sp.),* brackenfern *(Pteridium aquilinium*), and grasses. Permeability is moderately slow and these soils have low shrink-swell potential. Runoff is slow and erosion hazard is slight. The soil is in hydrologic group C. A high water table (6 to 16 inches deep) can occur as perched water bodies from December through April. Perched water bodies are layers of water that pond over less permeable layers (the clay layers in this soil) in the subsurface. Rooting depth is limited by a compact, very gravelly substratum and Courtney is considered prime farm land if it is drained.

Clackamas gravelly loam is associated with Sifton and Salem soils, and has inclusions of Courtney. Clackamas, and its Sifton and Salem associates, are not listed as a hydric soils by the Marion County NRCS and the NTCHS. Courtney is a hydric soil.

Clackamas Field Clues:

A: 0-15", black to very dark grayish-brown silty clay loam.

B: 15-24", variegated color, depth to gravelly lower horizon varies from 20-36 inches

Courtney Gravelly Silty Clay Loam, mapping unit Cu

This series is a deep, poorly drained soil that formed in alluvial deposits of different ages. This soil is located nearly level slopes (0 - 2 percent) on gravelly alluvial terraces in shallow depressions and drainage ways between Stayton and Salem. Elevations range from 175 to 650 feet. In a representative profile the surface layer is black (10YR 2/2) and very dark gray (7.5YR 3/0) gravelly silty clay loam about 12 inches thick with few to common, fine to medium, distinct dark brown (7.5YR 4/4) mottles and iron stains in root channels. The subsoil is a very dark gray (10YR 2/1) gravelly clay between 12 and 24 inches depth, with few fine distinct mottles. The substratum, between 24 and 57 inches depth, is a dark grayish-brown (10YR 4/2, 7.5 YR 3/2) very gravelly clay loam with few fine distinct mottles. Courtney is classified as a fine, montmorillonitic, noncalcareous, mesic Abruptic Argiaquoll. Native vegetation is Oregon ash *(Fraxinus latifolia)*, vine maple *(Acer circinatum)*, hazel *(Corylus cornuta)*, wild rose *(Rosa sp.)*, trailing blackberry *(Rubus ursinus)*, rushes *(Juncus sp.)*, sedges *(Carex sp.)*, and grasses. Permeability is very slow and these soils have high shrink-swell potential. Runoff is very slow to ponded, and erosion hazard is slight. The soil is in hydrologic group D. Root penetration and drainage are impeded by a claypan. A high water table (0 to 0.5 feet deep) can occur as perched water bodies from December through April. Perched water bodies are layers of water that pond over less permeable layers (the clay layers in this soil) in the subsurface. Courtney is not considered prime farm land.

Courtney is listed as a hydric soil by the Marion County NRCS and the NTCHS.

Courtney Field Clues:

A: 0-12", black, very dark brown, very dark gray silty clay loam, clay loam, silty clay

B2: 12-24", dark gray to very dark gray gravelly silty clay, gravelly clay; gravel content ranges from 20 to 30 percent

C: Stratified with variable gravel and cobble content

Clay pan at depths of 12 to 16 inches.

Hazelair Silt Loam, 6 - 20 percent slopes, mapping unit HaD

This series is a moderately well drained soil that formed in material weathered in sandstone and shale. Hazelair occurs on footslopes adjacent to the valley floor. Slope varies from 2 to 20 percent and elevations range from 250 to 650 feet. In a representative profile the surface layer is very dark brown (10YR 2/2) silt loam about 12 inches thick. The subsoil is a very dark grayish-brown (10YR 3/2) silty clay loam between 12 and 18 inches depth. The substratum, between 18 and 38 inches depth, is a dark grayish-brown (2.5Y 4/2) clay and silty clay with brownish-gray (10YR 6/2) and yellowish brown (10YR 4/4) mottles. Hard, fractured, fine-grained sandstone is located at depths of 38 inches. Hazelair is classified as a very fine, mixed, mesic Aquultic Haploxeroll. Native vegetation is Oregon white oak *(Quercus garryana)*, scattered Douglas-fir *(Psuedotsuga menziesii)*, wild rose *(Rosa sp.)*, poison oak *(Rhus diversiloba)*, and grasses. Permeability is slow and these soils have moderate to high shrink-swell potential. Runoff is medium and erosion hazard is moderate. The soil is in hydrologic group C. Root penetration is impeded by a clay pan located at depth of 12 to 24 inches.

Included in the Hazelair silt loam are small stony. Hazelair is not listed as a hydric soil by the Marion County NRCS and the NTCHS.

Hazelair Field Clues:

A: Texture ranges from silt loam to silty clay loam.

C: Depth ranges form 12 to 24 inches

Distinct or prominent mottles within a depth of 20".

Holcomb Silt Loam, mapping unit Ho

This series is a somewhat poorly drained soil that formed in mixed alluvial clays and silts and some loess in the upper layer. Holcomb is located on nearly level (0 to 2 percent slopes) and elevations range from 125 to 350 feet. In a representative profile the surface layer is a very dark brown (10YR 2/2) and very dark grayish-brown (10YR 3/2) silt loam and dark brown (10YR 3/3) light silty clay loam about 24 inches thick. Common, fine, distinct yellowish-brown (10YR 5/6) mottles occur in the lowest sublayer. The subsoil is a dark grayish-brown (10YR 2/1) clay and dark grayish-brown (10YR 4/2) silty clay between 24 and 42 inches depth with common, fine, distinct, yellowish-brown (10YR 5/6) mottles. Holcomb is classified as a fine, montmorillonitic, mesic Mollic Albaqualf. Native vegetation is Oregon white oak *(Quercus garryana)*, blackberry *(Rubus ursinus)*, wild rose *(Rosa sp.)*, and grasses. Permeability is very slow and these soils have moderate to high shrink-swell potential. The soil is in hydrologic group D. Runoff is slow and erosion hazard is slight. A high water table can occur as perched water bodies in the winter and early spring.

Holcomb is not listed as a hydric soil by the Marion County NRCS and the NTCHS.

Holcomb Field Clues:

A: 0-8", 10YR 2 or 3/3 or less silty clay loam. Sometimes 2.5Y.

B2: 15-60", 10YR or 2.5Y 2 or 3/ 1 or less clay

C: 2.5Y or 10YR

Distinct or prominent mottles within a depth of 20".

Bedrock >60". Saturated 4-6 months per year. Moist continuously at a depth less than 20 inches. Soil cracks to depths between 7 and 20 inches.

McAlpin Silty Clay Loam, mapping unit MaA

This series is a moderately well to somewhat poorly drained soil that formed in mixed alluvium (very small fragments of rock transported and deposited by running water). McAlpin is located on alluvial fans and alluvial bottoms of small streams and drainages on low foothills. Slopes vary from 0 to 6 percent and elevations range from 250 to 1,000 feet. In a representative profile the surface layer is dark brown (7.5YR 3/2) and dark reddish-brown (5YR 3/3) silty clay loam about 14 inches thick with reddish-brown concretions. The subsoil is a dark reddish-brown (10YR 2/1) silty clay and dark brown (10YR 4/1) silty clay between 14 and 65 inches depth, with reddish-brown concretions. McAlpin is classified as a fine, mixed, mesic Cumulic, Ultic, Haploxeroll. Native vegetation is Douglas-fir *(Psuedotsuga menziesii)*, some Oregon ash *(Fraxinus latifolia)*, wild rose *(Rosa sp.)* and grasses. Permeability is moderately slow and these soils have moderate to high shrink-swell potential. Runoff is slow and erosion hazard is slight. The soil is in hydrologic group C.

Included in the McAlpin silty clay loam are inclusions of Abiqua and Waldo which can occupy as much as 5 percent of this mapping unit. McAlpin and Abiqua are not listed as a hydric soils by the Marion County NRCS and the NTCHS, but Waldo is a hydric soil.

McAlpin Field Clues:

A: Color ranges from dark brown, very dark brown to very dark reddish-brown.

B: Color ranges. In places, faint mottles occur at 20" depth and distinct mottles below 30" depth. In some areas a few pebble are scattered throughout the solum.

Nekia Silty Clay Loam,

- *2 -7 percent slopes, mapping unit NeB*
- *7-12 percent slopes, mapping unit NeC*
- *12-20 percent slopes, mapping unit NeD*

This series is a well drained soil that formed in material weathered from tuffs and basalt. Nekia occurs on low, red foothills that are dissected by drainage channels. Slopes vary from 2 to 50 percent, and elevations range from 300 to 1,000 feet. In a representative profile the surface layer is a dark reddish-brown (5YR 2/2) silty clay loam about 9 inches thick. The subsoil is a dark reddish-brown (5YR 3/3-4) clay between 9 and 36 inches depth. Few, faint, black coatings on ped surfaces and concretions are located at depth of 24 to 36 inches. Basalt bedrock underlies the subsoil at depths of about 36 and 45 inches. Nekia is classified as a clayey, mixed, mesic Xeric Haplohumult. Native vegetation is Douglas-fir *(Psuedotsuga menziesii)*, with scattered Oregon white oak *(Quercus garryana)*, wild rose *(Rosa sp.)*, poison oak *(Rhus diversiloba)*, and brackenfern *(Pteridium aquilinium)*. Permeability is moderately slow and these soils have low to moderate shrink-swell potential. The soil is in hydrologic group C. Runoff is slow and erosion hazard is slight for NeB. NeB is prime farmland. Runoff is medium and erosion hazard is moderate for NeC and NeD.

Included in the Nekia silty clay loam are inclusions of Jory, McCully, and Witzel which can occupy as much as 10 to 15 percent of this mapping unit. Nekia and all its inclusions are not listed as a hydric soils by the Marion County NRCS or the NTCHS. However, wet spots in Nekia may be hydric.

Nekia Field Clues:
A: 0-9", color ranges from dark brown to dark reddish brown. Coarse fragment content ranges for 0 to 15 percent and is composed of basalt.
B2: 18-36", dark reddish brown to yellowish red color, in places has silty clay texture. Coarse fragment content (basalt) can be up to 50 percent.
Depth to bedrock ranges from 20 to 40 inches but is most commonly more than 30 inches.

Nekia Stony Silty Clay Loam, 2 - 12 percent slopes, mapping unit NkC

The description for this soil resembles the description given above for Nekia silty clay loam (NeB). The main difference is the that the surface layer is stony and rock outcrops occur in a few places. Runoff is medium and erosion hazard is moderate.

Included in Nekia very stony silty clay loam are inclusions of Witzel which occupy 5 to 10 percent of this mapping unit. NsF, and its inclusion, are not listed as hydric soils by the Marion County NRCS and the NTCHS.

Nekia Very Stony Silty Clay Loam, 30 - 50 percent slopes, mapping unit NsF

The description for this soil resembles the description given above for Nekia silty clay loam (NeB). The main difference is the that the surface layer is very stony and rock outcrops are common. Runoff is rapid and erosion hazard is severe.

Included in Nekia very stony silty clay loam are inclusions of Witzel which occupy 5 to 10 percent of this mapping unit. NsF, and its inclusion, are not listed as hydric soils by the Marion County NRCS and the NTCHS.

Sifton Gravelly Loam, mapping unit St

This series is a deep, excessively drained soil underlain by gravelly sand. This soil is located nearly level slopes (0 - 2 percent) on gravelly alluvial terraces along North Santiam and Mill Creek. Elevations range from 175 to 650 feet. In a representative profile the surface layer is black (10YR 2/1) gravelly loam. The subsoil is a dark brown (10YR 3/3) gravelly loam between 17 and 24 inches depth, with few fine distinct mottles. The substratum, between 24 and 60 inches depth, is a dark brown (10YR 4/3) very gravelly gravelly and cobbly sand. Coarse soil fraction is mainly of basaltic origin. Sifton is classified as a medial, over sandy or sandy-skeletal, mixed, mesic Umbric Vitrandept. Native vegetation is Douglas-fir *(Psuedotsuga menziesii)*, vine maple *(Acer circinatum)*, hazel *(Corylus cornuta)*, ocean spray *(Holodiscus discolor)*, trailing blackberry *(Rubus ursinus)*, and brackenfern *(Pteridium aquilinum)*. Permeability is moderately to very rapid and these soils have low shrink-swell potential. Runoff is very slow and erosion hazard is very slight. The soil is in hydrologic group B. Root penetration is impeded by the very gravelly horizon at 20 - 30 inches. Sifton is considered prime farm land.

Sifton is associated with Salem and Clackamas soils. Sifton and its associates are not listed as a hydric soils by the Marion County NRCS and the NTCHS.

Sifton Field Clues:

A: 0-117", black, very dark brown gravelly loam, gravelly silt loam

B: 17-24", gravelly loam and gravelly very-fine sandy loam

Gravel and cobble content in solum ranges from 25 - 40 percent. Very gravelly layer at depths of 20 - 30 inches.

Silverton Silt Loam, 2- 12 percent slopes, mapping unit SuC

This series is a well drained soil that formed in silty material over fine-textured material that contains gravel. Silverton is located on dissected terraces or the footslopes of low foothills. Slopes varies from 2 to 20 percent and elevations range from 225 to 300 feet. In a representative profile the surface layer is dark brown (10YR 3/3 and 7.5YR 3/3) silt loam and heavy silt loam about 16 inches thick with concretions. The subsoil is a dark brown (7.5YR 3-4/3) silty clay loam and gravelly silty clay clay between 16 and 37 inches depth with concretions. The substratum, below 37 inches depth, is fractured and partially weathered basaltic bedrock. Silverton is classified as a fine, mixed, mesic Pachic, Ultic, Argixeroll. Native vegetation is Douglas-fir *(Psuedotsuga menziesii)*, vine maple *(Acer circinatum)*, hazel *(Corylus cornuta)*, ocean spray *(Holodiscus discolor)*, poison oak *(Rhus diversiloba)*, thimbleberry *(Rubus parviflorus)*, blackberry *(Rubus ursinus.)*, strawberry *(Fragaria)*, brackefern *(Pteridium aquilinum)*, bentgrass *(Agrostis spp.)*, and pathfinder. Permeability is moderately slow and these soils have moderate to high shrink-swell potential. Runoff is slow and erosion hazard is slight. The soil is in hydrologic group C.

Included in the Silverton silt loam are inclusions of Jory and Nekia. Silverton and all its inclusions are not listed as a hydric soils by the Marion County NRCS and the NTCHS.

Silverton Field Clues:

Depth to IIB horizon ranges from 15 to 30 inches and this horizon can be up to 50 percent coarse fragments. Depth to weathered basalt ranges from 20 to 40 inches, but is most commonly about 30 inches.

Wapato Silty Clay Loam, mapping unit Wc

This series is a deep, poorly drained soil that formed in mixed alluvium (very small fragments of rock transported and deposited by running water). Wapato occurs in depressions and overflow channels on floodplains and slopes are nearly level (0 to 2 percent). Elevations range from 100 to

650 feet. In a representative profile, the surface layer is a very dark brown (10YR 2/2) silty clay loam with few, fine, faint yellowish-brown (10YR 5/4) and common, fine, distinct, reddish-brown (10YR 4/2) mottles about 16 inches thick. The subsoil is a very dark grayish-brown (10YR 3/2) silty clay loam between 16 and 36 inches depth, with few, fine, faint dark gray (10YR 5/1) mottles. The substratum, between 36 and 60 inches depth, is a very dark brown (7.5YR 4/4) silty clay loam with many, medium, prominent grayish-brown mottles (10YR 5/8). Wapato is classified as a fine-silty, mixed, noncalcareous, mesic Fluventic Haplaquoll. Native vegetation is Oregon ash *(Fraxinus latifolia)*, willow *(Salix spp.)*, tussock *()*, sedges *(Carex spp.)*, and grasses. Permeability is moderately slow and these soils have moderate shrink-swell potential. Runoff is slow and erosion hazard is slight. The soil is in hydrologic group D. Overflow on Wapato soils occurs in winter and early spring. A high water table can occur as perched water bodies from December through April. Perched water bodies are layers of water that pond over less permeable layers in the subsurface.

Included in the Wapato silty clay loam is listed as a hydric soil by the Marion County NRCS and the NTCHS.

Wapato Field Clues:
A: 0-16", color ranges from very dark brown to very dark grayish-brown
B: 16-36", dark grayish-brown color in places, texture ranges from silty clay loam to light silty clay
C: 36-60", texture ranges from clay loam, silty clay loam, light silty clay
Mottling can occur at the surface or begin at depths of 12".

12. Appendix C: Wetland Characterization Sheets, OFWAM Summary Sheet, & Locally Significant Wetland Evaluation

Wetland Characterization Sheet

Date(s) of field work: 8/9/99, 11/4/99	Wetland Mapping Code: MCN - A
Data Sheet Numbers: 13-4, 19-1, 2, & 3; 26-1, 2, 3, 4, 5, 5, & 6. See riparian inventory for MCN-1.1R & MCN-1.2R	Length: 3,4461 feet in length
Investigator(s): J. Fromm	Wetland Classification(s): R2
Verification Type: On-site. See Wetland determination sheets #19-3, 26-2, 26-6.	Land Use: East side of Mill Creek adjacent to this wetland is undeveloped, in Turner City Park, or low density residential.

Location	Tax Lots(s):
Legal: T 8S, R2W, Sec. 20 and 29	082W20C 00100
Other: Mill Ck. in northwest Turner, between RR bridge and southern park boundary	082W20C 00300
Hydrologic Basin: Mill Creek North	082W20C 00500
Soil—Mapped Series: Clackamas and Sifton gravelly loams, not hydric	082W20C 00700
Hydrologic Source: Surface water	082W29B 00100
Floodplain: Yes, Zone AE and floodway,	082W29B 00300
Water Quality: 303(d) list for high bacteria levels	

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
SEE	RIPARIAN	AREA	INVENTORY

Comments: This reach of Mill Creek has been characterized and assessed in the riparian area inventory as reaches MCN-1.1R and MCN-1.2R. Mill Creek occupies the far western side of its floodplain just north of the narrowest part of Turner Gap. The area adjacent to the creek is designated lower density residential and public/semi-public (Turner City Park) in the Comprehensive Plan. Much of the area is in a flood hazard zone with a 1% chance of annual flooding and the floodway extends well beyond the channel as defined by normal high water levels. The coarse textured soils (high gravel content) limit the wetland area to the creek bed and lower banks. Berms have been constructed along the creek in parts of Turner City Park. Wetland MCN-A is not assessed using OFWAM because it is a riverine (R2) wetland. The riparian area along Wetland MCN-A has been assessed and received high or medium ratings for water quality, flood management, thermal regulation and wildlife habitat. Mill Creek is mapped as Essential Indigenous Salmonid Habitat.

[1]Wetland Classification Codes:

FW = farmed wetland
R2 = lower perennial riverine
R3 = upper perennial riverine
R4 = intermittent riverine

PUB = palustrine unconsolidated bottom
PFO = palustrine forested
PSS = palustrine scrub-shrub
PEM = palustrine emergent
POW = palustrine open water, unknown bottom

Wetland Characterization Sheet

Date(s) of field work: 8/9/99, 8/10/99	Wetland Mapping Code: MCN - B
Data Sheet Numbers: 13-1, 13-2, 13-3, 20-1, 20-2, 26-2, 26-6	Size (acres): 1.76
Investigator(s): J. Fromm	Wetland Classification(s): PSS-1.53 acres; PFO- 0.23 acres
Verification Type: on-site	Land Use: Undeveloped area north of Turner City Park and west of RR.

Location	Tax Lots(s):
Legal: T8S, R2W, Sections 20 and 29	082W20C 00300
Other: Northwest Turner near the RR bridge and Mill Creek, and west of the RR berm.	082W20C 00500
Hydrologic Basin: Mill Creek North	082W20C 00700
Soil—Mapped Series: Clackamas gravelly loam, non-hydric	
Hydrologic Source: Surface water	
Floodplain: Yes, Zone AE and floodway	
Water Quality: Mill Creek is on 303(d) list for high bacteria levels	

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
Populus balsamifera	*Spirea douglasii*	*Solanum dulcamara*	*Carex obnupta*
Fraxinus latifolia	*Cornus stolonifera*		*Phalaris arundinacea*
Crataegus douglasii	*Physocarpus capitatus*		*Carex deweyana*
Salix lasiandra	*Fraxinus latifolia*		*Mentha arvensis*
	Rosa pisocarpa		*Ranunculus occidentalis*

Comments: The PSS wetland (13-3) is located near where Mill Creek flows under the railroad bridge. A PSS wetland is also located on a channel island near the RR bridge. The PFO wetland (13-1, 13-2, 20-2) is located in a linear, narrow, low-lying area along the west side of the railroad tracks. Drainage from part of the floodplain west of Mill Creek drains toward the berm the tracks are located on and some back water flooding from the creek occurs. Wetlands are located on the lower part of the floodplain that appears to be frequently flooded- numerous drift lines, sediment deposits, and water marks. This part of Turner is currently undeveloped and is located north of Turner City Park. The boundary between the PFO wetland and the upland forest dominated by *Quercus garryana* and *Pseudotsuga menziesii* is marked by a break in slope. *Populus balsamifera*, *Carex obnupta*, *Salix lasiandra*, water marks, and a topographic low also define the wetland area. Wetland soils were mainly 10YR 3/1 gravelly silt loams.

[1]Wetland Classification Codes:

FW = farmed wetland
R2 = lower perennial riverine
R3 = upper perennial riverine
R4 = intermittent riverine
PUB = palustrine unconsolidated bottom
PFO = palustrine forested
PSS = palustrine scrub-shrub
PEM = palustrine emergent
POW = palustrine open water, unknown bottom

Wetland Characterization Sheet

Date(s) of field work: 1995	Wetland Mapping Code: MCN - C
Data Sheet Numbers: NA	Size (acres): 85.7 acres
Investigator(s): Scoles and Associates Oregon Det#96-0024, RF 10293	Wetland Classification(s): WM composed of PFO, PSS, PEM, & LUB.
Verification Type: On-site and estimate based on the reclamation/mitigation plan	Land Use: Presently an active gravel mining operation.

Location	Tax Lots(s):
Legal: T8S, R2W, Section 20	082W20 00400
Other: Located in northwest Turner, east of Turner Rd. and west of ValView Dr.	082W20A 00800
Hydrologic Basin: Mill Ck. North	082W20D 00100
Soil—Mapped Series: Courtney gravelly silty clay loam, Clackamas gravelly loam, McAlpin silty clay loam	082W20D 00300
Hydrologic Source: groundwater, surface water	082W20D 00304
Floodplain: Yes, Zone AE	082W20D 00401
Water Quality: unknown	

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
Fraxinus latifolia	*Physocarpus capitatus*		*Juncus patens*
Populus balsamifera	*Spirea douglasii*		*Carex obnupta*
Alnus rubra	*Rosa nutkana*		*Camassia quamash*
Crataegus douglasii	*Cornus stolonifera*		*Carex unilateralis*
Salix species	*Sambucus cerulea*		*Deschampsia cespitosa*
Rhamnus purshiana			*Aloepecurus pratensis*
			Festuca rubra
			Eleocharis sp.
			Scirpus microcarpus

Comments: Wetland MCN-C is located on the flat floodplain and terrace surface in northwest Turner. The description and OFWAM assessment are estimates based on the wetland mitigation and mining reclamation plan developed prior to the mining operation. Mining operations impacted forested, scrub-shrub and emergent wetlands in this location. Existing drainageways, running both north-south and east-west were also affected. The drainages will be relocated and discharge flows to Mill Creek. Most of the gravel mine will be reclaimed to 82.2 acres of open water. Future Lake Turner will be about x feet deep. About 17.7 acres of forested, scrub shrub, and emergent wetlands will fringe the east part of the lake; and an upland forested buffer will be planted on the west and south edges of the lake. The wetland species in the mitigation plan are listed in the above table. Upland forest buffer is composed of *Quercus garryana*, *Populus balsamifera*, *Pseudotsuga menziesii*, *Acer macrophyllum*, *Pinus ponderosa*, *Amelanchier alnifolia*, *Malus fusca*, *Holodiscus discolor*, *Symphoricarpos albus*, *Mahonia nervosa*, and *Ribes* sp. OFWAM assessment assumes the lake is not directly connected to Mill Creek and water depth exceeds 6.6 feet under most of the lake.

[1]Wetland Classification Codes:

WM = wetland mitigation
FW = farmed wetland
R2 = lower perennial riverine
R3 = upper perennial riverine
R4 = intermittent riverine

PUB = palustrine unconsolidated bottom
PFO = palustrine forested
PSS = palustrine scrub-shrub
PEM = palustrine emergent
POW = palustrine open water, unknown bottom

Wetland Characterization Sheet

Date(s) of field work: 1995, 9/10/99	Wetland Mapping Code: MCN - D
Data Sheet Numbers: 4-1	Size (acres): 3.1
Investigator(s): Scoles & Associates, J. Fromm	Wetland Classification(s): PSS- 1.09 acres, PEM-2.01 acres, R4
Verification Type: On-site by Scoles and Associates Oregon Det#96-0024, RF 10293	Land Use: Active gravel mine, pasture, low density residential

Location	Tax Lots(s):
Legal: T8S, R2W, Section 20	082W20 00400
Other: Located in flat, northwest Turner, east of Turner Rd. and west of ValView Dr.	082W20 00401
Hydrologic Basin: Mill Ck. North	082W20D 00300
Soil—Mapped Series: Hazelair silt loam, McAlpin silty clay loam, and Nekia silty clay loam	082W20DA00100
	082W20DA00300
Hydrologic Source: Surface water and precipitation	082W21B 03800
Floodplain: No	082W21B 04100
Water Quality: unknown	082W21B 04200

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs

Comments: Wetland MCN-D is located on the west side of the valley at Turner Gap. The wetlands are located on the flat terrace surface at the base of the forested slope. The wetland is composed of emergent (PEM), scrub-shrub (PSS), and an intermittent stream (R4) flowing out of the forested west facing Waldo Hills. The stream has been ditched and will be realigned around future Lake Turner, i.e. no connection to Lake but flows into Mill Creek. Southernmost PEM wetland type may drain into the lake. The nature of the surface water connection to Mill Creek is important because it may potentially provide fish habitat and Mill Creek is mapped as Anadromous Salmonid Habitat. For detailed information on vegetation, soils, and hydrology the removal-fill permit on file with the Division of State Lands should be consulted. File number is listed above. The forest surrounding the intermittent stream (R4) is surrounded by *Quercus garryana*, *Pseudotsuga menziesii*, and *Acer macrophyllum*.

[1]Wetland Classification Codes:

FW = farmed wetland
R2 = lower perennial riverine
R3 = upper perennial riverine
R4 = intermittent riverine
PUB = palustrine unconsolidated bottom
PFO = palustrine forested
PSS = palustrine scrub-shrub
PEM = palustrine emergent
POW = palustrine open water, unknown bottom

Wetland Characterization Sheet

Date(s) of field work: 8/10/99	Wetland Mapping Code: MCN - E
Data Sheet Numbers: 25-1, 25-2	Size (acres): 0.20
Investigator(s): J. Fromm	Wetland Classification(s): PSS
Verification Type: On-site	Land Use: public park

Location	Tax Lots(s):
Legal: T8S R2W Section 29 Other: Channel island in Mill Creek at Turner City Park Hydrologic Basin: Mill Creek North Soil—Mapped Series: Clackamas gravelly loam Hydrologic Source: Surface water Floodplain: Yes, Zone AE and floodway, Water Quality: 303(d) list for high bacteria levels	082W29B 01000

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
Fraxinus latifolia	*Cornus stolonifera*		*Glecoma hederacea*
	Physocarpus capitatus		*Epilobium ciliatum*
			Carex obnupta

Comments: This island in Mill creek is located directly west of Turner City Park and in the summer, during low water, can be accessed by wading across the stream. The upstream end of the island has a higher elevation and the soils are a coarser texture- gravel. The downstream end is lower and soils are silt loams. Most soils on the island were 10YR 3/2 with no redox features. Hydric soils (10YR 3/1) were observed in low-lying spots on the island and the lower banks adjacent to creek. Indicators of wetland hydrology were observed on the entire island: drift lines, water stains, sediment deposits, and drainage channels. The island is mostly forested though small, natural openings dominated by scrub-shrub vegetation occur and is a good reference site. The upstream end of the island is a forest composed of *Quercus garryana*, *Fraxinus latifolia*, and *Alnus rubra*, and the forest on the downstream end of the island is composed of *Fraxinus latifolia* and *Salix lasiandra*. Shrub layer included *Sambucus racemosa*, *Cornus stolonifera*, *Physocarpus capitatus*, *Amelanchier alnifolia*, *Symphoricarpos albus*, *Rhamnus purshiana*, and *Acer circinatum*. Ground cover was composed of *Phalaris arundinacea*, *Festuca arundinacea*, *Carex obnupta*, *Rubus lanciniatus*, *Rubus discolor*, and scattered *Rhus diversiloba*. The wetland area is confined to the immediate edge of the water and a few low-lying pockets on the downstream end of the island. The absence of *Symphoricarpos albus* and presence of *Carex obnupta* indicates the presence of hydric soils and the wetland area. Wetland vegetation and hydrology was more common on the island than hydric soils.

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[1]Wetland Classification Codes:

FW = farmed wetland
R2 = lower perennial riverine
R3 = upper perennial riverine
R4 = intermittent riverine
PUB = palustrine unconsolidated bottom
PFO = palustrine forested
PSS = palustrine scrub-shrub
PEM = palustrine emergent
POW = palustrine open water, unknown bottom

Wetland Characterization Sheet

Date(s) of field work: 8/18/99, 11/15/99	Wetland Mapping Code: MCC - A
Data Sheet Numbers: 44-8, 44-9, 45-2, 45-3, 45-4, 46-3, and 46-4	Length: 6,222 feet in length
Investigator(s): J. Fromm	Wetland Classification(s): R2
Verification Type: On-site	Land Use: Primarily lower and higher density residential with scattered commercial, industrial and public/semi-public uses.

Location	Tax Lots(s):
Legal: T 8S, R2W, Sec. 28 and 29	082W28C 00400
Other: Mill Ck. in west and central Turner, between southern boundary of Turner City Park and Turner Elementary School.	082W28CB01600
Hydrologic Basin: Mill Creek Central	082W29B 00300
Soil—Mapped Series: Sifton gravelly loam, not hydric; and Courtney gravelly silty clay loam, hydric.	082W29B 00400
Hydrologic Source: Surface water	082W29B 00500
Floodplain: Yes, Zone AE and floodway,	082W29B 00600
Water Quality: 303(d) list for high bacteria levels	082W29B 00800
	082W29B 00802
	(See Appendix E for additional tax lots)

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
SEE	RIPARIAN	AREA	INVENTORY

Comments: This reach of Mill Creek has been characterized and assessed in the riparian area inventory as reaches MCC-1.1R , MCC-1.2R, MCC-2R, MCC-3.1R, MCC-3.2R, and MCC-1L. This reach of Mill Creek begins on the far east side of its floodplain, cuts west across the floodplain, and bends sharply to the north at the far west side of the floodplain. This reach is most "disconnected" from its floodplain due to previous placement of fill in the older portions of Turner. The area adjacent to the creek is designated higher and lower density residential; and has some scattered commercial, industrial, and public/semi-public designations in the Comprehensive Plan. Much of the area is in a flood hazard zone with a 1% chance of annual flooding. The coarse textured soils (high gravel content) and fill limit the wetland area to the creek bed and lower banks. Wetland MCC-A is not assessed using OFWAM because it is a riverine (R2) wetland. See riparian inventory for reach assessment results. Mill Creek is mapped as Essential Indigenous Salmonid Habitat throughout Turner.

[1]Wetland Classification Codes:

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PSS = palustrine scrub-shrub
PEM = palustrine emergent
POW = palustrine open water, unknown bottom

Wetland Characterization Sheet

Date(s) off-site observation: 8/19/99	Wetland Mapping Code: MCC - B
Data Sheet Numbers: NA	Size (acres):
Investigator(s): J. Fromm	Wetland Classification(s): PFO/PSS, PFO, R4
Verification Type: Off-site	Land Use: Undeveloped, designated lower density residential

Location	Tax Lots(s):
Legal: T8S R2W Section 29	082W29B 00800
Other: Area is located immediately north and south of Delaney Rd. on east side of Mill Ck. near confluence with McKinney Creek.	082W29B 00900 082W29C 00300
Hydrologic Basin: Mill Creek Central	082W29C 00400
Soil—Mapped Series: Courtney gravelly silty clay loam	
Hydrologic Source: surface water	
Floodplain: Yes, Zone AE and floodway	
Water Quality: 303(d) list for high bacteria levels	

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
Alnus rubra	*Rosa pisocarpa*	*Solanum dulcamara*	*Phalaris arundinacea*
Salix lasiandra	*Cornus stolonifera*		
	Rubus discolor		
	Physocarpus capitatus		

Comments: Wetland MCC-B is composed of forested (PFO), forested/scrub-shrub (PFO/PSS), and intermittent riverine (R4) wetlands. The wetlands are located on the floodplain of Mill Creek in west Turner near the confluence of Turner and McKinney Creeks. The creek is on the far west side of the valley and the wetlands occur on undulating topography associated with overflow channels on the point bar side of the stream. The forested and intermittent riverine wetlands are located north of Delaney Rd. and the forested/scrub-shrub wetland is immediately south of the Delaney Rd crossing of Mill Ck. The riverine wetland passes through a box culvert under Delaney Rd. but recent earth moving on land south of Delaney Rd. has obscured the channel location. Fill and excavation have occurred both north and south of the road in this part of Turner. Most fill appears to have been placed on upland areas characterized by Oregon white oak forests.

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POW = palustrine open water, unknown bottom

Delin # 00 - 0147 shows upper terrace near this one is all upland.

map sheet 37

Wetland Characterization Sheet

Date(s) of field work: 9/15/99	Wetland Mapping Code: MCC - C
Data Sheet Numbers: 34-1	Size (acres): 14.66
Investigator(s): J. Fromm	Wetland Classification(s): PRB
Verification Type: Off-site	Land Use: Undeveloped, forested

Location	Tax Lots(s):
Legal: T8S, R2W, Sections 28 and 29 Other: Franzen Reservoir located on the west-facing slopes in central Turner. Hydrologic Basin: Mill Creek Central Soil—Mapped Series: Nekia silty clay loam, 12-20% slopes Hydrologic Source: Surface water (diverted from N. Santiam River near Stayton and piped to reservoir). Water in reservoir is not locally derived, but there is occasional contribution to the local system when reservoir is discharged to Mill Creek via an intermittent stream. Floodplain: No Water Quality: Meets drinking water standards.	082W29A 00100 082W29A 00700

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs

Comments: This reservoir is part of Salem's municipal water system which also provides water to Turner. The water is diverted from the North Santiam River near Stayton, purified in a slow sand filter on Geren Island, and piped to the reservoir. Reservoir was constructed in 1952 And holds 100,000 gallons. It is over 28 feet deep and water surface area is 14.66 acres. The water is chlorinated at Geren Island prior to transmission, via pipeline, to Salem. The side walls and base have an underlining of clay and a lining of asphaltic concrete, thus palustrine "rock bottom". An underdrain system and overflow pipe located on the southeast end of the reservoir periodically discharges water to an intermittent stream which flows south into Mill Creek. The city of Salem plans on relining the reservoir and placing a floating cap on the surface. There is no vegetation in the water or around the edges of the reservoir. The forest on the slopes around the wetland is composed of *Quercus garryana, Pseudotsuga menziesii, Prunus emarginata, Acer macrophyllum, Arbutus menziesii, Corylus cornuta, Symphoricarpos albus, Rubus discolor, Ilex aquifolium, Rhus diversiloba, Festuca arundinacea, Rubus lanciniatus,* and *Polystichum munitum.*

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PSS = palustrine scrub-shrub
PEM = palustrine emergent
POW = palustrine open water, unknown bottom

non-jurisdictional
not significant

Wetland Characterization Sheet

Date(s) of field work: 9/15/99	Wetland Mapping Code: MCC - D
Data Sheet Numbers: 29-1, 29-2, 35-1	Size (acres): 0.9
Investigator(s): J. Fromm	Wetland Classification(s): PUB
Verification Type: On-site	Land Use: Agriculture (grazing and Christmas tree farm) and forest

Location	Tax Lots(s):
Legal: T8S, R2W, Section 28	082W28B 00300
Other: East central Turner, about 1,600 feet west of intersection of Witzel Rd. and Combest Ln.	082W28B 00600
Hydrologic Basin: Mill Creek Central	
Soil—Mapped Series: Nekia silty clay loam, 2-7%, and 7-12 % slopes	
Hydrologic Source: Groundwater and precipitation	
Floodplain: No	
Water Quality: unknown	

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
			Algae

Comments: This wetland is located in the east central part of Turner which is dominated by the rolling topography of the Waldo Hills. The Waldo Hills are a fault bounded block underlain by Columbia River basalts. Basalts weathered into a characteristic reddish soil easily seen in the large new Christmas tree plantation located northwest of the pond. The pond was constructed from upland soils and receives flows from a spring and swale located to the north. Pond appeared to be unlined and was surrounded by an earthen berm with a small amount of riprap placed near the discharge area. The recharge area for the spring, and catchment area for the swale are small, because of proximity to the drainage divide. The pond appears to be sized to contain much of what it receives, even in the wettest parts of the year. Spring flow is piped to the pond. Outflow presently occurs as a spillway over the berm and the swale receiving the outflow has a narrow (2-3 feet wide), shallow (0.6-1.0 ft. deep) channel for about 60 feet before is spreads out into non-erosive sheet flow. Wetland was confined to the inundated area observed in August, though a very small (<<0.5 acres) wetland is located near the spring itself. Vegetation around the pond is highly impacted by grazing, which eliminated most vegetation and made it difficult to identify the few remaining grasses. Fish were observed in the pond. The lowest parts of the swales draining into, and out of, the pond were checked and found to not contain wetlands.

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PEM = palustrine emergent
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non-jurisdictional

not significant

Wetland Characterization Sheet

Date(s) of field work: 9/17/99	Wetland Mapping Code: MCC - E
Data Sheet Numbers: NA	Length (feet): 707
Investigator(s): J. Fromm	Wetland Classification(s): R4
Verification Type: Off-site	Land Use: Forest, semi-public lands

Location	Tax Lots(s):
Legal: T8S, R2W, Section 28 Other: Located in east central Turner east of Cedar Ln. Intermittent stream drains south facing slopes on Waldo Hills and discharges into Mill Creek near Turner Elementary School. Hydrologic Basin: Mill Creek Central Soil—Mapped Series: Nekia silty clay loam, 2-7% slopes; and Courtney gravelly silty clay loam Hydrologic Source: Surface water Floodplain: Yes, but limited to the confluence with Mill Creek which lies in Zone AE and floodway Water Quality: unknown	082W28C 00400 082W28CB00100 082W28CB01500

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs

Comments: This wetland is an intermittent stream located in the southeast central Turner. The stream drains the rolling hills (Waldo Hills) of eastern Turner, but the drainage basin is small. The forest surrounding the intermittent stream is composed of *Quercus garryana*, *Acer macrophyllum*, *Pseudotsuga menziesii*, *Oemleria cerasiformis*, *Corylus cornuta*, *Ilex aquifolium*, *Helix hedera*, *Carex deweyana*, *Polystichum munitum*, and *Rubus lanciniatus*. This stream periodically receives discharge from Franzen Reservoir, as was observed on the day of the field work when turbid water was flowing into Mill Creek. The reservoir discharge is piped underground to the intermittent stream where it is released into a concrete lined outfall. Erosion was not noted at the discharge point, but flows have caused severe downcutting further downstream. This erosion had been recently addressed by an extensive blanket of riprap placed upslope of confluence with Mill Creek.

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Wetland Characterization Sheet

Date(s) of field work: 9/17/99, 9/16/99	Wetland Mapping Code: MCS - A
Data Sheet Numbers: 46-1, 46-2, 52-6, 58-5 and 58-6	Length (feet): 5,902
Investigator(s): J. Fromm	Wetland Classification(s): R2
Verification Type: On-site	Land Use: Public/ semipublic (church facilities), high density residential, agriculture.

Location	Tax Lots(s):
Legal: T 8S, R2W, Sec. 28 , 29, and 33	082W28C 00400
Other: Mill Ck. in southeast Turner, between southern boundary of Turner Elementary School and Marion Rd. Bridge on south edge of study area.	082W28C 00900
	082W28C 01100
Hydrologic Basin: Mill Creek South	082W28CB01600
Soil—Mapped Series: Courtney gravelly silty clay loam, hydric.	082W28CB01700
Hydrologic Source: Surface water	082W33B 00600
Floodplain: Yes, Zone AE and floodway,	082W33BA00100
Water Quality: 303(d) list for high bacteria levels	(See Appendix E for additional tax lots)

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
SEE	RIPARIAN	AREA	INVENTORY

Comments: This riparian area along this reach of Mill Creek has been characterized and assessed in the riparian area inventory as reaches MCS-1R, MCS-2.1R, MCS-2.2R, MCS-2.3R, and MCS-1L. The area adjacent to the creek is designated high density residential and public/semi-public in the Comprehensive Plan. Two church meeting/convention facilities occupy lands along much of the right bank. Most of the area adjacent to creek is in the floodway or a flood hazard zone with a 1% chance of annual flooding. The coarse textured soils (high gravel content) limit the wetland area to the creek bed and lower banks. Berms have been constructed along much of the right bank of the creek and pedestrian paths are located on parts of the berm. Wetland MCS-A is not assessed using OFWAM because it is a riverine (R2) wetland. Mill Creek is mapped as Essential Indigenous Salmonid Habitat throughout Turner. Canopy closure over the creek varies, but an example of good closure is located on the downstream side of Mill Creek at the Marion Rd. bridge near Turner School.

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POW = palustrine open water, unknown bottom

Wetland Characterization Sheet

Date(s) of field work: 9/17/99	Wetland Mapping Code: MCS - B
Data Sheet Numbers: 47-1 and -2	Size (acres): 0.2
Investigator(s): J. Fromm	Wetland Classification(s): PFO
Verification Type: On-site	Land Use: Semi-public, church convention facilities and school

Location	Tax Lots(s):
Legal: T8S, R2W, Section28 Other: Located in southeast Turner about 400 feet north of Marion Rd. and 50 east of Mill Creek on church convention facilities. Hydrologic Basin: Mill Creek South Soil—Mapped Series: Courtney gravelly silty clay loam Hydrologic Source: Groundwater and surface water Floodplain: Yes, west end located in Zone AE Water Quality: Not known	082W28C 00400

Dominant Wetland Vegetation

Trees	Shrubs	Herbs	Herbs
Alnus rubra	*Fraxinus latifolia*	*Veronica americana*	*Polygonum hydropiperoides*
Fraxinus latifolia		*Juncus effusus*	*Juncus patens*
Quercus garryana		*Typha latifolia*	*Ranunculus repens*
		Lemna minor	*Bidens frondosa*
		Iris pseudacorus	*Athyrium filix-femina*
		Sparganium emersum	*Holcus lanatus*
		Oenanthe sarmentosa	*Solanum dulcamara*
		Leersia oryzoides	

Comments: This remnant wetland is located in a swale underlain by a hydric soil (Courtney gravelly silty clay loam) a the base of the Waldo Hills in east Turner. The low-lying area appears to be an older channel of Mill Creek. Most of the swale has been graded away or filled in on the site to accommodate structures or outdoor facilities. Fill and a road have been placed on the west end and water in the wetland is piped under the road. A water garden upslope of the wetland may contribute some water to the wetland. The wetland is an emergent wetland dominated by *Polygonum hydropiperoides*, *Veronica americana*, *Ranunculus repens* lying beneath a forested wetland dominated by *Fraxinus latifolia* and *Alnus rubra*. The species composition of the wetland is diverse and represents a unique natural resource that could be integrated into the existing water garden and grounds landscaping for aesthetic and educational benefits. Horses are presently pastured in the wetland's west end. The upland/wetland boundary is subtle and best indicated by topographic break, saturated soils, and the increasing presence of *Ranunculus occidentalis*. This part of the complex has camping and picnic facilities and sports fields, so the herb and shrub layer is routinely removed by mowing. Maintenance also removes drift left on the grounds from flooding, obscuring the presence of that hydrologic indicator.

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POW = palustrine open water, unknown bottom

Wetland Characterization Sheet

Date(s) of field work: 9/16/99	Wetland Mapping Code: MCS - C
Data Sheet Numbers: 52-3, 4, 5, & 6; 58-5 & 6	Size (acres): 2.51
Investigator(s): J. Fromm	Wetland Classification(s): PFO
Verification Type: On-site	Land Use: Semi-public church facilities

Location	Tax Lots(s):
Legal: T8S, R2W, Sections 28 and 29 Other: Southeast Turner on church facilities located south of Marion Rd and north of Mill Creek. Hydrologic Basin: Mill Creek South Soil—Mapped Series: Courtney gravelly silty clay loam, Clackamas gravelly loam Hydrologic Source: Surface water, precipitation Floodplain: Yes, floodway and Zone AE Water Quality: On 303(d) list for high bacteria levels	082W28C 01100

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
Populus balsamifera	*Physocarpus capitatus*		*Hypochaeris radicata*
Fraxinus latifolia	*Rubus discolor*		*Dipsacus sylvestris*
Salix lasiandra	*Symphoricarpos albus*		*Cynosurus echinatus*
Quercus garryana	*Oemleria cerasiformis*		*Phalaris arundinacea*
	Amelanchier alnifolia		
	Rosa nutkana		
	Crataegus douglasii		

Comments: This wetland is located on the mostly flat foodplain surface of Mill Creek. The wetland is located on a church compound with campsites, bunk houses, residences, main assembly building (also historically significant), RV hook-ups, maintained grounds, and a path on the berm located on the right bank of Mill Creek. The dike or berm is about 4-5 feet higher than the floodplain surface and about 20 feet wide at the base. Most of the site is lawn or lawn under an open forested composed of *Fraxinus latifolia*, *Quercus garryana*, and *Populus balsamifera*. The wetland is located in the low-lying area behind the dike. The dike may support wetland hydrology by impeding the return of flood overflows and precipitation to the creek, but the low-lying area may have been a natural feature. Soil is very gravelly throughout the site and only exhibited hydric indicators (10YR 3/1 gravelly silty clay loam) in low-lying area. Wetland hydrology indicators, drift lines and water marks, were common throughout the site and the wetland. Wetland vegetation was primarily a *Fraxinus latifolia* forest over a *Physocarpus capitatus* shrub layer. *Quercus garryana* becomes more common at the upland edge, and *Salix lasiandra* and *Populus balsamifera* occurs near the low-lying parts next to the creek. The upland wetland boundary is a best characterized by a topographic break and the dominance of *Physocarpus capitatus* in the understory.

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Wetland Characterization Sheet

Date(s) of field work: 11/17/99	Wetland Mapping Code: MCS - D
Data Sheet Numbers: 65-1 and 65-2	Size (acres): 4.04 total
Investigator(s): J. Fromm	Wetland Classification(s): PFO
Verification Type: On-site and off-site	Land Use: Rural residential

Location	Tax Lots(s):
Legal: T8S, R2W, Section 33	082W28C 00900
Other: Southeast Turner southwest of Marion Rd and along the north bank of Mill Creek.	082W33B 00600 082W33BA00100
Hydrologic Basin: Mill Creek South	082W33BA00400
Soil—Mapped Series: Courtney gravelly silty clay loam	082W33BA00700
Hydrologic Source: Surface water	082W33BA01700
Floodplain: Yes, floodway and Zone AE	082W33BA01900
Water Quality: 303(d) list for high bacteria levels	(See Appendix E for additional tax lots)

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
Fraxinus latifolia	*Crataegus douglasii*		*Phalaris arundinacea*
Populus balsamifera	*Rosa nutkana*		*Ranunculus occidentalis*
Salix lasiandra			*Festuca arundinacea*
Alnus rubra			*Cirsium arvense*
Crataegus douglasii			*Dipsacus sylvestris*

Comments: This wetland is located on the flat floodplain along Mill Creek in southeast Turner. The forested wetlands occur in the low-lying areas behind natural and artificial levees along Mill Creek. This portion of Mill Creek has been extensively altered and managed to drain flood flows and deliver irrigation water. The Santiam Water Control District built dikes along the creek where property owners were willing, but a continuous dike was not constructed because not all landowners participated. The creek has been straightened and channelized, but meanders and the associated cut banks and point bars are developing in the altered reaches. The trees in Plot 65-1 had seeded in ~~a grown-up~~ (the *Alnus rubra* had a diameter of 11") on a point bar that developed along the creek since the last time the creek was "cleaned". The forested wetlands occur in low-lying parts of the floodplain. The forest is dominated by *Fraxinus latifolia, Populus balsamifera, Alnus rubra* and *Salix lasiandra* over *Phalaris arundinacea* and *Ranunculus occidentalis.* Wetland hydrology was indicated by drift lines and water marks. Hydric soils were silt loams and loams with low chroma (10YR 3/1) and redoximorphic features. The wetland/upland boundary is best indicated in the filed by low topography and the presence of *Ranunculus occidentalis* and *Phalaris arundinacea.*

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POW = palustrine open water, unknown bottom

Wetland Characterization Sheet

Date(s) of field work: 9/16/99	Wetland Mapping Code: MCS - E
Data Sheet Numbers: 52-1 & 2; 53-1 &2	Length (feet): 5,206
Investigator(s): J. Fromm	Wetland Classification(s): PEM
Verification Type: On-site	Land Use: semi-public church facilities, public road ROW, residential

Location	Tax Lots(s):
Legal: T8S, R2W, Sections 28 and 33	082W28C 00400
Other: Southeast Turner along Marion Rd. and Witzel Rd.	082W28C 00900
Hydrologic Basin: Mill Creek South	082W28C 01000
Soil—Mapped Series: Courtney gravelly silty clay loam and Clackamas gravelly loam	082W28C 01100
	082W28CD01800
Hydrologic Source: Surface water	082W28CD02200
Floodplain: Yes, some ditch segments are located in Zone AE	082W33A 00200
Water Quality: Unknown	(See Appendix E for additional tax lots)

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
Alnus rubra	*Crataegus douglasii*	*Solanum dulcamara*	*Phalaris arundinacea*
Fraxinus latifolia	*Physocarpus capitatus*		*Typha latifolia*
			Dipsacus sylvestris

Comments: This linear wetland is located in ditches draining the flat floodplain of Mill Creek in southeast Turner. In this part of the Stayton Basin, numerous swales trend north and northwest towards the Turner Gap. The natural drainage network has been much altered by the Santiam Water Control District and roadside ditching, but many of these facilities were placed in the natural network or intercepted flow from the natural network. Wetland MCS-E are roadside ditches running along Marion Rd. and Witzel Rd. The Marion Rd. ditches are 5 feet deep and 8 feet wide, and appear to be sized to handle flood overflows from Mill Creek. The ditch along Witzel Rd. conveys drainage from the adjacent Waldo Hills to Mill Creek. Soils in this location are mainly non-hydric (Clackamas and Sifton gravelly loams) but the ditches were constructed through some hydric soil (Courtney gravelly silty clay loam) on the west end and at the intersection of Witzel and Marion Roads. The emergent wetland is confined to the bottom of the ditches and is dominated by *Phalaris arundinacea*. *Typha latifolia*, *Alnus rubra*, *Fraxinus latifolia*, *Physocarpus capitatus* occur in places. Wetland soils were low chroma (10YR 4/1) gravelly silty clay loams and wetland hydrology was indicted by drainage patterns, drift lines, saturated soils. On the west end where the ditch flows into the creek, some backwater flooding from the creek also contributes to wetland hydrology. The upland wetland boundary is clearly marked by distinct breaks in topography and the presence of *Phalaris arundinacea* and *Typha latifolia*, though the ditch is mowed in some places. Assessment of the function and value of this linear wetland is found in riparian area inventory for MCS-2.2B R, MCS-2.2B L, MCS-2.2C R, and MCS-2.2 C L.

probably only carried flood flows

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PSS = palustrine scrub-shrub
PEM = palustrine emergent
POW = palustrine open water, unknown bottom

parts may be non-jurisdictional

Wetland Characterization Sheet

Date(s) of field work: 11/19/99	Wetland Mapping Code: MCS - F
Data Sheet Numbers: 47-3; 48-1, 2, & 3; 53-3 & 4; 54-1 & 2	Size (acres): 1.34
Investigator(s): J. Fromm	Wetland Classification(s): PFO
Verification Type: On-site	Land Use: Residential, agriculture

Location	Tax Lots(s):
Legal: T8S, R2W, Section 28	082W28C 00800
Other: Southeast Turner located east of Witzel Rd. and north of Marion Rd.	082W28CD00100 082W28CD00300
Hydrologic Basin: Mill Creek South	082W28D 02300
Soil—Mapped Series: Courtney gravelly silty clay loam, Clackamas gravelly loam	
Hydrologic Source: Precipitation	
Floodplain: No	
Water Quality: Unknown	

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
Fraxinus latifolia	*Rosa nutkana*		*Ranunculus occidentalis*
Quercus garryana	*Rubus discolor*		*Agrostis stolonifera*
Crataegus douglasii	*Spirea douglasii*		*Festuca arundinacea*
	Symphoricarpos albus		*Polystichum munitum*
	Corylus cornuta		*Prunella vulgaris*
	Pseudotsuga menziesii		*Juncus patens*
	Prunus emarginata		*Camassia leichtlinii*
	Rhamnus purshiana		*Rubus lanciniatus*
	Rubus lanciniatus		

Comments: This forested wetland is located in southeast Turner east of Witzel Rd. and North of Marion Rd. where the footslopes of Waldo Hills meet the terrace along Mill Creek. A swale underlain by hydric soil runs east to west in this location and is occupied by a *Fraxinus latifolia* forest intermixed with *Quercus garryana*. Open pasture is located north and south of the forested swale. *Quercus garryana* occurs on relatively high portions within the forested swale and *Fraxinus latifolia* occurs on relatively low portions of the swale. The forested wetland (#48-2) was located in relatively low-lying areas of the forested swale. The plant community was dominated by *Fraxinus latifolia*, *Rosa nutkana*, *Ranunculus occidentalis*; and the shrub and herb layer was limited by canopy closure in the tree stratum. Hydric soils were low chroma (10YR 3/1) with redox features, and the texture was silty clay loam, much finer than the mapped soil type (gravelly silty clay loam). Wetland hydrology indicators were water marks and drainage features. The wetland is almost a mesic forest, and the upland wetland boundary is a wide transitional zone and best identified in the field by a dominantly *Fraxinus latifolia* forest in relatively low topography where *Ranunculus occidentalis* is common in the forb layer. The pasture areas lacked hydric soils and were dominated by *Festuca arundinacea.*

[1]Wetland Classification Codes:

FW = farmed wetland
R2 = lower perennial riverine
R3 = upper perennial riverine
R4 = intermittent riverine
PUB = palustrine unconsolidated bottom
PFO = palustrine forested
PSS = palustrine scrub-shrub
PEM = palustrine emergent
POW = palustrine open water, unknown bottom

Wetland Characterization Sheet

Date(s) of field work: 9/3/99	Wetland Mapping Code: PL - A
Data Sheet Numbers: 44-1 and 2; 51-1,2,3, & 4; 57-5 & 6.	Length (feet): 2,675 (~1/2 mile)
Investigator(s): J. Fromm	Wetland Classification(s): R2
Verification Type: On-site	Land Use: Undeveloped and industrial, limited residential use.

Location	Tax Lots(s):
Legal: T 8S, R2W, Sec. 29	082W29C 00200
Other: Turner Bypass in central Turner, between inflow and outflow points with Mill Creek.	082W29C 00400
	082W29C 01000
Hydrologic Basin: Perrin Lateral = Turner Bypass	082W29DC00100
Soil—Mapped Series: Courtney gravelly silty clay loam	082W29DC00101
Hydrologic Source: Surface water	082W29DC01200
Floodplain: Yes, Zone AE and floodway,	082W29DC01300
Water Quality: 303(d) list for high bacteria levels	(See Appendix E for additional tax lots)

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
SEE	RIPARIAN	AREA	INVENTORY

Comments: See results of riparian area inventory for PL-2R and PL2-L for information on vegetation and ecological function and value assessment results. The riverine wetland (R2) in Turner Bypass was primarily confined to channel and lowest portions of bank. Land along Turner Bypass is designated mainly for industrial use and some lower density residential on the west end. Mill Creek is mapped as Essential Indigenous Salmonid Habitat throughout Turner and Turner Bypass has a free and open connection at the discharge end near Wipper Rd. Bridge.

therefore the ditch is also ESH and jurisdictional

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PEM = palustrine emergent
POW = palustrine open water, unknown bottom

Wetland Characterization Sheet

Date(s) of field work: 9/3/99	Wetland Mapping Code: PL - B
Data Sheet Numbers: 44-1	Size (acres): 1.09
Investigator(s): J. Fromm	Wetland Classification(s): PFO
Verification Type: On-site	Land Use: Undeveloped, used for pasture, grass seed, and rural residential.

Location	Tax Lots(s):
Legal: T8S, R2W, Section 29 Other: West Turner near where Turner Bypass flows into Mill Creek, due west of intersection of Birch and 6th Streets. Hydrologic Basin: Perrin Lateral<Mill Creek Soil—Mapped Series: Courtney gravelly silty clay loam Hydrologic Source: Surface water and precipitation Floodplain: Yes, Zone AE and floodway Water Quality: 303(d) list for high bacteria.	082W29C 00200 082W29C 00400 082W29C 01000

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
Fraxinus latifolia	*Physocarpus capitatus*		
Salix lasiandra	*Symphoricarpos albus*		
	Rosa gymnocarpa		
	Rubus discolor		
	Rosa nutkana		
	Crataegus douglasii		

Comments: The wetland is in the floodplain near the confluence of Mill Ck. and Turner Bypass in west Turner where diverted flows return to the creek. Topography is flat with very shallow swales. A berm, or spoils from cleaning the Bypass, create a higher levee along parts of the Bypass. The levee probably causes some ponding of sheet slow and disconnection of surface water from floodplain. A surface water connection between the wetland and creek exists near the north end of the forest where the low berm has been eroded away. Much of the existing *Fraxinus latifolia* forest is in a broad transitional area between wetland and upland, where typically two, but not three, wetland parameters were met. The wetland is distinguished by an *Fraxinus latifolia* forest over a *Physocarpus capitatus* shrub layer (#44-6) with low chroma soils, and drift lines and water marks. *Populus balsamifera* was noted along the water's edge and a very large cottonwood occurred in Plot #44-3. Oregon white oak is located on higher portions of the site (#44-7). The closed forest canopy have reduced the extent and diversity of the groundcover. The upland wetland boundary is characterized by subtle topographic lows, finer-textured soils, and the occurrence of *Physocarpus capitatus* and *Crataegus douglasii*

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Wetland Characterization Sheet

Date(s) of off-site observations: 9/7/99	Wetland Mapping Code: PL - C
Data Sheet Numbers: NA	Size (acres): 0.54
Investigator(s): J. Fromm	Wetland Classification(s): PFO/PSS
Verification Type: Off-site	Land Use: Grass seed production

Location	Tax Lots(s):
Legal: T8S, R2W, Section 29	082W29DC01200
Other: West Turner directly south of 6th St. on the south side of Turner Bypass.	082W29DC01400
Hydrologic Basin: Perrin Lateral>Mill Creek	082W29DC01500
Soil—Mapped Series: Courtney gravelly silty clay loam	082W29DC01600
Hydrologic Source: Surface water	
Floodplain: Yes, Zone AE and floodway	
Water Quality: 303(d) list for high bacteria levels	

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
Fraxinus latifolia	*Salix lasiandra*		*Carex obnupta*
Populus balsamifera	*Crataegus douglasii*		*Juncus patens*
Alnus rubra	*Rhamnus purshiana*		
	Rosa nutkana		

Comments: Located in southwest Turner on the floodplain of Mill Creek/Turner Bypass. Topographic map shows a north-south trending natural swale connecting to Bypass in this location . The wetland is located in the low-lying area adjacent to bypass. Off-site observations were made form Wipper Rd. These observations made off-site from Wipper Rd. were compared to on-site observations made at areas west of the Perrin Lateral Canal with similar topography and soils (#57-9 and #58-8).

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Wetland Characterization Sheet

Date(s) of field work: 7/30/99, 8/2/99, 11/17/99	Wetland Mapping Code: PL - D
Data Sheet Numbers: 62-1; 68-1, 2, 3, 4, and 5; and 69-1, 2, and 3	Size (acres): 1.74
Investigator(s): J. Fromm	Wetland Classification(s): FW- 0.85 acres, PFO- 0.89 acres, R3, R4
Verification Type: On-site and Off-site	Land Use: Agriculture

Location	Tax Lots(s):
Legal: T8S, R2W, Sections 29 and 32	082W29DC02700
Other: Southwest Turner between Wipper Rd. and RR tracks.	082W32A 00500
Hydrologic Basin: Perrin Lateral > Mill Creek	082W32A 00900
Soil—Mapped Series: Courtney gravelly silty clay loam	082W32A 01000
Hydrologic Source: Precipitation for PFO and FW, surface water for R3 and R4	
Floodplain: Yes, on north end of drainageway near Turner Bypass (R3), FW and PFO located outside floodplain.	
Water Quality: Unknown	

Dominant Wetland Vegetation

Trees	Shrubs	Herbs	Herbs
Fraxinus latifolia	*Rosa nutkana*	*Juncus patens*	*Holcus lanatus*
	Crataegus douglasii	*Dipsacus sylvestris*	*Galium aparine*
	Spirea douglasii	*Lemna minor*	*Agrostis stolonifera*
	Rhamnus purshiana	*Solanum dulcamara*	*Geum macrophyllum*
	Rubus discolor	*Carex obnupta*	*Epilobium ciliatum*
	Symphoricarpos albus	*Echinochloa crusgalli*	*Camassia leichtlinii*
	Rosa eglanteria	*Plantago major*	*Rumex crispus*
	Salix lasiandra	*Juncus effusus*	*Phleum pratense*
		Tall fescue	*Phalaris arundinacea*

Comments: This wetland complex is located mainly in the terrace adjacent to the Mill Creek/Turner Bypass floodplain in southwest Turner between the RR and Wipper Rd. Most of the land is in agricultural use (grass seed production) with rural residences. The land is designated for industrial use in the Turner Comprehensive Plan. The area, northern edge of the Stayton Basin, is underlain by alluvial fan deposits from the North Santiam River and was laced with numerous natural perennial and intermittent waterways. Waterways trended north to flow through Turner Gap. The location and flow characteristics of natural waterways have been altered over time to reduce flooding, provide summer irrigation water, and provide drainage. This wetland complex drains to a waterway (R4 wetland) running on the east side of Wipper Rd. which discharges into Turner Bypass. The R4 wetland component is described and evaluated in the riparian area inventory as PL-2C R and PL-2C L. Topographic and soil maps indicate a natural swale located slightly to the east of the existing roadside waterway. Other components of the wetland complex include a palustrine forested wetland dominated by *Fraxinus latifolia*, and farmed wetland on the southern end of the area. The Oregon ash forest (#68-1) is located in a topographic low near the previous location of the roadside waterway. The extent of the farmed wetland was also evaluated using NRCS slides (see Appendix (?)) The farmed wetland areas were characterized by reduced stocking, or no, of grass seed plants and the presence of *Polygonum hydropiperoides*, *Echinochloa crusgalli*, and *Plantago major*. The OFWAM assessment covers the PFO and FW components of this complex.

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PSS = palustrine scrub-shrub
PEM = palustrine emergent
PRB = palustrine rock bottom

Wetland Characterization Sheet

Date(s) of field work: 11/15/99	Wetland Mapping Code: PL - E
Data Sheet Numbers: 57-4 & 7; 69-4, 5, 6, & 7.	Size (acres): 2.45
Investigator(s): J. Fromm	Wetland Classification(s): PEM (linear), PFO- 2.45 acres
Verification Type: On-site	Land Use: Agriculture, undeveloped, designated for industrial

Location	Tax Lots(s):
Legal: T8S, R2W, Sections 29 and 32	082W29DC00100
Other: South Turner on the east side of the RR tracks between Turner Bypass and south end of study boundary.	082W29DC02800 082W29A 00200
Hydrologic Basin: Perrin Lateral>Mill Creek	082W29A 00300
Soil—Mapped Series: Courtney gravelly silty clay loam, mostly Clackamas and Sifton gravelly loams	082W29A 00400
Hydrologic Source: Surface water for PEM, precipitation for PFO	
Floodplain: Yes. Northern third of complex is located in floodway, Zone AE, Zone X.	
Water Quality: Unknown	

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
Populus balsamifera	*Populus balsamifera*		*Carex obnupta*
	Fraxinus latifolia		*Juncus effusus*
	Spirea douglasii		*Holcus lanatus*
	Salix lasiandra		*Phalaris arundinacea*
	Rosa pisocarpa		*Juncus patens*
	Crataegus douglasii		*Carex unilateralis*
	Rosa nutkana		*Carex pachystachya*

Comments: This wetland is located mainly in the terrace/alluvial fan south of the Mill Creek/Turner Bypass floodplain in southwest Turner. Wetland is located between the RR and the old Perrin Lateral Canal. Most of the land has been in agricultural use (grass seed production) but does not appear to be actively managed at present. The land is designated for industrial use in the Turner Comprehensive Plan. This area is located on the northern edge of the Stayton Basin, is underlain by alluvial fan deposits from the North Santiam River and was laced with numerous natural perennial and intermittent waterways, trending north to flow through Turner Gap. The location and flow characteristics of natural waterways have been altered over time to reduce flooding, provide summer irrigation water, and provide drainage. Fields have been terraced and ditched and there were notable differences in surface elevation between the fields. This wetland is composed of a linear, palustrine emergent wetland in a ditch running on the east side of the railroad berm and adjacent patches of forested wetland (PFO) in low-lying areas. The ditch discharges into Turner Bypass on the north end. Topographic and soil maps indicate that this area was the crest of a low ridge between two drainage areas and the ditch does not appear to have replaced a natural drainage. The PEM wetland is described and evaluated in the riparian area inventory as PL-2B R and PL-2B L. The palustrine forested wetland dominated by *Populus balsamifera* (#57-4 and -7 and #69-5). The upland area adjacent to the ditch and black cottonwood forested swales lacked hydrophytic vegetation and clear hydrologic indicators (#69-4, -6, and 7), but hydric soils were seen in November. Vegetation in the open areas included *Rubus discolor*, *Crataegus douglasii*, *Festuca arundinacea*, *Holcus lanatus*, *Phleum pratense*, *Lolium perenne*, *Cirsium vulgare*, and *Daucus carota*. Best indicators of upland-wetland boundary were relatively low lying areas where *Populus balsamifera*, *Carex obnupta*, and *Juncus* species occurred. OFWAM results apply to PFO wetland component.

ditch is jurisdictional where it is adjacent to other wetland.

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PSS = palustrine scrub-shrub
PEM = palustrine emergent
POW = palustrine open water, unknown bottom

Wetland Characterization Sheet

Date(s) of field work: 11/15/99	Wetland Mapping Code: PL - F
Data Sheet Numbers: 57-1, 2, 3, 8, & 9; 58-1, 2, 3, 4, & 5; 63-1, 2, & 3; 64-1, 2, 3, & 4; 69-8; 70-1, 2, 3, 4, & 5.	Size (acres): 15.68
Investigator(s): J. Fromm	Wetland Classification(s): R4, PEM- 2.5 acres, PFO- 3.58 acres, PSS- 1.6 acres, PFO/PSS- 8.00 acres
Verification Type: On-site	Land Use: Agriculture, undeveloped

Location	Tax Lots(s):
Legal: T8S, R2W, Sections 29 and 32 Other: South Turner between RR tracks and 55th Ave. between Turner Bypass and south end of study boundary. Wetland complex surrounds the old location of Perrin Lateral Canal. Hydrologic Basin: Perrin Lateral>Mill Creek Soil—Mapped Series: Courtney gravelly silty clay loam and Clackamas gravelly loam Hydrologic Source: Surface water and precipitation Floodplain: Yes, Zone AE, Zone X, and floodway on northern third of complex Water Quality: Unknown	082W32A 00100 082W32A 00300 082W32A 00400

Dominant Wetland Vegetation

Trees	Shrubs	Herbs	Herbs
Fraxinus latifolia	*Rosa nutkana*	*Holcus lanatus*	*Euonymus occidentalis*
Populus balsamifera	*Spirea douglasii*	*Carex obnupta*	*Juncus patens*
Rhamnus purshiana	*Salix lasiandra*	*Phleum pratense*	*Aloepecurus pratensis*
Crataegus douglasii	*Fraxinus latifolia*	*Camassia leichtlinii*	*Phalaris arundinacea*
Salix lasiandra	*Crataegus douglasii*	*Eleocharis palustris*	
	Rhamnus purshiana	*Juncus acuminatus*	
	Cornus stolonifera	*Juncus bufonius*	
	Rosa pisocarpa	*Mentha arvensis*	
	Rubus discolor	*Agrostis stolonifera*	
	Physocarpus capitatus	*Ranunculus occidentalis*	

Comments: This wetland complex is located in southeast Turner on the floodplain and adjacent terrace surface south of the Mill Creek/Turner Bypass between the 55th Ave and the RR tracks. Most of the land has been in agricultural use but was not in production agriculture during the 1999 field season. The land is designated for industrial use in the Turner Comprehensive Plan. This area is located on the northern edge of the Stayton Basin, is underlain by alluvial fan deposits from the North Santiam River and was laced with numerous natural perennial and intermittent waterways. Waterways trended north to flow through Turner Gap. The location and flow characteristics of natural waterways have been altered over time to reduce flooding, provide summer irrigation water, and provide drainage. This wetland complex is centered around a waterway (R4 wetland) running about midway between 55th Ave and the RR track which discharges into Turner Bypass. The waterway is the old location of the Perrin Lateral Canal but surface water flow has been diverted to the canal immediately west of 55th Ave. Trees and shrubs have grown up around the abandoned canal. Topographic and soil maps indicate a natural swale was located here. The R4 wetland component is described and evaluated in the riparian area inventory as PL-2A R & L. Other components of the wetland complex include palustrine emergent (PEM), palustrine scrub-shrub (PSS), palustrine forest (PFO), and palustrine forest/scrub-shrub (PFO/PSS) wetlands. Past grading and ditching activities on the west side of the old canal have attempted to level, terrace, and

drain the area. Relatively undisturbed emergent and scrub shrub wetlands, diverse in terms of species composition and structure, are located in these areas. The largest single PEM component is located on the south end of the study area and was underlain by gleyed hydric soils and dominated by *Holcus lanatus* and *Phleum pratense* (#70-1 and -4). A field visit to this wetland element in the early spring would doubtless show a more diverse herb community than what was observed in November. Emergent wetlands elsewhere in the complex are dominated by *Juncus patens*, with lesser amounts of *Juncus effusus* and *Holcus lanatus*, which shows up as a characteristic darker green on color aerial photos (#63-3 and 58-3). Most of the complex is forested/scrub-shrub wetland dominated by *Fraxinus latifolia*, *Crataegus douglasii*, and *Populus balsamifera* (#57-1; #58-3; #69-8; #64-1and -3). Linear and patchy clumps of scrub-shrub wetland occur along the ditches and between the forest and meadow wetlands. The scrub-shrub wetlands are dominated by *Rosa nutkana, Salix lasiandra, Crataegus douglasii,* and *Spirea douglasii* (#70-3 and -5; #63-2; and #63-4). Forested wetlands are located on the south and north parts of the complex and are dominated by *Fraxinus latifolia, Populus trichocarpa* and *Salix lasiandra* (#70-2; #57-2; and #57-8 and -9).

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Wetland Characterization Sheet

Date(s) of off-site observation: 11/15/99	Wetland Mapping Code: PL - G
Data Sheet Numbers: NA	Length (feet): 2,791
Investigator(s): J. Fromm	Wetland Classification(s): R3
Verification Type: On-site	Land Use: Agriculture, undeveloped

Location	Tax Lots(s):
Legal: T8S, R2W, Section 32 Other: This wetland is the Perrin Lateral Canal running along the west side of 55th Avenue and flowing into Turner Bypass/Mill Creek. Hydrologic Basin: Perrin Lateral>Mill Creek Soil—Mapped Series: Courtney gravelly silty clay loam, Clackamas gravelly loam Hydrologic Source: Surface water Floodplain: Yes, Zone AE on north end Water Quality: Unknown	082W32A 00100 082W33B 00200 082W33B 00300

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
SEE	RIPARIAN	AREA	ASSESSMENT

Comments: This linear wetland is located mainly on the terrace surface adjacent to the Mill Creek/Turner Bypass floodplain in southeast Turner immediately west of 55th Ave. Most of the land is in agricultural use (grass seed production) with rural residences. The field west of the canal weren't actively managed for grass seed production in 1999. The land is designated for industrial use in the Turner Comprehensive Plan. The area, northern edge of the Stayton Basin, is underlain by alluvial fan deposits from the North Santiam River and was laced with numerous natural perennial and intermittent waterways. Waterways trended north to flow through Turner Gap. The location and flow characteristics of natural waterways have been altered over time to reduce flooding, provide summer irrigation water, and provide drainage. Flowing water was observed in Wetland PL-G on every field visit made from January through November in 1999. The channel is underlain by unvegetated, clean gravels. This location of the Perrin Lateral Canal is new, and the old canal location is about 300-400 feet to the west. See results of riparian area inventory for PL-1R and PL1-L for information on vegetation and assessment results.

perennial stream/ditch

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PEM = palustrine emergent
POW = palustrine open water, unknown bottom

free + open connection? yes → if so, jurisdictional

Wetland Characterization Sheet

Date(s) of field work: 11/15/99	Wetland Mapping Code: PL - H
Data Sheet Numbers: NA	Length (feet):
Investigator(s): J. Fromm	Wetland Classification(s): PEM
Verification Type: Off-site	Land Use: Agriculture

Location	Tax Lots(s):
Legal: T8S, R2W, Section 32 Other: Southeast Turner on east side of 55th Ave. near the road crossing of Turner Bypass. Hydrologic Basin: Perrin Lateral>Mill Creek Soil—Mapped Series: Courtney gravelly silty clay loam Hydrologic Source: Surface water Floodplain: Yes, Floodway and Zone AE Water Quality: Unknown	082W33B 00300

Dominant Wetland Vegetation

Trees	Shrubs	Vines	Herbs
Populus balsamifera	*Salix lasiandra*		*Holcus lanatus*
	Rosa nutkana		*Phalaris arundinacea*
	Crataegus douglasii		*Juncus effusus*

Comments: This linear wetland is located mainly in the floodplain adjacent to the Mill Creek/Turner Bypass floodplain in southeast Turner. This wetland is composed of two ditch segments on the east side of 55th Ave, near where the road crosses the Turner Bypass via several culverts.

Airphoto suggests these are remnants of larger wetlands → jurisdictional.

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Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Local Wetland Inventory	Wetland: MCN - B
Project Location: Turner, Oregon	Wetland Type(s): PSS, PFO
Date: 8-9-99, 8-10-99	Approx. Area (acres): 1.76
Verification Type: On-site	Investigator(s): J. Fromm
Wetland location: Northwest Turner near the RR bridge and Mill Creek, and west of the RR [illegible]	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control			
Question	Answer	Question	Answer	Question	Answer	Question	Answer		
1	a	1	a	1	a	1	a		
2	a	2	a	2	a	2	a		
3	c	3	b	3	a	3	b		
4	c	4	a	4	b	4	c		
5	a	5	c	5	a	5	a		
6	a[1]	6	a	6	a	6	b	6	a
7	a					7	a	7	a
8	c							* water is diverted into Mill Ck. from	
9	a							N. Santiam River	

Results:

Wildlife Habitat	*Diverse* 1. Surface water connection exists only during high flows in Mill Creek.
Fish Habitat	*Intact*
Water Quality	*Intact*
Hydrologic Control	*Intact*
Sensitivity to Impact	*Potentially sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	NA	1	c	1	b	1	b
2	a	2	b	2	a	2	b
3	a	3	a	3	c	3	c
4	b	4	c	4	a	4	a
5	a	5	b	5	a	5	a
6	b	6	b	6	b	6	b

Results:

Enhancement Potential	NA- The ecological functions and conditions of this wetland are already high
Education	Not appropriate
Recreation	provides recreational opportunities (passive via boat on Mill Creek)
Aesthetic Quality	Moderately pleasing (primary viewing area is from a canoe on creek)

OFWAM Summaries

Turner Local Wetland Inventory Wetland MCN-B

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**		
Yes	**No**	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")
B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**		
Yes	**No**	
X		Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: ▪ *Diverse* wildlife habitat, ▪ *Intact* fish habitat, ▪ *Intact* water quality, or ▪ *Intact* hydrologic control.
		Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
	X	Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Local Wetland Inventory	Wetland: MCN - C
Project Location: Turner, Oregon	Wetland Type(s): WM (PFO, PSS, PEM, LUB)
Date: 1995-96	Approx. Area (acres): 85.7
Verification Type: Onsite, wetland delineation and RF permit #10293	Investigator(s): Scoles and Associates
Wetland location: Located in northwest Turner, east of Turner Rd. and west of ValView Dr. **Note: The OFWAM assessment is based on the approved wetland mitigation and mining reclamation plan.**	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat (Lake)		Water Quality		Hydrologic Control		Sensitivity to Impact	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	a	1	c	1	a	1	a
2	b	2	c	2	a	2	a	2	b
3	b	3	a[1]	3	c	3	a	3	a
4	a	4	a	4	a	4	a	4	a
5	a?	5	c	5	a	5	b	5	a
6	a?	6	?	6	a	6	a	6	c
7	a					7	a		
8	c								
9	a								

Results:

Wildlife Habitat	*Diverse*
Fish Habitat	*Impacted* 1 The lake is about 6,200 feet long in the north-south direction, far exceeding the shade provided by the upland forest buffer on south margin.
Water Quality	*Impacted*
Hydrologic Control	*Intact*
Sensitivity to Impact	*Potentially sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	c[1]	1	b	1	a
2	b	2	a	2	b	2	a
3	NA	3	b	3	c	3	a
4	a	4	c	4	a	4	b
5	a	5	b	5	b	5	a
6	b	6	b	6	b	6	b

Results:

Enhancement Potential	*High*
Education	*Not appropriate* 1 The wetland is surrounded by a berm that makes observation of the lake difficult from roadways in Turner. Views from higher portions of Turner possible.
Recreation	*Has potential*
Aesthetic Quality	*Pleasing*

Turner Local Wetland Inventory Wetland MCN-C

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**		
Yes	**No**	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")
B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**		
Yes	**No**	
X		Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: ▪ ***Diverse* wildlife habitat,** *Intact* fish habitat, *Intact* water quality, or ▪ ***Intact* hydrologic control.**
X		Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
	X	Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Local Wetland Inventory	Wetland: MCN - D
Project Location: Turner, Oregon	Wetland Type(s): PSS, PEM, R4
Date: 9/10/99	Approx. Area (acres): 3.1
Verification Type: On-site and off-site	Investigator(s): J. Fromm, Scoles & Associates
Wetland location: Located in flat, northwest Turner, east of Turner Rd. and west of ValView Dr.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat (Stream)		Water Quality		Hydrologic Control		Sensitivity to Impact	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	b	1	a	1	b	1	a
2	c	2	c	2	a	2	a	2	b
3	b	3	b	3	b	3	b	3	c
4	NA	4	c a	4	b	4	b	4	b
5	a	5	b	5	b	5	b	5	a
6	a	6	b? ✓	6	c	6	a	6	b
7	c					7	a		
8	b								
9	b		med						

Results:

Wildlife Habitat	*Provides some habitat*
Fish Habitat	*Impacted*
Water Quality	*Impacted*
Hydrologic Control	*Impacted*
Sensitivity to Impact	*Potentially sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	c	1	c	1	NA
2	a	2	a	2	c	2	c
3	a	3	b	3	c	3	NA
4	b	4	c	4	b	4	b
5	b	5	c	5	b	5	a
6	b	6	b	6	b	6	a

Results:

Enhancement Potential	*High*
Education	*Not appropriate*
Recreation	*Not appropriate*
Aesthetic Quality	*Moderately pleasing* (This wetland has almost no visibility from road and can be seen only by landowner)

Turner Local Wetland Inventory Wetland MCN-D

Locally Significant Wetland Criteria Checklist

A. "OUT" Test Wetlands that score "yes" in any of the following categories do NOT proceed to Section B		
Yes	**No**	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")
B. "IN" Test Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS		
Yes	**No**	
	X	Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: *Diverse* wildlife habitat, *Intact* fish habitat, *Intact* water quality, or *Intact* hydrologic control.
	X	Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
X?		Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids." Mostly ditch, Connection unlikely
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

* Significance should be re-evaluated if connection to Mill Cr. confirmed + ditch reach is enhanced to provide seasonal fish habitat.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Local Wetland Inventory	Wetland: MCN - E
Project Location: Turner, Oregon	Wetland Type(s): PSS
Date: 8/10/99	Approx. Area (acres): 0.20
Verification Type: On-site	Investigator(s): J. Fromm
Wetland location: Downstream end of channel island in Mill Creek at Turner City Park.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat (Streams)		Water Quality		Hydrologic Control		Sensitivity to Impact	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	b	1	b	1	a	1	a	1	a
2	a	2	b	2	a	2	a	2	b
3	a	3	b	3	a	3	c	3	a
4	NA	4	a	4	c	4	c	4	c
5	a	5	a	5	c	5	a	5	c
6	a	6	a	6	a	6	c	6	a
7	a					7	a		
8	a								
9	a								

Results:

Wildlife Habitat	*Diverse*
Fish Habitat	*Intact*
Water Quality	*Intact*
Hydrologic Control	*Intact*
Sensitivity to Impact	*Potentially sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	NA	1	a	1	a	1	b
2	a	2	a	2	a	2	a
3	a	3	a	3	a	3	a
4	c	4	a	4	a	4	a
5	a	5	a	5	a	5	a
6	b	6	b	6	b	6	a

Results:

Enhancement Potential	*NA, high values and conditions already associated with wetland*
Education	*Has uses*
Recreation	*Provides opportunities*
Aesthetic Quality	*Pleasing*

Turner Local Wetland Inventory Wetland MCN-E

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**		
Yes	**No**	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")
B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**		
Yes	**No**	
X		Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: **X *Diverse* wildlife habitat,** **X *Intact* fish habitat,** **X *Intact* water quality, or** **X *Intact* hydrologic control.**
	X	Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
	X	Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Local Wetland Inventory	Wetland: **MCC - B**
Project Location: Turner, Oregon	Wetland Type(s): PFO, PFO-PSS, R4
Date: 8/19/99	Approx. Area (acres):
Verification Type: Off-site	Investigator(s): J. Fromm
Wetland location: Area is located directly north and south of Delaney Rd. on east side of Mill Ck. near confluence with McKinney Creek.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		**Fish Habitat (Stream)**		**Water Quality**		**Hydrologic Control**		**Sensitivity to Impact**	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	c	1	a	1	a	1	a
2	a	2	a	2	a	2	a	2	b
3	b	3	b	3	a	3	b	3	a
4	NA	4	a	4	b	4	c	4	c
5	a	5	a	5	c	5	a	5	a
6	a	6	a	6	a	6	a	6	a
7	a					7	a		
8	a or c								
9	a								

Results:

Wildlife Habitat	*Diverse*
Fish Habitat	*Intact*
Water Quality	*Intact*
Hydrologic Control	*Intact*
Sensitivity to Impact	*Potentially sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		**Education**		**Recreation**		**Aesthetic Quality**	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1		1	a	1	a	1	a
2		2	b	2	a	2	a
3		3	a	3	b	3	a
4		4	b	4	a	4	b
5		5	b	5	a	5	a
6		6	b	6	b	6	a

Results:

Enhancement Potential	NA, high values and conditions already exist
Education	Has potential (observation only from Delaney Rd. and bridge)
Recreation	Provides (passive opportunities from bridge or boat on creek)
Aesthetic Quality	Pleasing

Turner Local Wetland Inventory Wetland MCC-B

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**		
Yes	**No**	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")
B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**		
Yes	**No**	
X		Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: ▫***Diverse* wildlife habitat,** ▫***Intact* fish habitat,** ▫***Intact* water quality, or** ▫***Intact* hydrologic control.**
		Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
		Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Local Wetland Inventory	Wetland: MCC - C
Project Location: Turner, Oregon	Wetland Type(s): PRB
Date: 9/15/99	Approx. Area (acres):
Verification Type: Off-site, one data point on slope	Investigator(s): J. Fromm
Wetland location: This "wetland" is Franzen Reservoir located on the west-facing slopes in central Turner.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat (Lake)		Water Quality		Hydrologic Control		Sensitivity to Impact	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	c	1	c	1	a	1	b	1	a
2	b	2	c	2	a	2	a	2	a
3	c	3	c	3	c	3	a	3	NA
4	a	4	NA	4	a	4	a	4	c
5	b	5	a	5	c	5	b	5	c
6	b	6	c	6	NA	6	c	6	c
7	NA					7	a		
8	a								
9	c								

Results:

Wildlife Habitat	*Not applicable* (Reservoir is managed to preserve drinking water quality. It is lined, water is chlorinated, inflow and outflow is piped, and facility is fenced. City plans to add a floating cover)
Fish Habitat	*Not applicable* (Reservoir is managed to preserve drinking water quality. Reservoir did not replace a natural feature, it has no fish habitat function, and therefore is not impacted or "lost".)
Water Quality	*Not applicable* (After the water is diverted from the North Santiam River it is isolated from the surface water system and can't affect water quality, except during periodic discharge to intermittent stream.)
Hydrologic Control	*Not applicable.* (Constructed reservoir is lined and disconnected from the local watershed.)
Sensitivity to Impact	*Not applicable*

Social Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1		1		1		1	
2		2		2		2	
3		3		3		3	
4		4		4		4	
5		5		5		5	
6		6		6		6	

Results:

Enhancement Potential	*Not applicable*
Education	*Not applicable*
Recreation	*Not applicable*
Aesthetic Quality	*Not applicable*

Turner Local Wetland Inventory Wetland MCC-C

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**		
Yes	**No**	
X		Wetland artificially created entirely from upland that are:
	X	(a) Created for the purpose of controlling, storing, or maintaining stormwater;
	X	(b) Active surface mining or active log ponds;
	X	(c) ditches without free & open connect to waters of the state AND without fish;
	X	(d) <1 acre and unintentionally created for irrigation leak or construction activity;
	X	(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
	X	Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")
B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**		
Yes	**No**	
	X	Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: *Diverse* wildlife habitat, *Intact* fish habitat, *Intact* water quality, or *Intact* hydrologic control.
	X	Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
	X	Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Local Wetland Inventory	Wetland: MCC - D
Project Location: Turner, Oregon	Wetland Type(s): PUB
Date: 9/15/99	Approx. Area (acres): 0.9
Verification Type: On-site	Investigator(s): J. Fromm
Wetland location: East central Turner, about 1,600 feet west of intersection of Witzel Rd. and Combest Ln.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		**Fish Habitat (lake)**		**Water Quality**		**Hydrologic Control**		**Sensitivity to Impact**	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	c	1	a	1	c	1	b	1	a
2	b	2	c	2	a	2	a	2	a
3	c	3	c	3	c	3	b	3	c
4	b	4	c	4	b	4	b	4	b
5	b	5	b	5	b	5	b	5	a
6	b	6	b	6	c	6	b	6	b
7	c					7	a		
8	b								
9	c								

Results:

Wildlife Habitat	*Provides some*
Fish Habitat	*Impacted*
Water Quality	*Impacted*
Hydrologic Control	*Impacted*
Sensitivity to Impact	*Potentially sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		**Education**		**Recreation**		**Aesthetic Quality**	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	c	1	c	1	c
2	b	2	a	2	a	2	c
3	NA	3	b	3	c	3	b
4	b	4	b	4	b	4	c
5	c	5	c	5	a	5	a
6	b	6	b	6	b	6	a

Results:

Enhancement Potential	*High*
Education	*Not appropriate*
Recreation	*Provides opportunities for landowner only*
Aesthetic Quality	*Not pleasing*

Turner Local Wetland Inventory Wetland MCC-D

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**		
Yes	**No**	
X		Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without tree & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
X		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")
B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**		
Yes	**No**	
		Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: *Diverse* wildlife habitat, *Intact* fish habitat, *Intact* water quality, or *Intact* hydrologic control.
		Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
		Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
		Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
		Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Wetland Inventory	Wetland: MCS - B
Project Location: Turner	Wetland Type(s): PFO
Date: 9/17/99	Approx. Area (acres): 0.2
Verification Type: on-site	Investigator(s): J. Fromm
Wetland location: Located in southeast Turner about 400 feet north of Marion Rd. and 50 east of Mill Creek on church convention facilities.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat (stream)		Water Quality		Hydrologic Control		Sensitivity to Impact	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	b	1	b	1	a	1	a	1	a
2	a	2	b	2	a	2	a	2	b
3	b	3	b	3	b	3	c	3	a
4	c	4	a	4	b	4	b	4	c
5	a	5	a	5	c	5	a	5	a
6	a	6	?	6	a	6	c	6	a
7	a					7	a		
8	a								
9	c								

Results:

Wildlife Habitat	*Provides some*
Fish Habitat	*Impacted*
Water Quality	*Impacted*
Hydrologic Control	*Intact*
Sensitivity to Impact	*Potentially sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	a	1	b[1]	1	b
2	a	2	a	2	a	2	c
3	a	3	b	3	c	3	b
4	c	4	a	4	b	4	b
5	c	5	b[1]	5	b	5	a
6	b	6	a	6	b	6	a

Results:

Enhancement Potential	Moderate
Education	Has uses. 1 The closest public access point is Mill Creek, though the church facilities are semi-public.
Recreation	Has potential
Aesthetic Quality	Moderately pleasing

Turner Local Wetland Inventory Wetland MCS-B

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**

Yes	No	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")

B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**

Yes	No	
X		Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: *Diverse* wildlife habitat, *Intact* fish habitat, *Intact* water quality, or ***Intact* hydrologic control.**
X		Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
X?		Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Wetland Inventory	Wetland: MCS - C
Project Location: Turner	Wetland Type(s): PFO
Date: 9/16/99	Approx. Area (acres): 2.51
Verification Type: on-site	Investigator(s): J. Fromm
Wetland location: Southeast Turner on church facilities located south of Marion Rd and north of Mill Creek.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		**Fish Habitat**		**Water Quality**		**Hydrologic Control**		**Sensitivity to Impact**	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	NA	1	a	1	a	1	a
2	a	2	-	2	a	2	a	2	b
3	c	3	-	3	a	3	b	3	a
4	NA	4	-	4	b	4	a	4	c
5	a or b	5	-	5	c	5	a	5	a
6	a	6	-	6	a	6	a	6	a
7	a	7	-			7	a		
8	a	8	-						
9	c	9	-						

Results:

Wildlife Habitat	*Diverse* (Surface water connection exists only during high flows due to dike)
Fish Habitat	*NA*
Water Quality	*Intact*
Hydrologic Control	*Intact*
Sensitivity to Impact	*Potentially sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		**Education**		**Recreation**		**Aesthetic Quality**	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	NA	1	a[1]	1	a[1]	1	b
2	a	2	a	2	a	2	a[1]
3	b	3	a	3	a	3	a
4	b	4	a	4	a	4	b
5	c	5	a[1]	5	a	5	a
6	b	6	b	6	b	6	a

Results:

Enhancement Potential	NA, existing ecological function/values are high, buffer would be beneficial
Education	Has uses 1. Can be observed from Mill Ck. or Turner Rd. and facilities are semi-public
Recreation	Provides opportunities
Aesthetic Quality	Pleasing

Turner Local Wetland Inventory Wetland MCS-C

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**		
Yes	**No**	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")
B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**		
Yes	**No**	
X		Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: ***Diverse wildlife habitat,** NA *Intact* fish habitat, ******Intact* water quality, or ******Intact* hydrologic control.**
	X	Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
	X	Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Wetland Inventory	Wetland: MCS - D
Project Location: Turner	Wetland Type(s): PFO
Date: 11/17/99	Approx. Area (acres): 4.04
Verification Type: on-site and off-site	Investigator(s): J. Fromm
Wetland location: Southeast Turner southwest of Marion Rd and along the north bank of Mill Creek.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	NA	1	a	1	a	1	a
2	a	2	-	2	a	2	a	2	b
3	b	3	-	3	b	3	b	3	a
4	NA	4	-	4	b	4	a	4	a
5	a or b	5	-	5	a	5	a	5	a
6	a	6	-	6	a	6	a	6	a
7	a	7	-			7	b		
8	c	8	-						
9	c	9	-						

Results:

Wildlife Habitat	*Provides some* (surface water connection exists in high flow conditions)
Fish Habitat	*NA*
Water Quality	*Impacted*
Hydrologic Control	*Intact*
Sensitivity to Impact	*Sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	a[1]	1	a[1]	1	b
2	a	2	a	2	a	2	b
3	a	3	b	3	c	3	a
4	b	4	a	4	b	4	b
5	c	5	b	5	a	5	a
6	c	6	b	6	b	6	a

Results:

Enhancement Potential	*Moderate*
Education	*Has uses* 1. Wetland observed and accessed from Mill Ck. via boat or observation form Marion Rd.
Recreation	*Provides opportunities*
Aesthetic Quality	*Moderately pleasing*

Turner Local Wetland Inventory Wetland MCS-D

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**		
Yes	**No**	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")
B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**		
Yes	**No**	
X		Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: *Diverse* wildlife habitat, NA *Intact* fish habitat, *Intact* water quality, or ▪***Intact* hydrologic control.**
X		Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
		Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Wetland Inventory	Wetland: MCS - F
Project Location: Turner	Wetland Type(s): PFO
Date: 11/19/99	Approx. Area (acres): 1.34
Verification Type: on-site	Investigator(s): J. Fromm
Wetland location: Southeast Turner located east of Witzel Rd. and north of Marion Rd.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		**Fish Habitat**		**Water Quality**		**Hydrologic Control**		**Sensitivity to Impact**	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	c	1	NA	1	b	1	b	1	a
2	a	2	-	2	b	2	c	2	a
3	b	3	-	3	a	3	b	3	a
4	NA	4	-	4	b	4	a	4	b
5	b	5	-	5	a	5	a	5	a
6	b	6	-	6	a	6	b	6	a
7	a	7				7	b		
8	c	8	-						
9	b	9	-						

Results:

Wildlife Habitat	*Provides some*
Fish Habitat	*NA*
Water Quality	*Impacted*
Hydrologic Control	*Impacted*
Sensitivity to Impact	*Sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		**Education**		**Recreation**		**Aesthetic Quality**	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	b[1]	1	b	1	c
2	c	2	a	2	c	2	b
3	NA	3	b	3	c	3	a
4	b	4	b	4	b	4	b
5	b	5	b	5	b	5	a
6	c	6	b	6	b	6	a

Results:

Enhancement Potential	*Moderate*
Education	*Has potential* 1. No public access, but wetland can be observed from Witzel Rd.
Recreation	*Has potential*
Aesthetic Quality	*Pleasing*

Turner Local Wetland Inventory Wetland MCS-F

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**		
Yes	**No**	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")
B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**		
Yes	**No**	
	X	Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: *Diverse* wildlife habitat, *Intact* fish habitat, *Intact* water quality, or *Intact* hydrologic control.
X		Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
	X	Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Local Wetland Inventory	Wetland: PL - B
Project Location: Turner, Oregon	Wetland Type(s): PFO
Date: 9/3/99	Approx. Area (acres): 1.09
Verification Type: On-site	Investigator(s): J. Fromm
Wetland location: West Turner near where Turner Bypass flows into Mill Creek, due west of intersection of Birch and 6th Streets.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat (Stream)		Water Quality		Hydrologic Control		Sensitivity to Impact	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	NA	1	a	1	a	1	a
2	a	2	-	2	a	2	a	2	b
3	c	3	-	3	a	3	b	3	a
4	NA	4	-	4	b	4	b	4	b
5	a	5	-	5	b	5	a	5	a
6	a			6	a	6	b	6	a
7	a					7	a		
8	b								
9	a								

Results:

Wildlife Habitat	*Diverse* (Surface water connection occurs only at high flows)
Fish Habitat	*NA*
Water Quality	*Intact*
Hydrologic Control	*Intact*
Sensitivity to Impact	*Potentially sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	NA	1	b[1]	1	c[1]	1	b
2	a	2	a	2	a	2	a
3	a	3	a	3	c	3	a
4	b	4	b	4	a	4	a
5	a	5	c[1]	5	a	5	a
6	b	6	b	6	b	6	a

Results:

Enhancement Potential	*NA* (Wetlands existing ecological functions and values are already high)
Education	*Has potential* 1 Educational, recreational, and aesthetic social functions presume boating on the Turner Bypass to provide passive function and value. Access is not allowed and the wetland is only partially visible from 6th St.
Recreation	*Provides opportunities*
Aesthetic Quality	*Pleasing*

Turner Local Wetland Inventory Wetland PL-B

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**		
Yes	**No**	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")
B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**		
Yes	**No**	
X		Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: ▪***Diverse* wildlife habitat,** NA *Intact* fish habitat, ▪***Intact* water quality, or** ▪***Intact* hydrologic control.**
	X	Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
	X	Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Local Wetland Inventory	Wetland: PL - C
Project Location: Turner, Oregon	Wetland Type(s): PFO/PSS
Date: 9/7/99	Approx. Area (acres): 0.54
Verification Type: Off-site	Investigator(s): J. Fromm
Wetland location: West Turner directly south of 6th St. on the south side of Turner Bypass.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat (Stream)		Water Quality		Hydrologic Control		Sensitivity to Impact	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	NA	1	a	1	a	1	a
2	a	2	-	2	a	2	a	2	b
3	b	3	-	3	a	3	b	3	a
4	NA	4	-	4	b	4	c	4	b
5	a[1]	5	-	5	b	5	a	5	a
6	a	6	-	6	a	6	a	6	a
7	a					7	b		
8	b								
9	c								

Results:

Wildlife Habitat	*Diverse* Surface water connection probable exists during high flows only.
Fish Habitat	*NA* Some off channel use during high flows possible.
Water Quality	*Intact*
Hydrologic Control	*Intact*
Sensitivity to Impact	*Potentially sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	NA	1	b[1]	1	c	1	a
2	a	2	a	2	a	2	a
3	a	3	a	3	c	3	a
4	b	4	b	4	a	4	b
5	c	5	c	5	a	5	a
6	b	6	b	6	b	6	a

Results:

Enhancement Potential	*NA* Wetland already has high ecological functions and values.
Education	*Has potential* 1 Educational, recreational, and aesthetic social functions presume boating on the Turner Bypass assume passive use. Access is not allowed and the wetland is only partially visible from Wipper Rd.
Recreation	*Provides opportunities*
Aesthetic Quality	*Pleasing*

Turner Local Wetland Inventory Wetland PL-C

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**		
Yes	**No**	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")
B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**		
Yes	**No**	
X		Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: **o*Diverse* wildlife habitat,** NA *Intact* fish habitat, **o*Intact* water quality, or** **o*Intact* hydrologic control.**
	X	Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
	X	Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Wetland Inventory	Wetland: PL - D
Project Location: Turner	Wetland Type(s): FW, PFO
Date: 7/30/99, 8/2/99, 11/17/99	Approx. Area (acres): 1.74
Verification Type: on-site and off-site	Investigator(s): J. Fromm
Wetland location: Southwest Turner between Wipper Rd. and RR tracks.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		**Fish Habitat**		**Water Quality**		**Hydrologic Control**		**Sensitivity to Impact**	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	b	1	NA	1	b	1	b	1	a
2	a	2	-	2	a	2	a	2	a
3	b	3	-	3	c	3	b	3	c
4	NA	4	-	4	b	4	a	4	b
5	b	5	-	5	b	5	b	5	a
6	a	6	-	6	c	6	b	6	b
7	c					7	b		
8	b								
9	c								

Results:

Wildlife Habitat	*Provides some*
Fish Habitat	*NA*
Water Quality	*Impacted*
Hydrologic Control	*Impacted*
Sensitivity to Impact	*Potentially sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		**Education**		**Recreation**		**Aesthetic Quality**	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	b[1]	1	b[1]	1	c
2	c	2	a	2	c	2	b
3	NA	3	b	3	c	3	a
4	b	4	b	4	b	4	b
5	c	5	b	5	b	5	a
6	b	6	b	6	b	6	a

Results:

Enhancement Potential	*Moderate*
Education	*Has potential* Can only be observed from Wipper Rd, no public access allowed.
Recreation	*Has potential* Passive, off-site use only
Aesthetic Quality	*Moderately pleasing*

Turner Local Wetland Inventory Wetland PL-D

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**

Yes	No	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")

B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**

Yes	No	
	X	Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: *Diverse* wildlife habitat, NA *Intact* fish habitat, *Intact* water quality, or *Intact* hydrologic control.
	X	Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
	X	Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Wetland Inventory	Wetland: PL - E
Project Location: Turner	Wetland Type(s): PEM, PFO
Date: 11/15/99	Approx. Area (acres): 2.45
Verification Type: on-site	Investigator(s): J. Fromm
Wetland location: South Turner on the east side of the RR tracks between Turner Bypass and south end of study boundary.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	NA	1	b	1	a	1	b
2	a	2	-	2	a	2	a	2	b
3	b	3	-	3	a	3	b	3	c
4	NA	4	-	4	b	4	a	4	b
5	a	5	-	5	b	5	a	5	a
6	a	6	-	6	c	6	a	6	a
7	c					7	b		
8	b								
9	b								

Results:

Wildlife Habitat	*Diverse*
Fish Habitat	*NA*
Water Quality	*Intact*
Hydrologic Control	*Intact*
Sensitivity to Impact	*Potentially sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	NA	1	b[1]	1	c	1	b
2	c	2	b	2	c	2	c
3	NA	3	a	3	c	3	a
4	b	4	b	4	a	4	b
5	b	5	c	5	b	5	a
6	b	6	b	6	b	6	a

Results:

Enhancement Potential	*NA* Existing ecological functions and values are high, wetland buffer would be beneficial.
Education	*Has potential* No public access, north of wetland can be observed from a distance by boating on Turner Bypass.
Recreation	*Not appropriate*
Aesthetic Quality	*Moderately pleasing*

Turner Local Wetland Inventory Wetland PL-E

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**		
Yes	**No**	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")
B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**		
Yes	**No**	
X		Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: **o*Diverse* wildlife habitat,** NA *Intact* fish habitat, **o*Intact* water quality, or** **o*Intact* hydrologic control.**
	X	Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
	X	Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

Oregon Freshwater Wetland Assessment Methodology
Wetland Assessment Summary Sheet

Project Name: Turner Wetland Inventory	Wetland: PL - F
Project Location: Turner	Wetland Type(s): R4, PEM, PFO, PSS, PFO/PSS
Date: 11/15/99	Approx. Area (acres): 15.68
Verification Type: On-site	Investigator(s): J. Fromm
Wetland location: South Turner between RR tracks and 55th Ave. between Turner Bypass and south end of study boundary. Wetland complex surrounds the old location of Perrin Lateral Canal.	

Ecological Function and Condition Assessment Answers:

Wildlife Habitat		Fish Habitat		Water Quality		Hydrologic Control		Sensitivity to Impact	
Question	Answer	Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	a	1	NA	1	a or b	1	a	1	a
2	a	2	-	2	a	2	a	2	a
3	a	3	-	3	a	3	a	3	c
4	NA	4	-	4	a	4	a	4	b
5	a	5	-	5	b	5	a	5	a
6	a	6	-	6	c	6	a	6	a
7	c	7	-			7	b		
8	b								
9	b								

Results:

Wildlife Habitat	*Diverse*
Fish Habitat	*NA*
Water Quality	*Intact*
Hydrologic Control	*Intact*
Sensitivity to Impact	*Potentially sensitive*

Social Function and Condition Assessment Answers:

Enhancement Potential		Education		Recreation		Aesthetic Quality	
Question	Answer	Question	Answer	Question	Answer	Question	Answer
1	NA	1	b[1]	1	b[1]	1	a
2	a or c	2	a	2	a	2	a
3	NA	3	a	3	c	3	a
4	a	4	b	4	a	4	b
5	b	5	b	5	a	5	a
6	b	6	b	6	b	6	a

Results:

Enhancement Potential	*NA* Existing ecological functions and values are high
Education	*Has potential use* Public access not allowed, but wetland can be observed from 55th Ave and boating on Turner Bypass.
Recreation	*Provides opportunities (passive off-site)*
Aesthetic Quality	*Pleasing*

Rationale:		

Turner Local Wetland Inventory Wetland PL-F

Locally Significant Wetland Criteria Checklist

A. "OUT" Test **Wetlands that score "yes" in any of the following categories do NOT proceed to Section B**

Yes	No	
	X	Wetland artificially created entirely from upland that are:
		(a) Created for the purpose of controlling, storing, or maintaining stormwater;
		(b) Active surface mining or active log ponds;
		(c) ditches without free & open connect to waters of the state AND without fish;
		(d) <1 acre and unintentionally created for irrigation leak or construction activity;
		(e) Created for the purpose of wastewater treatment, cranberry production, stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.
		Documented as being contaminated by hazardous substances, materials or wastes ("Hazmat sites")

B. "IN" Test **Those wetlands that meet ONE OR MORE of the following criteria are LOCALLY SIGNIFICANT WETLANDS**

Yes	No	
X		Wetlands that score the highest rank (stated in italics below) for any of the four ecological functions addressed by OFWAM or equivalent methodology: **o*Diverse* wildlife habitat,** NA *Intact* fish habitat, **o*Intact* water quality, or** **o*Intact* hydrologic control.**
	X	Wetlands that are rated in the second highest functional category for water quality (called *impacted or degraded* in OFWAM), AND that occur within ¼ mile of a water quality-limited stream listed by DEQ.
	X	Contain one or more rare/uncommon wetland plant communities in Oregon (Most concise list is found in Appendix G of OFWAM)
	X	Inhabited by any species listed by the federal or state government as a sensitive, threatened or endangered species in Oregon (unless consultation with appropriate agency deems the site no important for the maintenance of the species).
	X	Wetland rates in second highest functional category for fish habitat (called *impacted or degraded* in OFWAM), and has a surface water connection to a stream segment that is mapped by ODFW as habitat for "indigenous anadromous salmonids."
		Optional Criteria (local discretion): Wetland represents a *locally* unique plant community.
		Optional Criteria (local discretion): Wetland rates in highest category for education potential (it must be publicly owned to rank that in OFWAM) and there is documented use for educational purposed by a school or organization.

13. Appendix D: Wetland Determination Data Forms

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 4-1

Field Investigator: J. Fromm	Date: 9/10/99	Weather: Hot, sunny	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 20 Other: North Turner east of gravel making operation

Landscape Description: Gentle footslope at base

Surrounding Land Use: Agricultural (pasture), residential, industrial (gravel mine)

Atypical Situation? No X Yes __ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	40	UPL	X	RUDI	45	FACU	X	AGST	35	FAC	X
				CRDO	15	FAC	X	FEAR	25	FAC-	X
				COCO	5	FACU		CIAR	20	FACU+	X
								CIVU	5	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 2/6 = 33%

SOILS

Mapped soil type: McAlpin silty clay loam | Is mapped soil on hydric soils list?: Yes ___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10 YR 3/2	silty clay loam	common, fine, 5 YR 4/4, redox, concentration along root channels
4-15	10 YR 3/2	silty clay loam	few, fine, 5 YR 4/4, redox, concentration along root channels

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments: Plot typifies open areaabout 50 feet south of northern unnamed intermittent drainage.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 6-1

Field Investigator: J. Fromm	Date: 9/10/99	Weather: Sunny, clear, 70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 21 Other: NE Turner about 300' west of Witzel Road.

Landscape Description: Upper sideslope on rolling hills.

Surrounding Land Use: Residential, low density, agricultural

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
CRDO	40	FAC	X	SYAL	60	FACU	X	FEAR	60	FAC	X
				COCO	30	FACU	X	RUUR	40	FACU	X
				RHDI	10	UPL		DAGL	20	FACU	
				CRDO	5	FAC					

Percent of dominant species that are OBL, FACW, and/or FAC? 1/5 = 20%

SOILS

Mapped soil type: Nekia silty clay loam, 7-12% slopes | Is mapped soil on hydric soils list?: Yes ___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	7.5 YR 3/3	silty loam	
4-15	7.5 YR 3/3	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Plot located in an unmowed area on hillside. Parcel is a home on a site once used for Christmas tree production. Microtopography has some unevenness, but overall, the slope is straight and even.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 11-1

Field Investigator: J. Fromm	Date: 9/10/99	Weather: Sunny, hot	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 21 Other: NE Turner about 1400' west of Witzel Road.

Landscape Description: Sideslope.

Surrounding Land Use: Undeveloped, agriculture, rural residential

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	80	UPL	X	COCO	85	FACU	X	RHDI	15	UPL	X
				SYAL	30	FACU	X	RUUR	15	FACU	X
				RUDI	2	FACU		POMU	5	FACU	
								CADE	2	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/5 = 0%

SOILS

Mapped soil type: Nekia silty clay loam, 12-20% slope | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	7.5 YR 3/2	silty clay loam	
5-15	7.5 YR 4/2	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 13-1

Field Investigator: J. Fromm	Date: 8/9/99	Weather: Sunny, hot	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 20 Other: Parcel north of Turner City Park, about 35' west of RR tracks.

Landscape Description: Low-lying area on terrace just west of RR berm. Poor drainage, possible backwater from creek.

Surrounding Land Use: Industrial, undeveloped, designated residential

Atypical Situation? No___ Yes_X_ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	40	FACW	X	SPDO	40	FACW	X	CAOB	40	OBL	X
POBA	30	FAC	X	FRLA	15	FACW	X	PHAR	5	FACW	
CRDO	15	FAC		PHCA	10	FACW-		CADE	5	FACU	
				COST	5	FACW					

Percent of dominant species that are OBL, FACW, and/or FAC? 5/5 = 100%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10 YR 3/1	silt loam	none
5-13	10 YR 3/1	very gravelly silt loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water MarksX						
Sediment Deposits?						
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Plot typifies the narrow swale adjacent to RR. Is located within 100-year floodplain.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 13-2

Field Investigator: J. Fromm	Date: 8/10/99	Weather: Hot and sunny	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 20 Other: Parcel north of Turner City Park, between RR & Mill Creek.

Landscape Description: Same as 20-1, lower in elevation.

Surrounding Land Use: Same as 20-2

Atypical Situation? No_X_ Yes___ (Describe type and effect).

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	75	FACW	X	SPDO	25	FACW	X	CAOB	35	OBL	X
SALA	40	FACW	X	CRDO	10	FAC	X	PHAR	25	FACW	X
				FRLA	5	FACW		MEAR	20	FACW-	
								CAAT	20	FACW	
								SODU	15	FAC+	
								RAOC	5	FAC	
Percent of dominant species that are OBL, FACW, and/or FAC? 6/6 = 100%								JUEF	5	FACW	

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10 YR 3/1	gravelly silty loam	fine, common, distinct, 7.5 YR,4/6, SIMS @ root pores
5-10	10 YR 4/1	very gravelly silty loam !!	medium, common, distinct, 7.5 YR 4/6, soft iron masses @ root pores

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?			To what depth?	Oxidized		
Saturated Soils?			At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks						
Sediment Deposits?						
Drainage Patterns	X			***Saturation within upper 12" is key.***		

Comments: Leaves, twigs, dirt trapped up to ~4' on tree trunks and downed logs.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Overstory has opened up, SALA more common.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 13-3

Field Investigator: J. Fromm	Date: 8//10/99	Weather: Hot and sunny	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 20 Other: Parcel north of Turner City Park between RR & Mill Creek

Landscape Description: Floodplain 10' from right edge of water (Mill Creek)

Surrounding Land Use: Same as 13-1

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	20	FACW	X	COST	95	FACW	X	GLHE	70	FACU	X
				ROPI	20	FAC		CAOB	20	OBL	
								RAOC	20	FAC	
								CAAT	5	FACW	

Percent of dominant species that are OBL, FACW, and/or FAC? 2/3 = 66%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10 YR 3/2	silt loam	
6-15	10 YR 3/1	silt loam	few, fine, distinct soft iron masses @ ped interiors

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: The adjacent upland forest is mainly QUGA with minor amounts of ACMA & PSME. Few scattered ALRU seen along Mill Creek.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 13-4

Field Investigator: J. Fromm	Date: 8/10/99	Weather: Sunny, clear	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 20 Other: Same as 13-3 except higher, about 30' from right edge of water

Landscape Description: Floodplain, natural levee

Surrounding Land Use: same as 13-3

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	35	FACW	X	PHCA	60	FACW-	X	GLHE	50	FACU	X
QUGA	30	UPL	X	AMAL	30	FACU	X				
				OECE	20	FACU					
				SYAL	10	FACU					

Percent of dominant species that are OBL, FACW, and/or FAC? 2/5 = 40%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10 YR 3/2	silty loam	
5-12	10 YR 3/2-1	gravelly silty loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: The upland forest is mainly QUGA with minor amounts of ACMA and PSME. Few scattered ALRU seen along Mill Creek.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 16-1

Field Investigator: J. Fromm	Date: 9/10/99	Weather: Sunny, clear	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 20 Other: Northeast Turner on undeveloped lot near Val View Drive

Landscape Description: Sideslope midway between ridge line and base

Surrounding Land Use: Residential

Atypical Situation? No___ Yes X (Describe type and effect) Used as a staging area for sewer construction, recent grading (minor, aggregate piles

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RUDI	20	FACU	X	FEAR	50	FAC-	X
								DAGL	20	FACU	X
								LOPE	10	FACU	
								HYRA	5	FACU	
								PACA	5	UPL	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/3 = 0%

SOILS

Mapped soil type: Nekia silty clay loam, 7-12% slopes | Is mapped soil on hydric soils list?: Yes ___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	7.5 YR	silty clay loam	
6-15	7.5 YR	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Typifies relatively disturbed conditions on hillslope. Site is empty residential lot where the vegetation is occasionally mowed.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 17-1

Field Investigator: J. Fromm	Date: 9/14/99	Weather: Sunny, clear, mid-80s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 21 Other: About 60' south of Val View Drive

Landscape Description: Sideslope, near the ridge crest

Surrounding Land Use: Residential, agricultural (pasture)

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
PSME	75	FACW	X	RUDI	80	FACU	X	RUUR	25	FACU	X
QUGA	15	UPL		ACMA	10	FACU		FEAR	5	FAC-	
ABGR	2	FACU-		COCO	10	FACU		MANE	1	UPL	
				SYAL	5	FACU					
				RHPU	3	FAC-					
				ROPI	2	FAC					

Percent of dominant species that are OBL, FACW, and/or FAC? 1/3 = 33%

SOILS

Mapped soil type: Nekia silty clay loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
+1-0		duff	
0-12	7.5 YR 3/3	silty clay loam	
bedrock			

Other comments: Bedrock & boulder exposures of basalt at surface

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Where less open, RUDI is not dominant. Plot typifies relatively undisturbed vegetation at this landscape position. Understory veg. is mowed in places. Southwest part of site is in Christm. tree prod.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 18-1

Field Investigator: J. Fromm	Date: 9/14/99	Weather: Sunny, clear, mid-80s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 21 Other: About 25' west of Witzel Road.

Landscape Description: Sideslope. Gentle, long sideslope with minor terraces to benches.

Surrounding Land Use: Residential, agriculture, pasture land.

Atypical Situation? No___ Yes_X_ (Describe type and effect) Pretty thoroughly grazed.

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	15	UPL	X	PYMA	10	UPL	X	Graminae	100		X

Percent of dominant species that are OBL, FACW, and/or FAC? 0/2 - 0%

SOILS

Mapped soil type: Nekia silty clay loam, 7-12% slopes | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10 YR 3/3	silty clay loam	
4-13	10 YR 3/3	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Vegetation on this parcel is close cropped cropped pasture grass with a few trees: cherry, QUGA, PSME, cedars. Most trees, shrubs & herbs grazed. Cattle, llamas, horse, chickens on place.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 18-2

Field Investigator: J. Fromm	Date: 9/14/99	Weather: Sunny, clear, mid-80s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 21 Other: Same as Plot 18-1 except in the roadside ditch ~10' west of Witzel

Landscape Description: Gentle sideslope with minor breaks in slope.

Surrounding Land Use: Rural, residential, pasture.

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	5	UPL	X	SYAL	25	FACU	X	FEAR	30	FAC-	X
RHPU	2	FAC-		COCO	15	FACU	X	AGST	20	FAC	X
				RHPU	10	FAC-		DACA	15	UPL	
				RHDI	5	UPL		RUUR	10	FACU	
				RUPA	5	FAC-		PTAQ	5	FACU	
				RUDI	5	FACU					

Percent of dominant species that are OBL, FACW, and/or FAC? 1/5 = 20%

SOILS

Mapped soil type: Nekia silty clay loam, 7-12% slopes | Is mapped soil on hydric soils list?: Yes ___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10 YR 3/3	silty clay loam	
5-15	10 YR 3/2	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: Plot represents the relatively less disturbed situation outside of grazed area.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 18-3

Field Investigator: J. Fromm	Date: 9/14/99	Weather: Sunny, clear	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 21 Other: ~250' west of Witzel Rd on northeast Turner.

Landscape Description: Slightly benched area on slide slope.

Surrounding Land Use: Pasture, residential

Atypical Situation? No___ Yes_X_ (Describe type and effect) Grazing has removed most of trees, shrubs & herb layer.

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	5	UPL	X					Gramminae			
COCO	5	FACU	X								
PREM	3	FACU	X								

Percent of dominant species that are OBL, FACW, and/or FAC? 0/3 = 0%

SOILS

Mapped soil type: Nekia silty clay loam, 12-20% slopes | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	7.5 YR 3/4	silty clay loam	
5-11	7.5 YR 3/3	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes disturbed vegetation on a break in slope in the hillslope.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 19-1

Field Investigator: J. Fromm	Date: 8/9/99	Weather: Sunny, clear, mid-80s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: On parcel north of Turner City Park, between creek and railroad.

Landscape Description: Terrace above floodplain, plot typifies undisturbed conditions which is an oak forest with openings.

Surrounding Land Use: Industrial, public park, zoned residential

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	75	UPL	X	RUDI	55	FACU	X	AGST	40	FAC	X
FRLA	20	FACW		SYAL	40	FACU	X	POMU	10	FACU	
PYMA	5	UPL		RONU	20	FAC		MAAQ	5		
PSME	5	FACU		AMAL	20	FACU		DAGL	5	FACU	
ACMA	5	FACU		COCO	15	FACU					
				PHCA	10	FACW-					
				CRDO	5	FAC					

Percent of dominant species that are OBL, FACW, and/or FAC? 1/5 = 20%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes ___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10 YR 3/2	gravelly silty loam	none
4-13	10 YR 3/2	very gravelly silty loam	none

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 19-2

Field Investigator: J. Fromm	Date: 8/9/99	Weather: Sunny, hot	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: In parcel north of Turner City Park, 15' from right edge of Mill Creek.

Landscape Description: Floodplain along Mill Creek.

Surrounding Land Use: Public park, industrial

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	65	FACW	X	PHCA	85	FACW-	X	RUUR	25	FACU	X
ACMA	10	FACU		COCO	10	FACU		URDI	20	FAC+	X
PREM	5	FACU		RONU	5	FAC		SYAL	5	FACU	
				RUDI	5	FACU		CADE	5	FACU	
								RAOC	5	FAC	

Percent of dominant species that are OBL, FACW, and/or FAC? ¾ = 75%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No X__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	7.5 YR 3/2	silty clay loam	
4-15	7.5 YR 3/2	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?	Y		To about 4' above ground			
Water Marks	Y					
Sediment Deposits?	Y					
Drainage Patterns?	Y			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 19-3

Field Investigator: J. Fromm	Date: 8/9/99	Weather: Sunny, clear, mid-80s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: See 19-1

Landscape Description: Plot typifies conditions between edge of water and floodplain. Mill Creek has incised 2-3' into floodplain

Surrounding Land Use: Same as 19-2, except 2 feet from LEOW

Atypical Situation? No X Yes __ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
ALRU	30	FAC	X	COST	40	FACW	X	PHAR	50	FACW	X
SALA	15	FACW+		PHCA	20	FACW-	X	URDI	10	FAC+	
				SYAL	5	FACU		SODU	10	FAC+	
								CAOB	2	OBL	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/4 = 100%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes ___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10 YR 3/2	gravelly loam	none
6-15	5 PB 3/1	gravelly loam	gleyed with 7.5 YR, medium, common, prominent SIMS

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth? 4"	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 20-1

Field Investigator: J. Fromm	Date: 8/9/99	Weather: Sunny, clear mid-80s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Turner City Park

Landscape Description: Terrace, high floodplain of Mill Creek. Plot represents undisturbed upland veg. community

Surrounding Land Use: Public park, industrial land, RR

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	80	UPL	X	AMAL	60	FACU	X	SYAL	20	FACU	X
PSME	15	FACU		RUDI	50	FACU	X				
PREM	10	FACU		MANE	15	FACU					
				CRDO	10	FAC					
				SYAL	10	FACU					

Percent of dominant species that are OBL, FACW, and/or FAC? **0/4=0%**

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	7.5 YR	silty loam	none
5-15	7.5 YR	gls	none

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 20-2

Field Investigator: J. Fromm	Date: 8/10/99	Weather: Sunny, clear, mid-80s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: North of Turner City Park, 40' west of RR tracks, in low-lying area.

Landscape Description: High floodplain adjacent to Mill Creek. Plot is located in low-lying area adjacent to RR. This plot is located at the southernmost end of the swale which is about 15' wide here.

Surrounding Land Use: Industrial to east, public park to south, vacant land designated for residential.

Atypical Situation? No X Yes ___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
POBA	55	FAC	X	SPDO	20	FACW	X	CAOB	15	OBL	X
FRLA	35	FACW	X	RUDI	20	FACU	X	RHDI	3	UPL	
				SYAL	10	FACU		CADE	2	FACU	
				ROPI	5	FAC		RUUR	5	FACU	
								JUEF	2	FACW	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/5 = 80%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes ___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10 YR 3/1	gravelly silty loam	none
4-13	10 YR 3/2	very gravelly silty loam	few/common, fine, distinct 7.5 YR SIMS @ ped int

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: The RR is located on a fill prism about 12' above surrounding landscape. This "berm" appears to impound water on the west side of tracks.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 21-1

Field Investigator: J. Fromm	Date: 9/10/99	Weather: Sunny, clear, 70s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: North central Turner about 125' west of Val View Drive

Landscape Description: Break in slope at the juncture of terrace and footslope.

Surrounding Land Use: Residential, agricultural

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	80	UPL	X	SYAL	5	FACU	X	FEAR	70	FAC-	X
PYMA	5	UPL		PYMA	5	UPL	X	DAGL	25	FACU	X
								RUUR	5	FACUA	
								TAVU	2	NI	
								RHDI	tr	UPL	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/5 = 0%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	7.5 YR 3/2	gravelly silty clay loam	
4-15	7.5 YR 3/2	silty loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments: Greenness of grass suggests seeps from hill or lawn located upslope.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Plot characterizes relatively less disturbed conditions in low-lying swale on side slope.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 22-1

Field Investigator: J. Fromm	Date: 9/15/99	Weather: Hot and sunny	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 21 Other: Central Turner about 150' south of Sandra Lane

Landscape Description: Broad drainage swale on side slope

Surrounding Land Use: Residential, agricultural (pasture and Christmas trees)

Atypical Situation? No X Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	40	UPL	X	RUDI	85	FACU	X				
PSME	30	FACU		COCO	20	FACU					
ACMA	5	FACU									

Percent of dominant species that are OBL, FACW, and/or FAC? **0/2 = 0%**

SOILS

Mapped soil type: Nekia silty clay loam, 7-12% slopes | Is mapped soil on hydric soils list?: Yes___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	5 YR 3/2	silty clay loam	
8-15	5 YR 3/2	silty clay loam	

Other comments: soil is damp

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Plot characterizes relatively less disturbed conditions in low-lying swale on side slope.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 23-1

Field Investigator: J. Fromm	Date: 9/15/99	Weather: Hot and sunny	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 21 Other: Northeast Turner east of Mickey Lane

Landscape Description: Broad ridge top.

Surrounding Land Use: Pasture and residential

Atypical Situation? No___ Yes_X_ (Describe type and effect) Grazing has removed most of herb and shrub layer.

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
ACMA	45	FACU	X								
ABGR	30	FACU-	X								
PSME	15	FACU									
QUGA	10	UPL									

Percent of dominant species that are OBL, FACW, and/or FAC? 0/2 = 0%

SOILS

Mapped soil type: Nekia silty clay loam, 2-7% slopes | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	5 YR 3/3	silty clay loam	
6-12	5 YR ¾	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments: Boulders exposed on surface.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Only large trees, too big to graze are left. Plot characterizes "savanna" conditions.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 23-2

Field Investigator: J. Fromm	Date: 9/15/99	Weather: Overcast, mid-60s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section Other: Northeast Turner about 500' west of Witzel.

Landscape Description: Sideslope in Waldo Hills

Surrounding Land Use: Pasture, low density residential.

Atypical Situation? No___ Yes X (Describe type and effect). Grazed, but not as intensively as adjacent pasture.

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	60	UPL	X	SYAL	65	FACU	X	RUUR	5	FACU	X
COCO	20	FACU		COCO	20	FACU	X				
PYMA	10	UPL		ILAQ	5	UPL					
ABGR	10	FACU-		ABGR	5	FACU-					
AMAL	5	FACU									

Percent of dominant species that are OBL, FACW, and/or FAC? 0/5 = 0%

SOILS

Mapped soil type: Nekia silty clay loam, 7-12% slopes | Is mapped soil on hydric soils list?: Yes___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	5 YR 3/3	silty clay loam	
5-15	5 YR 3/2	silty clay loam	

Other comments: Exposed boulders

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes relatively undisturbed conditions at midslope. Grazed but some remnant of shrub layer remains.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 23-3

Field Investigator: J. Fromm	Date: 9/15/99	Weather: Overcast, 60s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: About 900' west of Witzel Rd.

Landscape Description: Sideslope near crest of hill.

Surrounding Land Use: Residential, pasture

Atypical Situation? No___ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
ACMA	80	FACU	X	SYAL	10	FACU	X	DAGL	40	FACU	X
ABGR	5	FACU-		RUDI	5	FACU	X	FEAR	25	FAC	X
QUGA	5	UPL						AVSA	10	UPL	
								POMU	2	FACU	
								CIAR	2	FACU+	

Percent of dominant species that are OBL, FACW, and/or FAC? 2/5 = 40%

SOILS

Mapped soil type: Nekia silty clay loam, 12-20% slopes | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	5 YR 3/2	silty clay loam	
4-12	5 YR 3/2	silty clay loam	
basalt bedrock			

Other comments: Basalt boulders and outcrops

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 24-1

Field Investigator: J. Fromm	Date: 9/15/99	Weather:	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 21 Other: Northeast Turner about 30' west of Witzel Road.

Landscape Description: Sideslope, straight and long.

Surrounding Land Use: Rural residential pasture lands

Atypical Situation? No___ Yes_X_ (Describe type and effect). Field has been mowed.

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RUDI	2	FACU	X	DAGL	40	FACU	X
								AGST	25	FAC	X
								FEAR	15	FAC-	
								HYRA	5	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 1/3 = 33%

SOILS

Mapped soil type: Nekia silty clay loam, 2-7% slopes | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	7.5 YR 3/4	silty clay loam	
8-13	7.5 YR 4/4	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Plot characterizes conditions in the open pasture, where vegetation is grazed and managed, at the bottom of the parcel.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 24-2

Field Investigator: J. Fromm	Date: 9/15/99	Weather: Hot and sunny	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 21 Other: Same as 24-1 but 10' west of Witzel Road.

Landscape Description: Sideslope.

Surrounding Land Use: Rural residential, pasture

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
PREM	5	FACU	X	SYAL	60	FACU	X	PTAQ	60	FACU	X
				COCO	10	FACU		RUUR	20	FACU	
				RUPA	10	FAC-		AGST	20	FAC	
				PREM	5	FACU		FEAR	15	FAC-	
				AMAL	5	FACU		RHDI	5	UPL	
				QUGA	2	UPL		POMU	2	FACU	
				RUPI	tr	FAC					

Percent of dominant species that are OBL, FACW, and/or FAC? 0/3 = 0%

SOILS

Mapped soil type: Nekia silty clay loam, 2-7% slopes | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-7	5 YR 3/3	silty clay loam	
7-15	5 YR 3/2	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: Plot characterizes relatively undisturbed vegetation in the lowest lying parts of property and roadside ditch.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 24-3

Field Investigator: J. Fromm	Date: 9/15/99	Weather: Hot and sunny	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 21 Other: Northeast Turner about 15' west of Witzel Road.

Landscape Description: Sideslope.

Surrounding Land Use: Rural residential pasture

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
PYMA	10	UPL	X	SYAL	30	FACU	X	FEAR	60	FAC-	X
				PYMA	25	UPL	X	PTAQ	15	FACU	
				ROPI	20	FAC	X	RUUR	15	FACU	
				COCO	10	FACU		AVSA	5	UPL	
				RHDI	10	UPL					

Percent of dominant species that are OBL, FACW, and/or FAC? 1/5 = 20%

SOILS

Mapped soil type: Nekia silty clay loam, 2-7% slopes | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-7	5 YR 3/3	silty clay loam	
7-13	5 YR 3/2	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes ungrazed, unmowed pasture between grazed pasture and road.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 25-1

Field Investigator: J. Fromm	Date: 8/10/99	Weather: Hot and sunny	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Channel island in Mill Creek, north portion of Turner City Park.

Landscape Description: Floodplain middle portion of island near downstream end, 8' from left edge of water and 12' from right edge of water. Creek splits.

Surrounding Land Use: Public park, gravel/aggregate mine.

Atypical Situation? No___ Yes_X_ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	60	FACW	X	SYAL	60	FACU	X	CAOB	25	OBL	X
PYMA	30	UPL	X	PHCA	40	FACW	X	GLHE	20	FACU+	X
				COST	35	FACW	X	RUUR	15	FACU	
				RHPU	10	FAC		STCO	10	FACW	
				ACCI	5	FAC-		PHAR	5	FACW	
				SARA	2	FACU		RAOC	5	FAC	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/7 = 57%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10 YR 3/2	silty loam	none
6-15	10 YR 3/2	silty loam	none

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		
Saturated Soils?		X	At what depth?			
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: There are small, low-lying wetland pockets throughout the island, but the south and central part of island is mainly upland.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 25-2

Field Investigator: J. Fromm	Date: 8/10/99	Weather: Hot and sunny	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Channel island in Mill Creek, Turner City Park.

Landscape Description: Same as 25-1 but lower elevation, 8' from left edge of water, 9' from right edge of water.

Surrounding Land Use:

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	30	FACW	X	COST	80	FACW	X	GLHE	10	FACU	X
				PHCA	20	FACW-	X	EPWA	10	FACW-	X
								RUUR	5	FACU	X

Percent of dominant species that are OBL, FACW, and/or FAC? 4/6 = 67%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10 YR 3/2	silty clay loam	
4-15	10 YR 3/1	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Downstream, low-lying end of island is a palustrine scrub-shrub wetland.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 26-1

Field Investigator: J. Fromm	Date: 8/4/99	Weather: Sunny, clear, mid-80s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: NW Turner in city about 6' from right edge of water, Mill Creek

Landscape Description: Natural levee in floodplain along Mill Creek. Terrain is flat with typical floodplain swale/ridge features.

Surrounding Land Use: Public park, residential, industrial-commercial

Atypical Situation? No_X_ Yes___ (Describe type and effect) Vegetation in park is mowed occasionally. Ash/Oak forest is remanent, shrub layer mostly removed in park. Some tree removal, too.

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	40	FACW	X	RUDI	10	FACU	X	PHAR	85	FACW	X
				SPDO	5	FACW	X	LOCO	30	FAC	
								RARE	30	FACW	
								TREE	20	FAC	
								TRRE	20	FAC	
								HYRA	2	FACU	
								DISY	tr	FAC	
								RULA	tr	FACU+	

Percent of dominant species that are OBL, FACW, and/or FAC? ¾ = 75%

SOILS

Mapped soil type: Sifton gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10 YR 3/2	silty clay loam	none

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 26-2

Field Investigator: J. Fromm	Date: 8/4/99	Weather: Sunny, clear mid-80s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Same as 26-1 except plot is 1.5 from right edge of water

Landscape Description: Same as 26-1

Surrounding Land Use: Same as 26-1

Atypical Situation? No___ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				***Shrubs (taller than 3.2 ft, <3" dbh)***				***Herbs/Vines***			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	80	FACW	X	SPDO	20	FACW	X	PHAR	100	FACW	X
				FRLA	20	FACW	X	LOCO	10	FAC	
								SCMI	5	OBL	
								CYST	5	FACW	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/4 = 100%

SOILS

Mapped soil type: Sifton gravelly loam | Is mapped soil on hydric soils list?: Yes ___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10 YR 3/2	silty clay loam	none
5-15	10 YR 4/1	silty clay loam	fine common SIM along root pores

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?			To what depth?	Oxidized Rhizospheres?	X	
Saturated Soils?	X		At what depth? 8"			
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Wetland is located on the slope of levee facing creek. Floodplain area on top of levee lacked hydric soils.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 26-3

Field Investigator: J. Fromm	Date: 8/4/99	Weather:	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Turner City Park

Landscape Description: Same as 26-1 except about 100' from right edge of water near the break between ash and oak forest.

Surrounding Land Use:

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	50	FACW	X	FRLA	10	FACW	X	AGST	70	FAC	X
ACMA	25	FACW	X	RULA	5	FACU+	X	RARE	25	FAC	
CRDO	15	FAC						RUDI	15	FACU	
PREM	10	FACU						PHAR	7	FACW	
								GEMA	5	FACW	
								RONU	5	FAC	
								DAGL	tr	FACU	
								MEAR	tr	FACW-	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/5 = 80%

SOILS

Mapped soil type: Sifton gravelly loam | Is mapped soil on hydric soils list?: Yes ___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10 YR 3/2	silty clay loam	none
5-15	10 YR 2/2	silty clay loam	none

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?						
Drainage Patterns?				***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 26-4

Field Investigator: J. Fromm	Date: 8/9/99	Weather: Sunny, clear mid-80s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Turner City Park, near southwest end of ballfield, in unmowed area.

Landscape Description: Terrace behind a dike that runs along Mill Creek in most of park.

Surrounding Land Use: Public park

Atypical Situation? No X Yes ___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	80	UPL	X	RUDI	90	FACW	X	SYAL	25	FACU	X
PSME	20	FACW	X	SYAL	20	FACU		RUUR	20	FACU	X
				PHCA	10	FACW-		AGST	10	FAC	
				RHPU	10	FAC-		HYRA	5	FACU	
				AMAL	10	FACU		GEMA	2	FACW	
				RONU	10	FAC					
				CRDO	5	FAC					

Percent of dominant species that are OBL, FACW, and/or FAC? 2/5 = 40%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes ___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10 YR 3/2	silty loam	none
4-13	10 YR 3/2	very gravelly silty loam	none

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks						
Sediment Deposits?						
Drainage Patterns?				***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: This plot is the upland end of a transect across the dike and towards Mill Creek.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 26-5

Field Investigator: J. Fromm	Date: 8/9/99	Weather:	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Turner City Park on streamward side of dike, 5' from right edge of water

Landscape Description: Dike on floodplain. Mill Creek splits around channel island at park.

Surrounding Land Use:

Atypical Situation? No_X_ Yes___ (Describe type and effect) Dike is old.

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	5	UPL	X	RUDI	25	FACU	X	PHAR	60	FACW	X
								RONU	10	FAC	
								FEAR	5	FAC	
								TAVU	5	NL	
								VETH	5	UPL	
								DACA	2	UPL	

Percent of dominant species that are OBL, FACW, and/or FAC? 1/3 = 33%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-9	10 YR 3/2	very gravelly silty loam	none
9-13	10 YR 3/2	silty loam	

Other comments: Soils are not hydric.

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?			At what depth?			
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?		X		*Saturation within upper 12" is key.*		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: Plot characterizes conditions on streamward side of dike. Looking for wetland edge along creek. No oxidized rhizospheres.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 26-6

Field Investigator: J. Fromm	Date: 8/9/99	Weather: Hot and sunny	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other:

Landscape Description: Same as 26-5 except two feet from right edge of water.

Surrounding Land Use: Same as 26-5

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	5	FACW	X	RUDI	5	FACU	X	PHAR	100	FACW	X

Percent of dominant species that are OBL, FACW, and/or FAC? 2/3 = 67%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10 YR 3/2	silty loam	none
4-8	10 YR 3/2	very gravelly silty loam	
8-15	10 YR 4/1	silty clay loam	med, common, distinct 7.5 YR 4/6 SIM ped interiors

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth? 13"	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 26-7

Field Investigator: J. Fromm	Date: 8/9/99	Weather: Sunny, clear	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Turner City Park, about 65' from right edge of water, 50' from parking lot.

Landscape Description: High floodplain between channel to constructed dike. Natural low-lying area behind natural levee.

Surrounding Land Use: Residential, park

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	80	UPL	X					AGST	80	FAC	X
FRLA	20	FACW	X					DAGL	25	FACU	X
								RARE	tr	FACW	
								GEMA	tr	FACW	

Percent of dominant species that are OBL, FACW, and/or FAC? 2/4 = 50%

SOILS

Mapped soil type: Sifton gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8"	10 YR 3/2	silty clay loam	none
8-15"	10 YR 3/2	silty clay loam	none

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: The area is a mix of FRLA & QUGA Forest with FRLA rooted in the gentle swales and QUGA found on uplands. Soils are out, might have been a wetland prior to diking along park.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 27-1

Field Investigator: J. Fromm	Date: 9/10/99	Weather: Clear, sunny, 70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: North Central Turner, about 30' west of Val View Dr

Landscape Description: Base of footslope near junction with terrace/floodplain deposits.

Surrounding Land Use: Residential

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	80	UPL	X					AVSA	40	UPL	X
PREM	5	FACU						FEAR	10	FAC-	
								PHAR	2	FACW	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/2 = 0%

SOILS

Mapped soil type: Nekia very stony silty clay loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	5 YR 3/2	gravelly silty loam	coarse fraction is crushed rock and rounded gravel
5-13	5 YR 3/2	silty clay loam	native soil underlying fill associated with road/home construction.

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: This plot typifies conditions at the base of footslope. Fill has been placed on south edge of lot this summer, but conditions at similar landscape (infilled) suggest it was not wetlands.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 27-2

Field Investigator: J. Fromm	Date: 9/10/99	Weather: Hot and sunny	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Same as 28-1 except 50' west of Val View Drive

Landscape Description: Break in slope where terrace and footslope meet.

Surrounding Land Use: Residential

Atypical Situation? No_X_ Yes___ (Describe type and effect) Has been graded in past, but sat as vacant land for awhile.

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								FEAR	60	FAC-	X
								DACA	15	UPL	
								PHAR	5	FACW	
								HYRA	5	FACU	
								RULA	tr	FACU	
								CIAR	tr	FACU+	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/1 = 0%

SOILS

Mapped soil type: Nekia very strong silty clay loam | Is mapped soil on hydric soils list?: Yes ___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-3	7.5 YR 3/2	gravelly silty clay loam	
3-14	7.5 YR 3/2	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?				***Saturation within upper 12" is key.***		

Comments: Grass is relatively green here suggesting seeps from hillslope drainage. Relatively wetter than rest of terrace. No rushes or sedges seen.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Plot typifies disturbed conditions. QUGA noted at similar landscape position on adjacent lot. This plot is located in probably the wettest spot on the site.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 28-1

Field Investigator: J. Fromm	Date: 9/15/99	Weather: Sunny, high haze	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Central Turner northeast of Franzen Reservoir.

Landscape Description: Side slope in Waldo Hills

Surrounding Land Use: Undeveloped (public open space), agricultural, residential

Atypical Situation? No___ Yes_X_ (Describe type and effect) Recently planted to trees PSME

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								PSME	100	FACU	X
								PLMA	5	FACU	
								DACA	tr	UPL	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/1 = 0%

SOILS

Mapped soil type: Nekia stony silty clay loam, 2-12% slopes | Is mapped soil on hydric soils list?: Yes ___ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-9	7.5 YR 3/2	silty clay loam	
9-15	7 YR 3/3	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Plot characterizes conditions in the tree plantation installed during the spring.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 28-2

Field Investigator: J. Fromm	Date: 9/15/99	Weather: Sunny, high haze, 70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Central Turner, ~300' northwest of Franzen Reservoir

Landscape Description: Side slope in Waldo Hills

Surrounding Land Use: Agricultural, public use, residential

Atypical Situation? No___ Yes _X_ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	80	UPL	X	SYAL	30	FACU	X	PTAQ	25	FACU	X
				RUDI	25	FACU	X	FEAR	20	FAC-	X
				COCO	20	FACU	X	RUUR	15	FACU	X
				CYSC	5	UPL		RHDI	5	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/7 = 0%

SOILS

Mapped soil type: Nekia very stony silty clay loam, 2-12% slopes | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-7	5 YR 3/2	silty clay loam	
7-15	5 YR 3/3	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Plot characterizes the open areas in the undisturbed forest of this landscape position.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 29-1

Field Investigator: J. Fromm	Date: 9/15/99	Weather: Sunny, clear	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: North edge of farm pond in east central Turner, ~700' west of Witzel.

Landscape Description: Swale on side slope of a constructed farm pond. This swale is inflow for other areas on farm. Plot is 5' from edge of water.

Surrounding Land Use: Rural residential agricultural; grazing, tree plantation.

Atypical Situation? No___ Yes X (Describe type and effect) Severely grazed

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								AGST	40	FAC	X
								CYEC	30	UPL	X
								RUCR	4	FAC+	

Percent of dominant species that are OBL, FACW, and/or FAC? ½ = 50%

SOILS

Mapped soil type: Nekia silty clay loam, 2-7% slopes | Is mapped soil on hydric soils list?: Yes___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	5 YR 3/3	gravelly silty clay loam	
4-13	5 YR 3/3	gravelly silty clay loam	

Other comments: Subsurface disturbed by pond installation. Some pieces of very weathered basalt in soil pit.

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: Plot characterizes conditions in low lying swale discharging upslope drainage to farm pond. Plot placed at what appears to be normal high water around pond. Grazed to water's edge.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 29-2

Field Investigator: J. Fromm	Date: 9/15/99	Weather: Sunny, clear	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: East central Turner, about 50' north of farm pond.

Landscape Description: Inflow swale on slope above constructed farm pond, downstream from spring which is water source.

Surrounding Land Use: Agriculture (same as 29-1)

Atypical Situation? No___ Yes_X_ (Describe type and effect) Severly grazed

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RULA	tr	FACU+		CYEC	25	UPL	X
								RUCA	5	FAC+	
								CIAR	2	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/1 = 0%

SOILS

Mapped soil type: Nekia silty clay loam, 7-12% slopes | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	5 YR 3/1	gravelly silty clay loam	com fine dist redox conc 2.5 YR 3/6
8-13	5 YR 3/2	silty clay loam	common, fine, dist redox conc 2.5 YR 3/6

Other comments: Disturbed by pond construction

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments: Spring discharge is also piped to the pond below the berm.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND		X

Comments: Site is heavily grazed. No shrub layer. Forb layer is close-cropped grass. Cattle water at spring flow captured in a bath tub, and then is piped to pond downslope. Flow << 1 gal/min in Sept.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 29-3

Field Investigator: J. Fromm	Date: 9/15/99	Weather: Sunny, hot	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: About 1,200' west of Witzel Rd.

Landscape Description: Swale on sideslope

Surrounding Land Use: Agricultural: Christmas tree plantation PSME

Atypical Situation? No___ Yes_X_(Describe type and effect) Just recently planted (this year) to trees.

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								AMRE	80	FACU+	X
								PSME	50	FACU	X
								VETH	15	UPL	
								PLMA	2	FACU+	
								VETH	2	UPL	
								DACA	2	UPL	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/2 =- 0%

SOILS

Mapped soil type: Nekia silty clay loam, 7-12% slopes | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	7.5 HR 3/2	silty clay loam	
8-15	7.5 YR 4/2		

Other comments: Horizon disturbed by ripping associated with tree planting

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: Plot characterizes conditions in the low lying, recently disturbed swale. It's relatively wet as evidenced by lush weeds in this location.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 31-1

Field Investigator: J. Fromm	Date: 8/18/99	Weather: Overcast	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: ~300' north of Delaney Rd & 15' from right edge of water Mill Creek

Landscape Description: Swale across floodplain of Mill Creek. Drainage flows under Delaney Rd in a box culvert.

Surrounding Land Use: Same as 37-1

Atypical Situation? No_X_ Yes ___ (Describe type and effect) But adjacent to 8' of recent fill.

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	15	FACW	X	COST	10	FACW	X	PHAR	50	FACW	X
								LOCO	35	FAC	X
								POHY	25	OBL	
								JUEF	20	FACW	
								SODU	15	FAC+	
								EPCI	2	FACW-	
								PAVI	tr	FAC-	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/4 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	7.5 YR 3/2	silty clay loam	
4-8	10 YR 3/2	gravelly silty clay loam	abundant, medium, prominent, 7.5 YR 4/4, redox concentrations
8-15	10 G 4/1	gravelly silty clay loam	abundant, medium, prominent, 7.5 YR 4/4, redox concentrations in matrix

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Upland forest: QUGA, PREM, PSME
Wetland forest: FRLA, ALRU (on rocky soils)

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 34-1

Field Investigator: J. Fromm	Date: 9/15/99	Weather: Sunny, high haze	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: About 15' from perimeter fence around Franzen Reservoir

Landscape Description: Sideslope northeast of Franzen Reservoir

Surrounding Land Use: Public, agricultural, residential

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	40	UPL	X	SYAL	65	FACU	X	RUUR	30	FACU	X
PSME	35	FACU	X	COCO	25	FACU	X	FEAR	15	FAC-	X
ACMA	15	FACU		ACMA	5	FACU		RHDI	5	UPL	
PREM	5	FACU		ILAQ	2	FACU		POMU	5	FACU	
				RUDI	tr	FACU					

Percent of dominant species that are OBL, FACW, and/or FAC? 0/6 = 0%

SOILS

Mapped soil type: Nekia silty clay loam, 12-20% slopes | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-7	5 YR 3/2	silty clay loam	
7-15	5 YR 3/3	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes undisturbed conditions at this landscape position. Pacific madrone seen in oak woodland near ridge crest.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 35-1

Field Investigator: J. Fromm	Date: 9/26/99	Weather: Sunny, high haze	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: East central Turner about 60' south of farm pond.

Landscape Description: Swale on sideslope.

Surrounding Land Use: Agricultural, low density residential

Atypical Situation? No___ Yes_X_ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	10	UPL	X	RULA	tr	FACU+		CYEC	35	UPL	
ACMA	5	FACU	X					FEAR	20	FAC-	X
								DAGL	15	FACU	X
								CIAR	tr	FACU+	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/5 = 0%

SOILS

Mapped soil type: Nekia silty clay loam, 2-7% slopes | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-7	7.5 YR 3/3	gravelly silty clay loam	
bedrock			

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments: Pond discharge has created a channel 0.5-1' deep and 2-3' wide. Not much erosion.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: Plot characterizes the low lying area that the farm pond discharges to. It's open and grazed.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 36-1

Field Investigator: J. Fromm	Date: 9/14/99	Weather:	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: The undeveloped portion of 6097 Glenwild Ct SE

Landscape Description: Near crest of hill.

Surrounding Land Use: Residential

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	50	UPL	X	RUDI	25	FACU	X	RUUR	20	FACU	X
ACMA	45	FACU	X	COCO	15	FACU	X	RHDI	15	UPL	X
				SYAL	15	FACU	X	CADE	5	FACU	
				ACMA	10	FACU		PTAQ	5	FACU	
				PREM	5	FACU					

Percent of dominant species that are OBL, FACW, and/or FAC? 0/7 = 0%

SOILS

Mapped soil type: Nekia silty clay loam, 7-12% slopes | Is mapped soil on hydric soils list?: Yes ___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	7.5 YR	silty clay loam	
5-10	7.5 YR	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments:

intentionally blank

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 38-1

Field Investigator: J. Fromm	Date: 8/18/99	Weather:	City/County: Turner/ Marion	State: OR
Plot Location: Township Range Section		Other: ~75' north of Delaney Road		
Landscape Description: Terrace or high floodplain				
Surrounding Land Use:				
Atypical Situation? No___ Yes__ (Describe type and effect)				

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	80	UPL	X	SYAL	20	FACU+		Agrosti's AGST	35	FAC	X
THPL	tr	FAC		RUPI	5	FACU	X	PHPR	20	FAC-	X
				RULA	tr	FACU+	X	FEAR	20	FAC-	X
				Rose	tr			DACA	15	UPL	
								RHDI	5	UPL	
								DAGL	5	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 1/6 = 17%

SOILS

Mapped soil type: Clackamas gravelly loam	Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	10 YR 3/2	gravelly loam	
8-13	10 YR 3/2	gravelly loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		*Saturation within upper 12" is key.*		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 41-1

Field Investigator: J. Fromm	Date: 9/14/99	Weather: Clear, hot	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: About 35' south of Glenwild Ct SE at 5998 Glenwild Ct SE

Landscape Description: Gentle sideslope.

Surrounding Land Use: Residential

Atypical Situation? No X Yes __ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	65	UPL	X	SYAL	30	FACU	X	RUUR	20	FACU	X
PSME	25	FACU	X	PSME	15	FACU	X	FEAR	8	FAC-	
ACMA	15	FACU						CADE	5	FACU	
								RHDI	5	UPL	
								MANE	2	FACU	
								DAGL	2	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/5 = 0%

SOILS

Mapped soil type: Nekia silty clay loam, 7-12% slopes | Is mapped soil on hydric soils list?: Yes ___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
+1-0			duff
0-3	7.5 YR 3/2	silty clay loam	
3-9	7.5 YR 3/3	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 42-1

Field Investigator: J. Fromm	Date: 9/14/99	Weather: Clear, mid-80s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Drainage swale between 6097 & 6098 Glenwild Ct SE

Landscape Description: Swale near the hillcrest. Possibly seep during part of year.

Surrounding Land Use: Residential

Atypical Situation? No X Yes ___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				ACMA	15	FACU	X	HOLA	30	FAC	X
								FEAR	25	FAC-	X
								JUEF	10	FACW	
								JUBU	5	FACW	

Percent of dominant species that are OBL, FACW, and/or FAC? 1/3 = 33%

SOILS

Mapped soil type: Nekia silty clay loam, 12-20% slopes | Is mapped soil on hydric soils list?: Yes ___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	7.5 YR 3/2	silty clay loam	few fine redox conc 7.5 YR 5/6 along roots
4-15	7.5 YR 3/2	silty clay loam	med com redox conc 7.5 YR 5/6 along roots

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?	X	
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND		X

Comments: Plot typifies conditions in the swale. Vegetation has been sprayed. Probably a small wetland in the wettest part of the ditch.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 42-2

Field Investigator: J. Fromm	Date: 9/14/99	Weather: Sunny, clear, mid-80s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Lowest part of lot at 5998 Glenwild Ct SE

Landscape Description: Hillslope, gently undulating

Surrounding Land Use: Residential

Atypical Situation? No_X_ Yes___ (Describe type and effect) Understory vegetation removed

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
PSME	85	FACU	X	COCO	40	FACU	X	RUUR	30	FACU	X
QUGA	5	UPL		SYAL	10	FACU		POMU	25	FACU	X
COCO	2	FACU		PREM	3	FACU		OSCH	15	UPL	X
ACMA	tr	FACU		ILAQ	tr	UPL		MANE	5	FACU	
								CADE	tr	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/5 = 0%

SOILS

Mapped soil type: Nekia silty clay loam, 7-12% slopes | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	7.5 YR 3/3	silty clay loam	+l-0 duff
4-15	7.5 YR 3/3	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Plot typifies undisturbed forested vegetation at this landscape psoition. Shrub and forb layer observed on other side of fence where it was undisturbed.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 44-1

Field Investigator: J. Fromm	Date: 9/3/99	Weather: Sunny, clear, upper 70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: West central Turner near Brich to 6th Streets, 12' east of Turner Bypass

Landscape Description: Floodplain, terrace of Mill Creek/Santiam distributary system.

Surrounding Land Use: Agricultural, residential

Atypical Situation? No X Yes ___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	85	FACW	X	RUDI	30	FACU	X	POMU	10	FACU	X
CRDO	5	FAC		CRDO	25	FAC	X	CADE	2	FACU	
				SYAL	25	FACU	X	GEMA	2	FACW-	
				OECE	10	FACU					
				RONU	5	FAC					

Percent of dominant species that are OBL, FACW, and/or FAC? 2/5 = 40%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No ___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10 YR 3/2	silty clay loam	
5-13	10 YR 3/2	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: Soils are marginal but not hydric. Plot typifies conditions in the ash forest between pasture and Turner Bypass.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 44-2

Field Investigator: J. Fromm	Date: 9/3/99	Weather: Sunny, clear, upper 70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Same as 44-1

Landscape Description: Same as 44-1, except plot is located about 1' from right edge of water

Surrounding Land Use: Agricultural, residential

Atypical Situation? No X Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	10	FACW	X	PHCA	85	FACW-	X	POMU	tr	FACU	
				CRDO	30	FAC	X				
				RONU	10	FAC					
				SYAL	10	FACU					

Percent of dominant species that are OBL, FACW, and/or FAC? 3/3 = 100%

SOILS

Mapped soil type: Courtney gravelly silty loam | Is mapped soil on hydric soils list?: Yes X No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10 YR 3/2	silty clay loam	
4-14	10 YR 3/2	silty clay loam	fine common district redox conc 7.5 YR 4/4

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?	X		At what depth? 11			
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?				***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: The edge conditions along the Turner Bypass resemble what one would expect to see along a canal. Plot typifies conditions on the sloping edge (3-4' wide) along Mill Creek bypass.

Turner Local Wetlands Inventory: Wetland Determination Data Form

PLOT # 44-3

Field Investigator: J. Fromm	Date: 9/3/99	Weather: sunny, clear, 70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Same as 44-1, east bank of Turner Bypass between Birch/Boise St.

Landscape Description: Flood/terrace fan surfaces, about 15' right edge of Mill Creek.

Surrounding Land Use: Agriculture, residential (low density)

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
POBA	75	FAC	X	CRDO	65	FAC	X	RUUR	10	FACU	X
				SYAL	40	FACU	X				
				OECE	15	FACU					
				RUDI	15	FACU					

Percent of dominant species that are OBL, FACW, and/or FAC? 2/4 = 50%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10 YR 3/2	gravelly silty clay loam	
6-15	10 YR 3/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND		X

Comments: Plot typifies conditions in relatively high forest between Turner Bypass and pasture.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 44-4

Field Investigator: J. Fromm	Date: 9/3/99	Weather: Sunny, clear, 70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Same as 44-1, about 125' east of Turner Bypass

Landscape Description: Fan terrace/floodplain

Surrounding Land Use:

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	75	FACW	X	CRDO	40	FAC	X	Graminae	10		
				SYAL	35	FACU	X				
				FRLA	20	FACW	X				
				RUDI	10	FACU					

Percent of dominant species that are OBL, FACW, and/or FAC? ¾ = 75%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10 YR 3/2	sgcl	
5-14	10 YR 3/2	sgcl	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Typifies conditions on the gently rolling, forested, floodplain surface. Forested area has been lightly grazed. QUGA seen in adjacent, open pasture.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 44-5

Field Investigator: J. Fromm	Date: 9/3/99	Weather: Sunny, clear, 70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Same as 44-1, 75' west of pasture edge

Landscape Description: Depression, very shallow, on floodplai n

Surrounding Land Use: Agricultural, residential

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	80	FACW	X	ROGY	10	FACU	X	CALE	25	FACW-	X
RHPU	5	FAC-		CRMO	5	FACU+	X	CADE	10	FACU	X
								DAGL	5	FACU	
								PRVU	5	FACU+	
								RULA	tr	FACU	
								POMU	tr	FACU	
								RHDI	tr	UPL	

Percent of dominant species that are OBL, FACW, and/or FAC? 2/5 = 40%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-7	10 YR 3/2	gravelly silty clay loam	few fine dist redox conc 10 YR 3/6 ped int
7-13	10 YR 3/2	gravelly silty clay loam	com fine dist redox conc 7.5 YR 4/4 ped int

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?						
Water Marks	X					
Sediment Deposits?						
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 44-6

Field Investigator: J. Fromm	Date: 9/3/99	Weather: Sunny, clear, 70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Same as 44-1 ~20' from east of Turner Bypass.

Landscape Description: Floodplain - low lying swale on back side of dredge adjacent to Turner Bypass.

Surrounding Land Use: Agricultural, residential

Atypical Situation? No_X_ Yes ___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	50%	FACW	X	PHCA	35	FACW-	X				
SALA	15	FACW+	X	SYAL	15	FACU	X				
				SPDO	15	FACW	X				
				ROGY	10	FACU					
				RUDI	5	FACU					

Percent of dominant species that are OBL, FACW, and/or FAC? 4/5 = 80%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No ___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10 YR 4/2	silty loam	
4-15	10 YR 4/1	silty clay loam	med com dist redox conc (10 YR 5/6) on ped surfaces

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?	X	
Saturated Soils?		X	At what depth?			
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Typifies low lying, wetter portions of forest.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 44-7

Field Investigator: J. Fromm	Date: 9/3/99	Weather: Sunny, clear, 70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Same as 44-1, but 100 feet east of Turner Bypass

Landscape Description: Relatively high areas in floodplain.

Surrounding Land Use: Residential

Atypical Situation? No___ Yes_X_ (Describe type and effect) Landscaped area around apartments

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
poplar			X	SAYL	75	FACU	X	CALE	10	FACW-	X
QUGA	85	UPL	X	CRMO	25	FACU+	X	DAGL	5	FACU	
								PHPR	20	FAC-	X

Percent of dominant species that are OBL, FACW, and/or FAC? 1/5=20%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10 YR 3/2	gravelly silty clay loam	coarse fragment is angular basalt rock: fill
5-15	10 YR 3/2	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Typifies the less disturbed vegetation on high floodplain of Mill Creek in this location.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 44-8

Field Investigator: J. Fromm	Date: 9/3/99	Weather: Sunny, clear, 70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: West, central Turner; south side of Mill Creek, east of 5th Street, 2' from left edge of Mill Creek.

Landscape Description: Escarpment slope adjacent to channel

Surrounding Land Use: Residential

Atypical Situation? No X Yes __ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
ALRU	35	FAC	X	POCU	40	FACU	X	PHAR	25	FACW	X
SALA	30	FACW-	X	RUDI	10	FACU	X	EPWA	5	FACW-	
CRDO	20	FAC	X								
FRLA	5	FACW									

Percent of dominant species that are OBL, FACW, and/or FAC? 4/6 = 67%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No __

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10 YR 3/2	silty clay loam	fine, com, dist red conc @ root channels
6-15	10 YR 3/1	silty clay loam	fine

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?				***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Typifies conditions on lower portion of slope next to channel.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 44-9

Field Investigator: J. Fromm	Date:	Weather:	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Same as 44-8, but 25' from Mill Creek.

Landscape Description: High flood plain.

Surrounding Land Use: Residential

Atypical Situation? No___ Yes X (Describe type and effect) Landscaped area around apartments

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
PREM	25	FACU	X	RUDI	70	FACU	X	PHAR	15	FACW	X
Lombardy poplar	20	NI		CRDO	5	FAC		AGST	10	FAC	X
								DACA	5	UPL	

Percent of dominant species that are OBL, FACW, and/or FAC? 2/4 = 50%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10 yr 3/2	gravelly silty loam	coarse fragment is angular basalt rock: fill
5-15	10 YR 3/2	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Typifies the less disturbed vegetation on high floodplain of Mill Creek in this location.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 45-1

Field Investigator: J. Fromm	Date: 8/25/99	Weather: Sunny, scattered clouds	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Burkland Park

Landscape Description: Terrace/alluvial fan of the Santiam/Mill Creek system of distributaries.

Surrounding Land Use: Residential and industrial

Atypical Situation? No_X_ Yes___ (Describe type and effect) The sit is maintained in lawn.

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	10	UPL	X					cultivated lawn			

Percent of dominant species that are OBL, FACW, and/or FAC? **0/1=0%**

SOILS

Mapped soil type: Sifton gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	7.5 YR 3/2	gravelly loam	
6-15	7.5 YR 3/2	gravelly loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Surrounding vegetation on less disturbed sites is QUGA ACMA ornamentals.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 45-2

Field Investigator: J. Fromm	Date: 9/1/99	Weather: Sunny, hot	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Central Turner, vacant lot between 3rd St & railroad to 25' south of Mill Creek.

Landscape Description: Floodplain. Has been filled in past. Mowed.

Surrounding Land Use: Residential, commercial, industrial

Atypical Situation? No___ Yes_X_ (Describe type and effect) Mowed, vegetation estimated from adjacent, less disturbed site.

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
ACMA	2	FACU	X	RUDI	60	FACU	X	FEAR	55	FAC-	X
				CYSC	35	UPL	X	AGST	25	FAC	X
								DACA	20	UPL	
								HYRA	10	FAC	
								AVSA	3	UPL	

Percent of dominant species that are OBL, FACW, and/or FAC? 1/5 = 20%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	7.5 YR 3/2	gravelly loam	
4-12	7.5 YR 3/3	gravelly loam	

Other comments: Angular rock fragments in "soil" suggest fill at site as does surface topography.

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Plot typifies conditions on upper portions of fill pad. Vegetation inferred by examining unmowed edge on north end of parcel.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 45-3

Field Investigator: J. Fromm	Date: 9/1/99	Weather: Sunny, hot	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Central Turner in Parcel 704, between railroad & 4th St. 20' west of railroad bridge 4' from left edge of water.

Landscape Description: Floodplain, slope between channel and terrace fill

Surrounding Land Use: Residential, commercial, industrial

Atypical Situation? No X Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	25	FACW	X	SPDO	10	FACW	X	PHAR	95	FACW	X
ALRU	5	FAC		RUDI	5	FACU	X	RARE	5	FACW	
				SALA	5	FACW+	X	SODU	5	FAC+	
								COAR	tr	UPL	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/5 = 80%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	10 YR 3/2	gravelly silty loam	
8-15	10 YR 3/2	silty loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?				***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: Plot typifies conditions on lower sideslopes within about 6' of channel.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 45-4

Field Investigator: J. Fromm	Date: 9/1/99	Weather: Hot, sunny	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Same as 45-3 but 1' from left edge of water

Landscape Description: Filled floodplain. On escarpment slope between channel and floodplain.

Surrounding Land Use: Residential, commercial, industrial

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	25	FACW	X	SPDO	10	FACW	X	PHAR	95	FACW	X
ALRU	5	FAC		SALA	5	FACW+	X	RARE	5	FACW	
				RUDI	5	FACU	X	SODU	5	FAC+	
								COAR	tr	UPL	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/5 = 80%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10 YR 3/1	very gravelly loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?	X		To what depth? 2"	Oxidized		
Saturated Soils?	X		At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			*Saturation within upper 12" is key.*		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Wetland soils did not occur until the lowest parts of creek bank.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 46-1

Field Investigator: J. Fromm	Date: 9/17/99	Weather: Partly sunny	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Southeast Turner at Marion St. Bridge over Mill Creek, 25' downstream 3' REOW

Landscape Description: Escarpment slope between channel and floodplain, 5-8' between water level and floodplain surface.

Surrounding Land Use: Public (school) to semi-public (church grounds)

Atypical Situation? No X Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
ALRU	85	FAC	X	PHCA	5	FACW-	X	PHAR	90	FACW	X
SALA	5	FACW+		ACMA	2	FACI	X	RARE	25	FACW	
				FRLA	2	FACW	X	BIFR	5	FACW+	
								POHY	5	OBL	
								CAOB	5	OBL	
								GEMA	1	FACW-	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/5 = 80%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-7	10 YR 3/2	gravelly loam	
7-15	N 4/__	gravelly silty loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?			To what depth?	Oxidized		
Saturated Soils?			At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Where Marion St bridge crosses Mill Ck is an area (just downstream) where canopy closure over full width of stream occurs. Good local example of goal. Trees are ALRU, FRLA. Scattered QUGA & ACMA. The oak and maple are rooted on upper floodplain but their canopies extend across creek, too.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 46-2

Field Investigator: J. Fromm	Date: 9/17/99	Weather: Hot, sunny	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Same as 46-1 except 75' downstream of bridge, 15' REOW

Landscape Description: Top of escarpment between channel of floodplain.

Surrounding Land Use: Same as 46-1

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
ACMA	55	FACU	X	CYSC	5	UPL	X	FEAR	25	FAC-	X
FRLA	40	FACW	X					AGST	20	FAC	X
								DAGL	5	FACU	
								CIVU	2	FACU	
								RUDI	tr	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 2/4 = 50%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10 YR 3/2	silty clay loam	
6-13	10 YR 3/2	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?				***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: Characterizes less disturbed conditions on floodplain. Understory vegetation is mowed.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 46-3

Field Investigator: J. Fromm	Date: 9/17/99	Weather: Sunny, mid-70s, clear	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Central Turner across the creek from Turner School. 5' from right edge of water.

Landscape Description: Floodplain. Here the creek runs along the base of slope, so the floodplain on this side of creek is narrow.

Surrounding Land Use: Public (school), semi-public (church), residential, Franzen Reservoir site

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
ALRU	40	FAC	X	PHCA	40	FACW	X	SODU	30	FAC+	X
ACMA	30	FACU	X					URDI	25	FAC+	
FRLA	20	FACW	X					RARE	25	FACW	
								POHY	25	OBL	
								CYEC	20	UPL	
								BIFR	10	FACW+	
								CAOB	5	OBL	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/5 = 80%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10 YR 3/2	silty loam	
6-15	10 YR 3/1	silty clay loam	med common distinct 7.5 YR 5/6 redox conc

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?	X	
Saturated Soils?	X		At what depth?			
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes conditions on forested floodplain at base of footslope.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 46-4

Field Investigator: J. Fromm	Date: 9/17/99	Weather: Sunny, hot	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: 15 feet upslope of Plot 46-3

Landscape Description: Base of footslope adjacent to floodplain.

Surrounding Land Use: Semi-public, public residential

Atypical Situation? No X Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	60	UP	X	ILAQ	tr	UPL		HEHE	45	UPL	X
ACMA	30	FACU	X					CADE	5		

Percent of dominant species that are OBL, FACW, and/or FAC? **0/3=0%**

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-7	5 YR 3/3	silty clay loam	
7-15	5 YR 3/2	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Characterize conditions on the base of the footslope.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 46-5

Field Investigator: J. Fromm	Date: 9/17/99	Weather: Sunny, mid-70s, clear	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Southeast Turner on west end of church grounds.

Landscape Description: Sideslope adjacent to floodplain.

Surrounding Land Use: Forest land, some public (church and reservoir site)

Atypical Situation? No___ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
PSME	85	FACU	X	COCO	20	FACU	X	HEHE	95	UPL	X
ACMA	25	FACU	X	ACMA	15	FACU	X	POMU	10	FACU	
				OECE	5	FACU		RUUR	5	FACU	
				ILAQ	5	UPL					

Percent of dominant species that are OBL, FACW, and/or FAC? 0/5 = 0%

SOILS

Mapped soil type: Nekia silty clay loam, 12-20% slopes | Is mapped soil on hydric soils list?: Yes ___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-9	5 YR 3/3	gravelly silty clay loam	Basalt Bedrock fragments
9-15	5 YR 3/2	gravelly silty clay loam	Basalt Bedrock fragments

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes undisturbed conditions in mature coniferous forest.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 47-1

Field Investigator: J. Fromm	Date: 9/17/99	Weather: Sunny, clear	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Southeast Turner on Free Methodist Compound about 12' east of road and culvert

Landscape Description: Swale on Mill Creek floodplain. Could be an old channel of creek prior to existing course. Swale can be traced across the entire holding on topo map suggesting overflow channel.

Surrounding Land Use: Church convention facilities, residential

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
ALRU	20	FAC	X	FRLA	15	FACW	X	POHY	35	OBL	X
FRLA	15	FACW	X					RARE	15	FACW	
								OESA	15		
								LEOR	15		
								BIFR	10	FAW+	
				VEAM	10	DBL		JUEF	5	FACW	
				JUEF	5	FACW		ATFI	5	FAC	
				LEMI	5	OBL		SODU	5	FAC+	
				IRPS	5	OBL		SPEM	5	OBL	
				HOLA	5			TYLA	2	OBL	

These are all herbs/ vines

Percent of dominant species that are OBL, FACW, and/or FAC? 4/4 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes___ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10 YR 3/3	silty clay loam	
4-10	10 YR 3/2	silty clay loam	common fine distinct 7.5 YR 4/4 redox concentrations
10-15	N4/__	gravelly silty clay loam	

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?	X		To what depth? 6"	Oxidized		
Saturated Soils?	X		At what depth? surface	Rhizospheres?	X	
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes wettest areas of drainage swale.

Turner Local Wetlands Inventory: Wetland Determination Data Form **PLOT # 47-2**

Field Investigator: J. Fromm	Date: 9/17/99	Weather:	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Same as 47-1, but 30' south of channels.

Landscape Description: Same as 47-1. This part of the grounds appears to have some drainage impoundment due to elevated road berm.

Surrounding Land Use: Semi-public (church grounds)

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	40	FACW	X					FEAR	100	FAC-	X
ALRU	15	FAC	X					HYRA	2	FACU	
QUGA	5	UPL									

Comments: Most shrub and herb layer removed by grounds maintenance

Percent of dominant species that are OBL, FACW, and/or FAC? 2/3 = 67%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10 YR 3/4	silty clay loam	
6-15	10 YR 3/1	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?						
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments: Elevated road berm may impound surface drainage. Inferred, grounds are too well maintained to be sure of drift lines.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes the low-lying maintained grounds east of Mill Ck. Difficult to exactly place wetland boundary here, but road probably impounds some water.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 47-3

Field Investigator: J. Fromm	Date: 11/19/99	Weather: Cloudy, cool, rainy	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: East Turner about 175' east of Witzel Road.

Landscape Description: Boundary region between footslope and terrace, underlain by a hydric soil in a swale suggesting on older location of Mill Creek channel.

Surrounding Land Use: Agricultural, residential

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	50	UPL	X	RUDI	60	FACU	X	FEAR	30	FAC-	X
FRLA	35	FACW	X	SYAL	20	FACU	X	CADE	5	FACU	
				RONU	10	FAC					
				CYSC	1	UPL					

Percent of dominant species that are OBL, FACW, and/or FAC? 1/5 = 20%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-10	10 YR 3/2	silty clay loam	
10-15	10 YR 3/2	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 48-1

Field Investigator: J. Fromm	Date: 11/19/99	Weather: Cool, overcast, rainy	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: East Turner, east of Witzel Road.

Landscape Description: Terrace at base of footslope.

Surrounding Land Use: Agricultural, residential

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	80	UPL	X	RUDI	40	FACU	X	FEAR	35	FAC-	X
FRLA	15	FACW		SYAL	35	FACU	X	RAOC	35	FACW	X
				RONU	15	FAC		AGST	25	FAC	X
				RULA	5	FACU+		POMU	2	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 2/6 = 33%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	10 YR 3/1	sandy clay loam	
8-15	10 YR 3/1	sandy clay loam	fine, common, distinct, 7.5 YR 4/4, redox concentrations

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes slightly elevated oak patches within the forested swale.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 48-2

Field Investigator: J. Fromm	Date: 11/19/99	Weather: Cool, cloudy, rainy	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: East Turner, east of Witzel Road.

Landscape Description: Low-lying area on terrace at base of footslope.

Surrounding Land Use: Residential, agricultural

Atypical Situation? No X Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	75	FACW	X	RONU	25	FAC	X	RAOC	75	FACW	X
QUGA	25	UPL	X	RUDI	15	FACU	X	AGST	35	FAC	X
CRDO	10	FAC-		SPDO	5	FACW		FEAR	5	FAC-	
				SYAL	5	FACU					
				RULA	2	FACU+					

Percent of dominant species that are OBL, FACW, and/or FAC? 4/6 = 67%

SOILS

Mapped soil type: Nekia silty clay loam, 2-7% slopes | Is mapped soil on hydric soils list?: Yes ___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-10	10 YR 3/1	silty clay loam	many, fine, distinct, 7.5 YR 4/6, redox concentrations
10-15	10 YR 3/1	silty clay loam	common, fine, distinct, 7.5 YR 4/6, redox concentrations

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?	X	
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes low-lying portions of swale dominated by Oregon white ash.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 48-3

Field Investigator: J. Fromm	Date: 11/19/99	Weather: Cool, overcasty, rainy	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: East Turner, east of Witzel Road.

Landscape Description: Break between the footslope and terrace. Pasture.

Surrounding Land Use: Agricultural, residential

Atypical Situation? No X Yes ___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								AGST	75	FAC	X
								FEAR	25	FAC	X

Percent of dominant species that are OBL, FACW, and/or FAC? 1/2 = 50%

SOILS

Mapped soil type: Nekia silty clay loam, 2-7% slopes | Is mapped soil on hydric soils list?: Yes ___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	7.5 YR 3/3	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes the gently sloping, unmowed, ungrazed, open field upslope of forested swale.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 51-1

Field Investigator: J. Fromm	Date: 9/1/99	Weather: Sunny, clear, mid-70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: South Turner, on north side of Mill Creek Bypass between railroad & 3rd St.

Landscape Description: Turner floodplain of Mill Ck. At this location the Perrin lateral canal was converted to bypass to provide extra capacity for Mill Creek under flooding conditions (Turner Bypass).

Surrounding Land Use: Industrial, agricultural

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
SALA	10	FACW+	X	SALA	50	FACW+	X	LEOR	25	OBL	X
								PHAR	20	FACW	X
								SODU	10	FAC+	
								CYST	10	FACW	
								JUEF	tr	FACW	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/4 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-9	10 YR 3/2	silty loam	
9-15	10 YR 3/1`	silty loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?	X	
Saturated Soils?	X		At what depth?			
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Plot typifies the area adjacent to the Turner Bypass. The industrial facility is located on fill. The edge of the fill pad is 20' from water and slopes steeply.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 51-2

Field Investigator: J. Fromm	Date: 9/1/99	Weather: Sunny, clear, mid-70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: 8' upslope of 51-1

Landscape Description: Same as 51-1, except plot located on sloping margin of fill.

Surrounding Land Use: Industrial, agricultural

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RUDI	85	FACU	X				

Percent of dominant species that are OBL, FACW, and/or FAC? 0/1 = 0%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10 YR 3/2	very gravelly loam	

Other comments: Soil includes aggregate gravel, and concrete chunks

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?	X					
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: The wetland/u;pland margin is defined by break in slope and dominance of RUDI.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 51-3

Field Investigator: J. Fromm	Date: 9/1/99	Weather: Sunny, clear, mid-70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: On parcel #923, north of Turner Bypass between 2 & 3 Streets.

Landscape Description: Terrace, similar to 51-1. Filled long ago.

Surrounding Land Use: Industrial, designated for industrial

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RUDI	90	FACU	X	AGST	5	FAC	X
				RULA	2	FACU+		DISY	2	FAC	X
				POBA	1	FAC		CIAR	1	FACU+	
								RUCR	tr	FAC+	

Percent of dominant species that are OBL, FACW, and/or FAC? 2/3 = 67%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10 YR 3/2	very gravelly loam	75% crushed rock

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 51-4

Field Investigator: J. Fromm	Date: 9/1/99	Weather: Sunny, clear, mid-70s	City/County: Turner/ Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: South Turner, about 10' east of railroad crossing of Turner Bypass.

Landscape Description: Flodoplain, low lying area near confluence of Turner Bypass and ditch running on east side of railroad tracks.

Surrounding Land Use: Industrial

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	10	FACW	X	SALA	15	FACW+	X	PHAR	80	FACW	X
								ECCR	15	FACW	
								JUPA	10	FACW	
								LEOR	5	OBL	
								CYST	2	FACW	

Percent of dominant species that are OBL, FACW, and/or FAC? 3/3 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-2	10 YR 3/1	gravelly silty clay loam	common, medium, redox concentrations, 10 YR 3/4
2-15	N 3/__	silty loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?			To what depth?	Oxidized		
Saturated Soils?	X		At what depth? surface	Rhizospheres?	X	
Drift Lines?						
Water Marks						
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 52-1

Field Investigator: J. Fromm	Date: 9/16/99	Weather: Sunny, clear, 60-70°F	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Southeast Turner about 8' south of Marion Rd and 30' from Mill Creek.

Landscape Description: Roadside ditch in floodplain. Ditch is open to creek.

Surrounding Land Use: Residential and semi-public (church compounds)

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
ALRU	40	FAC	X	CRDO	30	FAC	X	PHAR	100	FACW	X
FRLA	15	FACW	X	PHCA	15	FACW-	X	SODU	15	FAC+	

Percent of dominant species that are OBL, FACW, and/or FAC? 5/5 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10YR 4/2	gravelly silty clay loam	common, fine, distinct 10YR 4/6 redox concentrations
4-13	10YR 4/1	gravelly silty clay loam	common, fine, distinct 10YR 4/6 redox concentrations

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments: Hydrology sustained by flooding from creek and surface drainage. The section of ditch extends from Tabernacle Lane to creek. Flow east of Tabernacle Ln has been culverted under Marion Rd to the ditch on north side of roadway.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes conditions in the bottom of ditch. Vegetation in ditch is routinely mowed.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 52-2

Field Investigator: J. Fromm	Date: 9/16/99	Weather: Sunny, warm	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Same as 51-1, but on higher, level part of floodplain.

Landscape Description: Same as 51-1.

Surrounding Land Use: Same as 51-1

Atypical Situation? No___ Yes_X_ (Describe type and effect) This part of grounds is mowed.

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
QUGA	40	UPL	X	SYAL	35	FACU	X	Graminae	95		
PREM	10	FACU	X	RHDU	15	FAC-	X	RUUR	10	FACU	X
				ACMA	5	FACU		HOLA	10	FAC	X
								FEAR	5	FAC-	X

Percent of dominant species that are OBL, FACW, and/or FAC? 1/7 = 14%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10YR 3/2	gravelly silty clay loam	
6-12	10 YR 3/2	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes conditions on maintained, higher parts of grounds and natural vegetation at top of ditch.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 52-3

Field Investigator: J. Fromm	Date: 9/16/99	Weather: Sunny, hot	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: South Turner

Landscape Description: Floodplain protected by dike about 85' southwest of compound buildings.

Surrounding Land Use: Semi-public church grounds

Atypical Situation? No___ Yes_X_ (Describe type and effect) Mowed

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
POBA	40	FAC	X	probably				Unknown Graminae	95		
FRLA	15	FACW	X	RUDI if				HYRA	20	FACU	
				not mowed							

Percent of dominant species that are OBL, FACW, and/or FAC? 2/2 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-10	10YR 3/2	gravelly loam	
10-13	10YR 3/2	gravelly loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments: Glood debris is probably removed as part of grounds maintenance.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Compound composed of large central church, bunkhouses, cabins, residences, offices, RV hookups, lawns, paths, volleyball court, bathroom.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 52-4

Field Investigator: J. Fromm	Date: 9/16/99	Weather: Sunny, hot	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Turner Memorial Tabernacle grounds.

Landscape Description: Floodplain, somewhat protected from flooding by a dike.

Surrounding Land Use: Semi-public church grounds

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	50	FACW	X	PHCA	85	FACW-	X	DISY	tr	FAC	
QUGA	20	UPL	X	SYAL	20	FACU					
				RUPI	10	FACU					

Percent of dominant species that are OBL, FACW, and/or FAC? 2/3 = 67%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	10YR 3/2	gravelly silty clay loam	
8-13	10YR 3/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		
Saturated Soils?		X	At what depth?			
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?						
Drainage Patterns?				***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 52-5

Field Investigator: J. Fromm	Date: 9/16/99	Weather: Sunny, hot	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Same as 52-4 about 125' from creek

Landscape Description: Floodplain, somewhat protected from flooding by a dike.

Surrounding Land Use: Semi-public church grounds

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	75	FACW	X	PHCA	70	FACW-	X	CYEC	30	UPL	X
				SYAL	20	FACU					
				AMAL	10	FACU					
				OECE	5	FACU					
				CRDO	5	FAC					
				FRLA	5	FACW					

Percent of dominant species that are OBL, FACW, and/or FAC? 2/3 = 67%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10YR 3/2	silty clay loam	
5-12	10YR 3/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 52-6

Field Investigator: J. Fromm	Date: 9/16/99	Weather: Sunny, hot	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Same as 52-4 but 4' from right edge of Mill Creek.

Landscape Description: Between creek and dike on floodplain.

Surrounding Land Use: Same as 52-4

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
SALA	65	FACW+	X	RONU	20	FAC	X	PHAR	80	FACW	X
ALRU	25	FAC	X	RUDI	5	FACU	X				

Percent of dominant species that are OBL, FACW, and/or FAC? 4/5 = 80%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-9	10YR 3/2	silty loam	
9-15	10YR 4/2	silty loam	fine common dist redox conc (10YR 6/4) roots

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth? 10"	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?				***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Dike seems to be about 4-5' higher than floodplain.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 53-1

Field Investigator: J. Fromm	Date: 9/17/99	Weather: Overcast, 70s	City/County: Marion/Turner	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Southeast Turner near intersection of Witzel to Marion Rds. Ditch.

Landscape Description: Roadside ditch in floodplain. Ditch is 5' deep and 8' wide at top.

Surrounding Land Use: Semi-public (church) and residential

Atypical Situation? No___ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								PHAR	100	FACW	X
								TYLA	15	OBL	
								DISY	5	FAC	

Percent of dominant species that are OBL, FACW, and/or FAC? 1/1 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-13	10YR 3/2	very gravelly cobbly silty loam	common med distinct 10YR 4/6 redox conc

Other comments: No flowing water in ditch on field visit date.

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?	X	
Saturated Soils?		X	At what depth?			
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes conditions in bottom of ditch.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 53-2

Field Investigator: J. Fromm	Date: 9/17/99	Weather: Overcast, 70s	City/County: Marion/Turner	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Same as 53-1

Landscape Description: Same as 53-1, but on top of ditch in flat area.

Surrounding Land Use: Same as 53-1

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
CRDO	5	FAC	X	RUDI	20	FACU	X	FEAR	40	FAC-	X
PYMA	5	UPL	X	RONU	10	FAC	X	DISY	15	FAC	
				SYAL	10	FACU	X	HOLA	15	FAC	
				RHDI	5	UPL		DACA	10	UPL	
				RULA	2	FACU+		DAGL	5	FACU	
				CYSC	tr	UPL					

Percent of dominant species that are OBL, FACW, and/or FAC? **2/6=33%**

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	10YR 3/2	gravelly silty clay loam	
8-15	10YR 3/2	very gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes conditions along top of ditch between fence and ditch. Relatively less disturbed vegetation.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 53-3

Field Investigator: J. Fromm	Date: 11/19/99	Weather: Rainy to cool	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Southeast Turner, 15' south of driveway to 7782 Witzel Road SE.

Landscape Description: Terrace at base of footslope. Topographic and soils map suggest an old or secondary channel of Mill Creek.

Surrounding Land Use: Residential, agricultural

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	20	FACW	X	FRLA	40	FACW	X	FEAR	FAC-	40	X
QUGA	5	UPL	X	RUDI	10	FACU		PRVU	FACU+	15	X
				QUGA	10	UPL		COCO	FACU	2	
				RULA	5	FACU+					
				PSME	1	FACU					
				RONU	2	FAC					

Percent of dominant species that are OBL, FACW, and/or FAC? **2/5=40%**

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-10	10 YR 3/1	gravelly silty clay loam	few, fine, distinct, 10 YR 3/4, redox concentrations
10-15	10 YR 3/2	gravelly silty clay loam	common, fine, distinct, 10 YR 4/6, redox concentrations

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments: Drainage patterns are a network of shallow rivulets.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND		X

Comments: Characterizes the margin of the forested swale located south of driveway.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 53-4

Field Investigator: J. Fromm	Date: 11/19/99	Weather: Cool, rainy, overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: 25' north of road leading to home at 7782 Witzel Road SE

Landscape Description: Same as 53-3. Terrace with old, or overflow, channel of Mill Creek.

Surrounding Land Use: Residential, agricultural

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	65	FACW	X	RHPU	15	FAC-	X	SYAL	30	FACU	X
QUGA	25	UPL		COCO	15	FACU	X	RUUR	25	FACU	X
				RUDI	10	FACU		JUPA	15	FACW	
				RULA	10	FACU+		CALE	10	FACW-	
				ILAQ	5	FACU		POMU	5	FACU	
				PREM	5	FACU					

Percent of dominant species that are OBL, FACW, and/or FAC? 1/5 = 20%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10 YR 3/1	gravelly silty clay loam	
6-15	10 YR 4/1	silty clay loam	many, medium, prominent, 10 YR 4/6, redox concentrations

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Ye	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes forested swale.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 54-1

Field Investigator: J. Fromm	Date: 11/18/9	Weather: Cool, overcast, raining	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: East Turner, about 800' east of Witzel Road.

Landscape Description: Terrace adjacent to footslope.

Surrounding Land Use: Residential, agricultural

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								FEAR	95	FAC-	X
								CIAR	10	FACU+	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/1 = 0%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-7	7.5 YR 3/2	gravelly silty clay loam	
7-15	7.5 YR 3/2	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?						
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: Characterizes conditions in unmowed, ungrazed field.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 54-2

Field Investigator: J. Fromm	Date: 11/18/99	Weather: Cool, overcast, rainy	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: East Turner, east of Witzel Road at 7782 Witzel Road SE

Landscape Description: Terrace, adjacent to footslope.

Surrounding Land Use: Residential, agricultural

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
RHPU	10	FAC-	X	RUDI	40	FACU	X	FEAR	75	FAC-	X
				RHPU	2	FAC-		DACA	10	UPL	
								CIVU	5	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/3 = 0%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes ___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	10 YR 3/2	gravelly silty clay loam	
8-15	10 YR 3/1	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND		X

Comments: Characterizes less disturbed conditions at a landscape location similar to 54-1.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 57-1

Field Investigator: J. Fromm	Date: 8/12/99	Weather: Partly cloudy, sunny, mid-70s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner between railroad & 55th Ave, west of Old Perrin Lateral Canal

Landscape Description: Terrace, alluvial fan with old ditch system

Surrounding Land Use: Agricultural: pasture, grass seed production

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RONU	25	FAC	X	HOLA	85	FAC	X
				SPDO	20	FACW	X	CAOB	20	OBL	
				SALA	5	FACW+		PHPR	5	FAC	
								CALE	tr	FACW-	

Percent of dominant species that are OBL, FACW, and/or FAC? 3/3 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10YR 3/1	silty clay loam	
4-10	10YR 3/1	gravelly silty clay loam	slightly moist

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Plot characterizes the break between shrub and meadow communities in an area surrounded by ditch/swale system.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 57-2

Field Investigator: J. Fromm	Date: 8/12/99	Weather: Partly cloudy, mid-70s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner between 55th Ave & AR

Landscape Description: Terrace/alluvial fan: swale filled with poplar. Bottom of swale is 6' lower the surface of field to west

Surrounding Land Use: Agricultural, pasture

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
POBA	80	FAC	X	SALA	20	FACW+	X	ELPA	60	OBL	X
				FRLA	5	FACW		JUAC	25	OBL	
				POBA	5	FAC		JUEF	25	FACW	
								CAOB	20	OBL	
								JUBU	5	FACW	
								PHPR	2	FAC-	
								MEAR	tr	FACW-	

Percent of dominant species that are OBL, FACW, and/or FAC? 3/3 = 100%

SOILS

Mapped soil type: Clackamas gravely loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-10	10YR 3/2	very gravelly loam	few, fine, prominent, 10YR 4/6 SIMS along root channel

Other comments: May have been excavated and exposed cobbly subsurface materials

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?	X	
Drift Lines?		X				
Water Marks	X		Up to 10"			
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments: Cobbler exposed on surface have dark organic stains on lower side.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Plot characterizes the wettest conditions in swale west of old Perrin Lateral Canal.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 57-3

Field Investigator: J. Fromm	Date 8/12/99	Weather: Partly cloudy, mid-70s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner between 55th Ave & AR

Landscape Description: Terrace/alluvial fan: swale filled with poplar. Bottom of swale is 6' lower the surface of field to west. Set of terraced fields surrounded by drainage ditches.

Surrounding Land Use: Agricultural - grass seed, pasture

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				CYSC	15	UPL	X	HOLA	70	FAC	X
								PLLA	30	FAC	
								DACA	25	UPL	
								AGST	20	FAC	
								POPR	15	FAC	
								FEAR	10	FAC-	
								HYRA	5	FACU	
								EQAR	tr	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? ½ = 50%

SOILS

Mapped soil type: Sifton (St) gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10YR 2/1	gravelly silty loam	
4-10	10YR 2/1	very gravelly cobbly silty loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 57-4

Field Investigator: J. Fromm	Date: 8/12/99	Weather: Partly cloudy, mid-70s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner, between railroad and 55th Avenue, ~25 feet from tracks.

Landscape Description: Same ground as others. Relatively low lying area next to railroad.

Surrounding Land Use: Agricultural: pasture and grass seed production

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
POBA	40	FAC	X	POBA	30	FAC	X	CAOB	40	OBL	X
				FRLA	20	FACW	X	JUEF	25	FACW	X
				SPDO	15	FACW		HOLA	20	FAC	X
				SALA	15	FACW+		PHAR	5	FACW	
				ROPI	10	FAC		JUPA	5	FACW	
				CRDO	5	FAC		CAUN	3	FACW	
								CAPA	2	FAC	

Percent of dominant species that are OBL, FACW, and/or FAC? 6/6 = 100%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes ___ No _X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10YR 3/1	gravelly loam	
4-11	10YR 4/1	very gravelly loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 57-5

Field Investigator: J. Fromm	Date: 9/1/99	Weather: Sunny, hot	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Left bank of Turner Bypass immediately east of bridge, South Turner.

Landscape Description: Slope between channel and terrace/fill, about 2' from left edge of water.

Surrounding Land Use: Industrial and designated industrial, agricultural to south

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	20	FACW	X	RUDI	20	FACW	X	AGST	20	FAC	X
				SYAL	5	FACU	X	JUPA	10	FACW	
								JUEF	10	FACW	
								LOCU	10	FAC	
								RARE	5	FACW	
								DISY	3	FAC	

Percent of dominant species that are OBL, FACW, and/or FAC? ¾ = 75%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10YR 3/2	gravelly silty loam	
6-15	10YR 3/1	gravelly silty loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Plot typifies the sloping area adjacent to Turner Bypass where JUEF seen.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 57-6

Field Investigator: J. Fromm	Date: 9/1/99	Weather: Sunny, hot	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 29 Other: Left bank of Turner Bypass immediately east of bridge.

Landscape Description: Flat fill surface about 6' south of Plot 57-1

Surrounding Land Use: Industrial and designated industrial

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RUDI	75	FACU	X	DACA	5	UPL	X
				CYSC	20	UPL		HYRA	5	FACU	X
				SALA	10			AGST	2	FAC	
								CIVU	tr	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/3 = 0%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10YR 3/2	gravelly silty loam	aggregate, concrete, wood chunks intermixed

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology		X
WETLAND		X

Comments: Plot typifies the less disturbed vegetation on flat fill surface south of Turner Bypass. The mill uses part of this area for materials storage.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 57-7

Field Investigator: J. Fromm	Date: 9/1/99	Weather: Sunny, hot	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner in parcel 966, about 200' south of Mill Ck Bypass and 25' east of railroad tracks.

Landscape Description: Terrace/alluvieal fan surface. Mainly flat, but ditching and grading to level fields has occurred in the past.

Surrounding Land Use: Agricultural, pasture.

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
POBA	65	FAC	X	POBA	25	FAC	X	PHAR	60	FACW	X
				FRLA	20	FACW	X	JUEF	30	FACW	X
				SALA	5	FACW+		CAUN	15	FACW	
				RONU	tr	FAC		CAOB	10	OBL	

Percent of dominant species that are OBL, FACW, and/or FAC? 5/5 = 100%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10YR 3/2	gravelly silty clay loam	few fine redox conc SIMS 7.5 YP 4/6
5-15	10YR 4/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Plot characterizes conditions in low lying area east of railroad berm.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 57-8

Field Investigator: J. Fromm	Date: 11/14/99	Weather: Cool, overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner, 125' south of Turner Bypass and 100' west of old Perrin Lateral Canal.

Landscape Description: Shallow swale on a terrace/alluvial fan.

Surrounding Land Use: Agricultural, industrial, and residential; designated industrial.

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
POBA	30	FAC	X	RONU	40	FAC	X	JUPA	45	FACW	X
FRLA	5	FACW						HOLA	20	FAC	
								AGST	10	FAC	X
								CALE	10	FACW-	
								PHPR	5	FAC-	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/4 = 100%

SOILS

Mapped soil type: Courtney gravelly silty loam | Is mapped soil on hydric soils list?: Yes X No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10 YR 3/2	gravelly silty clay loam	
5-13	10 YR 3/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth?	Rhizospheres?	X	
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes transitional area between forest, scrub/shrub, and meadow wetland types.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 57-9

Field Investigator: J. Fromm	Date: 11/14/99	Weather: Cool, overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: About 6' from LEOW of old canal and 30' from confluence of canal bypass.

Landscape Description: Terrace/alluvial fan

Surrounding Land Use: Undeveloped agricultural, industrial, and residential; designated industrial

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
POBA	50	FAC	X	CRDO	20	FAC	X	CAOB	40	OBL	X
				RHPU	15	FAC-	X	JUPA	25	FACW	X
				RONU	15	FAC	X	RAOC	5	FAC	
				SYAL	5	FACU		JUEF	5	FACW	
				ROPI	5	FAC		EUOC	2	UPL	
				RUDI	tr	FACU					

Percent of dominant species that are OBL, FACW, and/or FAC? 5/6 = 83%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-13	10 YR 3/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth? Surface	Rhizospheres?		X
Drift Lines?						
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes the forested area near confluence of Turner Bypass and old Perrin Lateral Canal.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 58-1

Field Investigator: J. Fromm	Date: 8/12/99	Weather: Sunny, scattered clouds, mid-70s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South of downtown Turner about 60' west of 55th Ave, 25' from ditch.

Landscape Description: Terrace of broad alluvial fan of Mill Creek/Santiam distributary system. Unmowed pasture or grass seed field that is not in production.

Surrounding Land Use: Agriculture, industrial to north in Turner

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				SYAL	75	FACU	X	FEAR	60	FAC-	X
				ROPI	10	FAC		PHPR	10	FAC-	
				RUDI	5	FACU		PHAR	2	FACW	
				SPDO	2	FACW		DISY	tr	FAC	
				CYSC	2	UPL					

Percent of dominant species that are OBL, FACW, and/or FAC? 0/2 = 0%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10YR 2/1	gravelly loam	None
4-12	10YR 3/1	gravelly silty loam	None

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments: Plot typifies upland conditions in field adjacent to ditch.

Turner Local Wetlands Inventory: Wetland Determination Data Form

PLOT # 58-2

Field Investigator: J. Fromm	Date: 8/12/99	Weather: Sunny, mid-70s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: Southeast Turner about 100' west of 55th Ave.

Landscape Description: Same as 58-1 except located in field midway between road and forest along the Perrin Lateral Canal.

Surrounding Land Use: Agriculture

Atypical Situation? No X Yes ___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								FEAR	40	FAC-	X
								HOLA	30	FAC	X
								PHPR	15	FAC-	
								BRMI	15	FAC	
								CIVU	5	FACU	
								DACA	5	UPL	
								POGR	5	FAC	
								CALE	tr	FACW-	

Percent of dominant species that are OBL, FACW, and/or FAC? ½ =50%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No ___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10YR 3/1	gravelly silty loam	None
5-12	10YR 2/1	gravelly silty clay loam	None

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments: Last year's grass is dried layer beneath this year's erect blades and culms, but it is not compacted or ground as though inundated. Hydrologic indicators lacking, but plot is in a transitional area.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 58-3

Field Investigator: J. Fromm	Date: 8/12/99	Weather: Sunny, mid-70s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: Between railroad and 55th Ave, 350' south of Turner Bypass.

Landscape Description: Same as 58-2 except in shallow depression in field and closer to Perrin Lateral Canal.

Surrounding Land Use: Undeveloped and agricultural, designated for industrial use.

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								HOLA	75	FAC	X
								FEAR	20	FAC-	
								CAUN	20	FACW	
								CAPA	20	FACW	
								JUPA	10	FAC	

Percent of dominant species that are OBL, FACW, and/or FAC? 1/1 = 100%

SOILS

Mapped soil type: Courtney silty gravelly clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10YR 2/1	gravelly silty clay loam	
6-13	10YR 2/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments: Poorly drained, shallow depression in field, elevated grass mounds.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 58-4

Field Investigator: J. Fromm	Date: 8/12/99	Weather: Sunny w/clouds, upper 70s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner between railroad & 55th Ave, about 10' east of Perrin Lat.

Landscape Description: Terrace/alluvial fan. Plot lies within the strip of forest/shrubs adjacent to the Perrin Lateral Canal.

Surrounding Land Use: Agricultural: pasture, grass seed production, industrial to north

Atypical Situation? No_X_ Yes___ (Describe type and effect) But hydrology has changed

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	75	FACW	X	SALA	20	FACW+	X	CAOB	25	OBL	X
SALA	20	FACW+	X	FRLA	20	FACW	X	CADE	10	FACU	X
				CRDO	5	FAC		POMU	5	FACU	
				RHPU	3	FAC-		CALE	5	FACW-	
				RONU	2	FAC					
				RULA	tr	FACU+					

Percent of dominant species that are OBL, FACW, and/or FAC? 5/6 = 83%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10YR 3/1	silty clay loam	none
4-15	10YR 3/2	gravelly silty clay loam	

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: The canal is about 8' wide at the top and 3' deep. Only a trickle of water flowing. Ditch is full of willow and ash and has not been cleaned in many (20?) years. Suggests the Perrin Lateral has been moved immediately west of 55th Ave. Old piles of dredge material, removed from ditch when cleaned, lie close to ditch.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 58-5

Field Investigator: J. Fromm	Date: 9/16/99	Weather:	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 33 Other: South Turner, 900' southwest of Marion Rd, 4' from right edge of Mill Creek

Landscape Description: Floodplain, creek - facing slope of natural levee/dike along Mill Creek.

Surrounding Land Use: Agricultural, semi-public church use.

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RUDI	65	FACU	X	PHAR	85	FACW	X
				COST	20	FACW	X				

Percent of dominant species that are OBL, FACW, and/or FAC? 2/3 = 67%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-9	10YR 3/2	silty clay loam	
9-15	10YR 3/1	silty clay loam	with few, fine, distinct, 7.5YR 4/4, redox concentrations

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Willow (SALA) and FRLA growing along channel. Plot characterizes conditions on lower bank where removal of tree layer creates open conditions

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 58-6

Field Investigator: J. Fromm	Date: 9/16/99	Weather: Sunny, hot	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Same as 56-5 but on top of levee/dike

Landscape Description: Floodplain, creek - facing slope of levee/dike along Mill Creek.

Surrounding Land Use: Same as 58-5

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RUDI	60	FACU	X	PHAR	60	FACW	X
								DACA	5	UPL	
								DISY	2	FAC	
								FEAR	tr	FAC-	

Percent of dominant species that are OBL, FACW, and/or FAC? ½ = 50%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10YR 3/2	silty clay loam	
4-14	10YR 3/1-2	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?	X					
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		*Saturation within upper 12" is key.*		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: Characterizes conditions on the upper levee/dike where tree layer has been removed.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 58-8

Field Investigator: J. Fromm	Date: 11/14/99	Weather: Cool, overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: About 80' south of Turner Bypass and 150' west of 55th Ave.

Landscape Description: Alluvial fan/terrace

Surrounding Land Use: Agriculture, industrial, and residential. Mainly undeveloped and designated industrial.

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	85	FACW	X	PHCA	75	FACW-	X	CAOB	20	OBL	X
				RHPU	10	FAC-		HEHE	5	UPL	
								TOME	5	FAC	
								RUUR	2	FACU	
								POMU	2	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 3/3 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-7	10 YR 3/1	silty clay loam	
7-15	10 YR 3/1	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth? 4"	Rhizospheres?		X
Drift Lines?						
Water Marks	X					
Sediment Deposits?						
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes the forest/scrub-shrub wetland.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 62-1

Field Investigator: J. Fromm	Date: 11/17/99	Weather: Cool, overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: The right bank of roadside ditch immediately east of Wipper Road.

Landscape Description: Roadside ditch built across alluvial fan/terrace.

Surrounding Land Use: Agricultural, designated industrial

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RUDI	45	FACU	X	FEAR	80	FAC-	X
				RONU	5	FAC		DACA	15	UPL	
				CRDO	tr	FAC		CIVU	3	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/2 = 0%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10 YR 3/1	very gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments: Plot typifies conditions at top of bank adjacent to grass seed field the entire length of Wipper Road.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 63-1

Field Investigator: J. Fromm	Date: 11/15/99	Weather: Cool, cloudy, light rain	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner 650' east of railroad tracks.

Landscape Description: This terrace/alluvial fan surface has been altered by leveling and terracing work to drain the field.

Surrounding Land Use: Agricultural; designated industrial

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								PHPR	80	FAC-	X
								LOPE	30	FACU	X
								CIVU	5	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/2 = 0%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-7	10 YR 3/1	gravelly silty clay loam	
7-15	10 YR 4/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth? 4"	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND		X

Comments: Characterizes an extension of the meadow into forest and scrub-shrub veregation.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 63-2

Field Investigator: J. Fromm	Date: 11/15/99	Weather: Cool, overcast, light rain	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner about 500' east of railroad.

Landscape Description: Terrace/alluvial fan surface that has been leveled, terraced, and ditch to drain/irrigate the field.

Surrounding Land Use: Agricultural, undeveloped; designated industrial

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				SALA	75	FACW+	X	CAOB	10	OBL	X
				CRDO	15	FAC		RUUR	10	FACU	X
				SYAL	15	FACU					
				RULA	5	FACU+					
				FRLA	5	FACW					

Percent of dominant species that are OBL, FACW, and/or FAC? 2/3 = 67%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10 YR 3/1	gravelly silty clay loam	
6-15	10 YR 4/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth? 2"	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?						
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes scrub/shrub community. Ditch noted extending from the field into scrub/shrub wetland.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 63-3

Field Investigator: J. Fromm	Date: 11/15/99	Weather: Overcast and cool	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner 650' east of railroad tracks.

Landscape Description: Terrace/alluvial fan. This terrace/alluvial fan surface has been altered by leveling and terracing work to drain the field. (See 63-1)

Surrounding Land Use: Agricultural, undeveloped. Designated industrial. (See 63-1)

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								JUPA	75	FACW	X
								JUEF	15	FACW	
								AGST	15	FAC	
								CALE	10	FACW-	

Percent of dominant species that are OBL, FACW, and/or FAC? 1/1 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10 YR 4/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?	X		To what depth? 4"	Oxidized		
Saturated Soils?	X		At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes low-lying part of open field dominated by rushes. Area is noticeably darker colored on photos.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 63-4

Field Investigator: J. Fromm	Date: 11/15/99	Weather: Cool and overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner about 650' east of railroad tracks.

Landscape Description: Alluvial fan/terrace.

Surrounding Land Use: Agricultural and undeveloped; designated industrial

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	75	FACW	X	RONU	30	FAC	X	CAOB	25	OBL	X
CRDO	15	FAC		SPDO	10	FACW	X				
				SALA	5	FACW+					

Percent of dominant species that are OBL, FACW, and/or FAC? 4/4 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10 YR 3/1	gravelly silty clay loam	
4-13	10 YR 4/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes the forest/scrub-shrub habitat.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 64-1

Field Investigator: J. Fromm	Date: 11/16/99	Weather: Overcast, cool	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner about 40' east of old location of Perrin Lateral Canal, about 275' west of 55th Ave.

Landscape Description: Alluvial fan/terrace.

Surrounding Land Use: Agriculture, undeveloped, and residential; designated industrial

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	90	FACW	X	SPDO	30	FACW	X	TOME	25	FAC	X
				RONU	25	FAC	X	CAOB	15	OBL	X
				CRDO	20	FAC	X	CADE	10	FACU	
				SYAL	10	FACU		CALE	10	FACW	

Percent of dominant species that are OBL, FACW, and/or FAC? 6/6 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10 YR 2/1	silty clay loam	
5-15	10 YR 3/1	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?	X		At what depth? surface			
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes the forest/scrub-shrub community between open field and ditch.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 64-2

Field Investigator: J. Fromm	Date: 11/15/99	Weather: Cool, overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner about 275' west of 55th Ave.

Landscape Description: Alluvial fan/terrace.

Surrounding Land Use: Agricultural and undeveloped; designated industrial.

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								HOLA	35	FAC	X
								AGST	30	FAC	X
								FEAR	25	FAC-	X
								PHPR	20	FAC-	

Percent of dominant species that are OBL, FACW, and/or FAC? 2/3 = 67%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10 YR 3/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes the open meadow adjacent to forest/scrub-shrub community which is transitional between upland and wetland.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 64-3

Field Investigator: J. Fromm	Date: 11/15/99	Weather: Cool; overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner about 160' west of 55th Ave.

Landscape Description: Alluvial fan/terrace

Surrounding Land Use: Agricultural and undeveloped; designated industrial

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
CRDO	60	FAC	X	RHPU	20	FAC-	X	CAOB	10	OBL	X
FRLA	25	FACW	X	PHCA	20	FACW-	X				
RHPU	10	FAC-		SYAL	20	FACU	X				
				RONU	15	FAC					
				CRDO	15	FAC					

Percent of dominant species that are OBL, FACW, and/or FAC? 4/6 = 67%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10 YR 3/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth? surface	Rhizospheres?		X
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes the forest/scrub-shrub community south of field.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 64-4

Field Investigator: J. Fromm	Date: 11/8/99	Weather: Overcast, raining	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: ~150' west of 55th Avenue

Landscape Description: Alluvial fan/terrace.

Surrounding Land Use: Agricultural, residential, undeveloped

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
POBA	55	FAC	X	RUDI	65	FACU	X				
PYMA	25	UPL	X	SYAL	25	FACU	X				
CRDO	20	FAC	X	RONU	10	FAC					

Percent of dominant species that are OBL, FACW, and/or FAC? 2/5 = 40%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes ___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10 YR 2/1	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 65-1

Field Investigator: J. Fromm	Date: 11/17/99	Weather: Partly cloudy, mid-60s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section Other: Tax lot at 8075 Marion Road SE

Landscape Description: This is a point bar in the floodplain along Mill Creek that has bu.lt up between the active channel and the levee.

Surrounding Land Use: Residential, agricultural, junk yard

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
ALRU	50	FAC	X	RUDI	2	FACU		PHAR	40	FACW	X
SALA	25	FACW+	X					AGST	30	FAC	X
								FEAR	25	FAC-	X
								CIAR	15	FACU+	
								SODU	5	FAC	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/5 = 80%

SOILS

Mapped soil type: Courtney gravelly silty | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-6	10 YR 3/2	gravelly loam	
6-15	10 YR 3/3	sandy loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?				***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils		X
Wetland Hydrology	X	
WETLAND		X

Comments: Side bar substrate is relatively coarse and well drained.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 65-2

Field Investigator: J. Fromm	Date: 8/17/99	Weather: Partly cloudy	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 28 Other: Tax lot at 8075 Marion Road SE

Landscape Description: Land in the floodplain behind the dike.

Surrounding Land Use: Residential, agricultural, junk yard

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	75	FACW	X	CRDO	30	FAC	X	RAOC	30	FACW	X
CRDO	25	FAC	X	RONU	15	FAC	X	FEAR	25	FAC-	X
								PHAR	15	FACW	
								CIAR	10	FACU+	
								DISY	5	FAC	

Percent of dominant species that are OBL, FACW, and/or FAC? 5/6 = 83%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	10 YR 3/2	silty loam	
8-15	10 YR 3/1	silty clay loam	with few, fine, faint, 7.5 YR 4/6, redox concentrations

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?			To what depth?	Oxidized		
Saturated Soils?			At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?						
Drainage Patterns?				***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Plot typifies the low-lying land on flood plain behind levee. The whole parcel is grazed. Was a bean farm and has been converted to outdoor storage of metals, equipment, and other materials. Grazed by goats, sheep, emus, pigs, rabbits. Wetland should drawn to include clump of ash trees. Boundary in field best correlated with presence of buttercup.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 68-1

Field Investigator: J. Fromm	Date: 7/1/99	Weather: Sunny, mid-80s	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: Grass seed field in south of Turner between Whipper Rd and railroad.

Landscape Description: Broad terrace or alluvial fan surface with topographically subdued swales and ridges, and shallow depressions. Landform associated with Mill Ck./North Santiam distributary system.

Surrounding Land Use: Cultivated farmland with some scattered pasture and rural residences/farmsteads.

Atypical Situation? No X Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	85	FACW	X	RONU	25	FAC	X	AGST	75	FAC	X
				SPDO	10	FACW	X	GAAP	25	FACU	
				ROEG	5	FACU		HOLA	20	FAC	
				CRDO	5	FAC		CALE	20	FACW-	
				RHPU	1	FAC-		PHPR	5	FAC-	
				RUDI	1	FACU		RUCR	2	FACW	
				SYAL	trace	FACU		GEMA	2	FACW-	
								EPCI	2	FACW-	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/4 - 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10YR 2/1	silty clay loam	
5-15	10YR 2/1	gravelly silty clay loam	15-20% gravel-sized, rounded, volcanic clasts

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Ash/rose forested wetland located in a very shallow swale. Soils map showed a channel running adjacent to the swale which has subsequently been replaced by another ditch system to the west along Wipper Road.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 68-2

Field Investigator: J. Fromm	Date: 8/2/99	Weather: Sunny, 85°F	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: Grass seed field between Wipper Rd and railroad.

Landscape Description: Shallow drainage on broad alluvial fan or higher terrace associated with Santiam/Mill Creek distributary system.

Surrounding Land Use: Cultivated farmland, some pasture

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	40	FACW	X	RONU	60	FAC	X	GAAP	30	FACU	X
				SYAL	20	FACU	X	CIVU	15	FACU	X
				RUDI	5	FACU		LOPE	5	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 2/5 = 40%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10YR 2/1	silty clay loam	none
5-10	10YR 2/1	gravelly silty clay loam	none

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 68-3

Field Investigator: J. Fromm	Date: 8/2/99	Weather: Sunny, hot	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: Field between Wipper Road and railroad.

Landscape Description: Broad alluvial fan, terrace of the Santiam/Mill Creek distributary system.

Surrounding Land Use: Agriculture

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								FEAR	100	FAC-	X

Percent of dominant species that are OBL, FACW, and/or FAC? 0/1= 0%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	10YR 3/1	silty clay loam	
8-15	10YR 2.1	gravelly clay	few, fine, distinct, 7.5YR 4/3, redox concentrations, soft iron masses @ root pores

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		***Secondary Indicators***	Ye:	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X	No dried algae crusts			
Sediment Deposits?						
Drainage Patterns?				***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 68-4

Field Investigator: J. Fromm	Date: 8/2/99	Weather: Sunny, hot	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: Field between Wipper Road and railroad about 75' east of Wipper Road.

Landscape Description: Broad alluvial fan/terrace of the Santiam/Mill Creek distributory system.

Surrounding Land Use: Agriculture

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								FEAR	100	FAC-	X

Percent of dominant species that are OBL, FACW, and/or FAC? 0/1 = 0%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	7.5YR 3/1	gravelly silty clay loam	none
8-13	7.5YR 2/1	gravelly silty clay loam	none

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments: No dried algae crust, litter is not aligned.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments:

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 68-5

Field Investigator: J. Fromm	Date: 11/17/99	Weather: Cool, overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: Ditch immediately east of Wipper Road

Landscape Description: Roadside ditch built across alluvial fan/terrace. The ditch is 4-7' wide in the bottom, 12-15' wide at the top, and 3-5' deep. Banks are vertical and sloughing in places.

Surrounding Land Use: Agricultural, designated industrial

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RONU	2	FAC		PHAR	70	FACW	X
				SALA	2	FACW+		JUEF	30	FACW	X
								CAOB	5	OBL	
								SODU	5	FAC+	
								LEMI	2	OBL	
								DISY	tr	FAC	
								JUPA	tr	FACW	

Percent of dominant species that are OBL, FACW, and/or FAC? 2/2 = 100%

SOILS

Mapped soil type: Amity silt loam | Is mapped soil on hydric soils list?: Yes ___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10 YR 3/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?	X		To what depth? 12-28"	Oxidized Rhizospheres?		X
Saturated Soils?	X		At what depth? surface			
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?	X					
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Plot characterizes conditions in the channel bottom the entire length of Wipper Road.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 69-1

Field Investigator: J. Fromm	Date: 8/2/99	Weather: Hot, sunny	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: East of ash forest in grass seed field.

Landscape Description: Depression on terrace or broad alluvial fan.

Surrounding Land Use: Agriculture

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								POHY	30	OBL	X
								PLMA	25	FACU+	X
								ECCR	20	FACW	X
								PACA	2	FACU+	
								DISA	tr	FACU	
								AMRE	tr	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 2/3 = 67%

SOILS

Mapped soil type: Courtney gravelly silt clay loam | Is mapped soil on hydric soils list?: Yes _X_ No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-9	10YR 3/1	gravelly silt clay loam	
9-15	10YR 3/1	gravelly clay	few, fine, distinct, 7.5YR 4/6, redox concentrations, ped int. root channel

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments: Reddish, dried up algae crust seen on soil surface. Bare ground related to lengthy ponding noted.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: The fEAR field is gently sloping with broad swales and ridges. Water appears to pond in some of the swales. This plot is located in a closed depression sufficiently ponded to drown out the grass.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 69-2

Field Investigator: J. Fromm	Date: 8/2/99	Weather: Hot, sunny	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: West of railroad in field.

Landscape Description: Slightly higher area on a broad alluvial fan.

Surrounding Land Use: Field in grass seed production.

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								FEAR	100	FAC-	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/1 = 0%

SOILS

Mapped soil type: Courtney gravelly silt clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-9	10YR 3/1	gravelly silty clay loam	
9-15	10YR 2/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND		X

Comments: Typifies conditions on the slightly elevated areas between swales and depressions.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 69-3

Field Investigator: J. Fromm	Date: 8/2/99	Weather: Hot, sunny	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: Near railroad tracks in South Turner.

Landscape Description: Shallow swale on broad alluvial fan.

Surrounding Land Use: Field in grass seed production.

Atypical Situation? No_X_ Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								FEAR	2	FAC-	

Percent of dominant species that are OBL, FACW, and/or FAC? Festuca coverage considered too limited to be a dominant.

SOILS

Mapped soil type: Courtney silt gravel clay loam | Is mapped soil on hydric soils list?: Yes _X_ No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8 (Ap)	7.5YR 2.5/1	gravel silt clay loam	
8-15	7.5YR 3/1	clay	moist at 10", not saturated

Other comments: Hexagonal dessication crack pattern

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments: Ponding has eliminated most plant life. Possibly due to compaction. Reddish dried algae not compacted.

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Typifies low-lying areas ponded long enough to kill all grass.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 69-4

Field Investigator: J. Fromm	Date: 11/15/99	Weather: Cool and overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner about 400' east of railroad tracks.

Landscape Description: Alluvial fan/terrace.

Surrounding Land Use: Undeveloped; agricultural; designated industrial

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RUDI	15	FACU	X	CIVU	20	FACU	X
								HOLA	15	FAC	X
								FEAR	5	FAC-	
								DACA	2		

Percent of dominant species that are OBL, FACW, and/or FAC? 1/3 = 33%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10 YR 2/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?		X	At what depth?			
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes the open, relatively high part of disturbed meadow.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 69-5

Field Investigator: J. Fromm	Date: 11/15/99	Weather: Cool, overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner about 200' east of railroad tracks.

Landscape Description: Alluvial fan/terrace.

Surrounding Land Use: Agricultural, undeveloped; designated industrial

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
POBA	75	FAC	X	SALA	20	FACW+	X	CAUN	15	FACW	X
				CRDO	5	FAC	X	JUEF	10	FACW	X
								CAOB	5	OBL	

Percent of dominant species that are OBL, FACW, and/or FAC? 5/5 = 100%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes ___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-3	10 YR 3/1	gravelly silty clay loam	
3-12	10 YR 4/1	gra elly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?	X		To what depth?	Oxidized		
Saturated Soils?	X		At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes forested swale.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 69-6

Field Investigator: J. Fromm	Date: 11/15/99	Weather: Cool and overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner about 130' east of railroad tracks.

Landscape Description: Alluvial fan/terrace surface, relatively high surface

Surrounding Land Use: Agriculture and undeveloped; designated industrial

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RUDI	25	FACU	X	FEAR	80	FAC-	X
				CRDO	5	FAC		PHPR	15	FAC-	
								LOPE	12	FACU	
								CIVU	10	FACU	
								CALE	2	FACW-	
								DAGL	2	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? 0/2 = 0%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes___ No_X_

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10 YR 2/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes open field between railroad and poplar swale.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 69-7

Field Investigator: J. Fromm	Date: 11/15/99	Weather: Cool, overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner about 300' east of railroad tracks.

Landscape Description: Alluvial fan/terrace

Surrounding Land Use: Agriculture and undeveloped; designated industrial

Atypical Situation? No X Yes ___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RUDI	5	FACU	X	HOLA	90	FAC	X
								FEAR	20	FAC-	
								LOPE	5	FACU	
								CIVU	5	FACU	

Percent of dominant species that are OBL, FACW, and/or FAC? ½ = 50%

SOILS

Mapped soil type: Clackamas gravelly loam | Is mapped soil on hydric soils list?: Yes ___ No X

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-4	10 YR 3/1	gravelly silty clay loam	
4-12	10 YR 2/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?		X	At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks		X				
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation		X
Hydric Soils	X	
Wetland Hydrology		X
WETLAND		X

Comments: Characterizes open field northeast of poplar swale.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 69-8

Field Investigator: J. Fromm	Date: 11/15/99	Weather: Cool, overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner about 520' east of railroad tracks.

Landscape Description: Alluvial fan/terrace

Surrounding Land Use: Agriculture and undeveloped

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	95	FACW	X	RONU	15	FAC	X	RUUR	40	FACU	X
CRDO	5	FAC		SYAL	3	FACU		CALE	25	FACW-	X
SALA	3	FACW+						AGST	15	FAC	
RHPU	2	FAC-						CAOB	3	OBL	
								JUEF	3	FACW	
								JUPA	3	FACW	

Percent of dominant species that are OBL, FACW, and/or FAC? ¾ = 75%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-5	10 YR 3/1	gravelly silty clay loam	
5-15	10 YR 2/1	gravelly silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth? 4"	Rhizospheres?		X
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes the ash forest west of old Perrin Lateral Canal.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 70-1

Field Investigator: J. Fromm	Date: 11/19/99	Weather: Cool, rainy, overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: Southeast Turner, about 60' west of 55th Avenue

Landscape Description: Terrace/alluvial fan of the Santiam/Mill Creek distributary system.

Surrounding Land Use: Agriculture, designated industrial

Atypical Situation? No X Yes __ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
								HOLA	80	FAC	X
								PHPR	20	FAC-	
								HOBR	5	FACW-	
								GEMA	1	FACW-	

Percent of dominant species that are OBL, FACW, and/or FAC? 1/1 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No __

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-12	N3/__	silty clay loam	gleyed matrix
12-15	N4/__	clay	gleyed matrix

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth? surface	Rhizospheres?		X
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Plot characterizes the open field adjacent to ditch.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 70-2

Field Investigator: J. Fromm	Date: 11/19/99	Weather: Cool, rainy, overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: Southeast Turner about 350' west of 55th Ave.

Landscape Description: Terrace, alluvial fan, associated with Santiam distributary system.

Surrounding Land Use: Agricultural

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
FRLA	75	FACW	X	COST	40	FACW	X	HOLA	80	FAC	X
SALA	20	FACW+	X	RONU	35	FAC	X	AGST	20	FAC	
								CAOB	10	OBL	

Percent of dominant species that are OBL, FACW, and/or FAC? 5/5 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	N3/__	silty clay loam	gleyed matrix

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?	X		At what depth? surface			
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?		X		***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes undisturbed conditions in ash forest.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 70-3

Field Investigator: J. Fromm	Date: 11/19/99	Weather: Cool, rainy, cloudy	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: Southeast Turner, about 275' west of 55th Ave.

Landscape Description: Ditch on the terrace or alluvial fan.

Surrounding Land Use: Agricultural

Atypical Situation? No_X_ Yes___ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RONU	5	FAC	X	VEAM	75	OBL	X
								PHAR	30	FACW	X
								EPWA	30	FACW-	X
								JUEF	10	FACW	

Percent of dominant species that are OBL, FACW, and/or FAC? 4/4 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes _X_ No___

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-15	10 YR 4/1	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?	X		To what depth?	Oxidized		
Saturated Soils?	X		At what depth?	Rhizospheres?		X
Drift Lines?	X					
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			*Saturation within upper 12" is key.*		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes the lowest part of ditch—channel bottom.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 70-4

Field Investigator: J. Fromm	Date: 11/15/99	Weather: Cool, overcast	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner about 175' west of 55th Avenue.

Landscape Description: Terrace/alluvial fan

Surrounding Land Use: Agricultural and undeveloped; designated industrial.

Atypical Situation? No X Yes__ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RONU	5	FAC	X	CAOB	35	OBL	X
				CRDO	2	FAC	X	HOLA	30	FAC	X
								PHPR	25	FAC-	X
								ALPR	15		
								FEAR	5	FAC-	

Percent of dominant species that are OBL, FACW, and/or FAC? **4/5=80%**

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No__

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-8	10 YR 2/2	silty clay loam	
8-15	10 YR 2/1	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized Rhizospheres?		X
Saturated Soils?	X		At what depth? 8"			
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes the open meadow ringed by shrubs.

Turner Local Wetlands Inventory: Wetland Determination Data Form PLOT # 70-5

Field Investigator: J. Fromm	Date: 11/15/99	Weather: Overcast, cool	City/County: Turner/Marion	State: OR

Plot Location: Township 8S Range 2W Section 32 Other: South Turner about 125' west of 55th Avenue.

Landscape Description: Alluvial fan/terrace - filled part of old Perrin Lateral Canal.

Surrounding Land Use: Agriculture, undeveloped; designated industrial

Atypical Situation? No X Yes __ (Describe type and effect)

VEGETATION

Trees (>3" dbh)				*Shrubs (taller than 3.2 ft, <3" dbh)*				*Herbs/Vines*			
Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?	Species	% Areal Coverage	Indicator Status	Dominant?
				RONU	70	FAC	X	CAOB	30	OBL	X
				SALA	5	FACW+		HOLA	20	FAC	X
								PHPR	10	FAC-	
								PHAR	5	FACW	
								DISY	5	FAC	

Percent of dominant species that are OBL, FACW, and/or FAC? 3/3 = 100%

SOILS

Mapped soil type: Courtney gravelly silty clay loam | Is mapped soil on hydric soils list?: Yes X No __

Soil Profile Description

Layer Depth (inches)	Color	Texture	Redox and other layer features (mottles, gleyed matrix, concretions, etc)
0-7	10 YR 3/2	silty clay loam	
7-15	10 YR 2/1	silty clay loam	

Other comments:

Key depth is below the A horizon or 10 ", whichever is shallower

HYDROLOGY

Primary Indicators	Yes	No		*Secondary Indicators*	Yes	No
Inundated?		X	To what depth?	Oxidized		
Saturated Soils?	X		At what depth?	Rhizospheres?		X
Drift Lines?		X				
Water Marks	X					
Sediment Deposits?		X				
Drainage Patterns?	X			***Saturation within upper 12" is key.***		

Comments:

WETLAND ASSESSMENT

	Yes	No
Hydrophytic Vegetation	X	
Hydric Soils	X	
Wetland Hydrology	X	
WETLAND	X	

Comments: Characterizes conditions in shrubby areas.

14. Appendix E: List of Tax Lots Affected by Mapped Wetlands

List of Tax Lots Affected by Mapped Wetlands

Wetland Mapping Code	Tax Lots
MCC-A	082W28C 00400
	082W28CB01600
	082W29B 00300
	082W29B 00400
	082W29B 00500
	082W29B 00600
	082W29B 00800
	082W29B 00802
	082W29B 00900
	082W29C 00200
	082W29C 00400
	082W29DA04500
	082W29DA04600
	082W29DA04700
	082W29DA04800
	082W29DA04900
	082W29DA05000
	082W29DA05100
	082W29DA05300
	082W29DA05400
	082W29DA07100
	082W29DA07200
	082W29DB00300
	082W29DB04000
	082W29DB04100
	082W29DB04200
	082W29DB04300
	082W29DB04400
MCC-B	082W29B 00800
	082W29B 00900
	082W29C 00300
	082W29C 00400
MCC-C	082W29A 00100
	082W29A 00700
MCC - D	082W28B 00300
	082W28B 00600

Wetland Mapping Code	Tax Lots
MCC-E	082W28C 00400
	082W28CB00100
	082W28CB01500
MCN-A	082W20C 00100
	082W20C 00300
	082W20C 00500
	082W20C 00700
	082W29B 00100
	082W29B 00300
MCN-B	082W20C 00300
	082W20C 00500
	082W20C 00700
MCN-C	082W20 00400
	082W20A 00800
	082W20D 00100
	082W20D 00300
	082W20D 00304
	082W20D 00401
MCN-D	082W20 00400
	082W20 00401
	082W20D 00300
	082W20DA00100
	082W20DA00300
	082W21B 03800
	082W21B 04100
	082W21B 04200
MCN-E	082W29B 01000
MCS-A	082W28C 00400
	082W28C 00900
	082W28C 01100
	082W28CB01600
	082W28CB01700
	082W33B 00600
	082W33BA00100
	082W33BA00400
	082W33BA00700
	082W33BA02500

Wetland Mapping Code	Tax Lots
MCS-B	082W28C 00400
MCS-C	082W28C 01100
MCS-D	082W28C 00900 082W33B 00600 082W33BA00100 082W33BA00400 082W33BA00700 082W33BA01700 082W33BA01900 082W33BA02000 082W33BA02100 082W33BA02500
MCS-E	082W28C 00400 082W28C 00900 082W28C 01000 082W28C 01100 082W28CD01800 082W28CD02200 082W33A 00200 082W33A 00300 082W33BA00100 082W33BA00200 082W33BA00300 082W33BA00400 082W33BA00700
MCS-F	082W28C 00800 082W28CD00100 082W28CD00300 082W28D 02300
PL-A	082W29C 00200 082W29C 00400 082W29C 01000 082W29DC00100 082W29DC00101 082W29DC01200 082W29DC01300 082W29DC01500

Wetland Mapping Code	Tax Lots
PL - A (continued)	082W29DC01600
	082W29DC01700
	082W29DC02700
	082W29DC02800
	082W32A 00100
	082W32A 00200
	082W33B 00300
PL-B	082W29C 00200
	082W29C 00400
	082W29C 01000
PL-C	082W29DC01200
	082W29DC01400
	082W29DC01500
	082W29DC01600
PL-D	082W29DC02700
	082W32A 00500
	082W32A 00900
	082W32A 01000
PL-E	082W29DC00100
	082W29DC02800
	082W32A 00200
	082W32A 00300
	082W32A 00400
PL-F	082W32A 00100
	082W32A 00300
	082W32A 00400
PL-G	082W32A 00100
	082W33B 00200
	082W33B 00300
PL-H	082W33B 00300

15. Appendix F: Riparian Area Width Determinations, Characterization Sheets, & Function Assessment Results

Riparian Inventory

Riparian Width Determination

Date(s) of work: 8-9-99 & 11-4-99	Riparian Mapping Code: MCN-1.2R
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,782

Location:
Legal - Township 8S Range 2W Section 29
Other- This riparian area is the right bank of Mill Creek between the northern boundary of Turner City Park and the railroad bridge.

Dominant Tree Species: *Alnus rubra* & *Fraxinus latifolia* adjacent to creek, *Quercus garryana* on higher parts of floodplain.

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75/200+'

PTH Determined by:
☒ On-site vegetation ☐ Reference Site (Code)

Comments

In this location, Mill Creek occupies the far west side of its floodplain at the base of the Salem Hills. Slopes adjacent to the left bank are steep (≤100%). Mature Douglas fir forest on left bank slopes but recently logged on northern part. Right bank is forested area logged about 30 years ago.

Photo shows MCN-1.2R at the cannel island near Turner City Park.

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-4-99	Riparian Mapping Code: MCN-1.2R
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,782
Verification Type: On-site	Hydrologic Basin: Mill Creek North

Location:
Legal - Township 8S Range 2W Section 20
Other - This riparian area is located along the right bank of Mill Creek between the northern edge of Turner City Park and the railroad bridge.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Mill Creek	60
Lake/Pond	
Wetland R2	On list for bacterial contamination.

LWI Wetland Code: MCN-A

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?	X		
Is the water resource listed for temperature on DEQ's 303(d) list?		X	On list for bacterial contamination.

OTHER INFORMATION

Soil—Mapped Series: Clackamas gravelly loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Yes. Zone AE and floodway. Lots of drift observed.

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☐Residential	☐Roads ☒Undeveloped ☐Forest ☐Other Comments-Designated residential

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Salix lasiandra	*Pseudotsuga menziesii*	*Phalaris arundinacea*	
Alnus rubra	*Corylus cornuta*	*Rubus ursinus*	
Rubus discolor	*Amelanchier alnifolia*	*Geum macrophyllum*	
Symphoricarpos albus	*Rosa nutkana*	*Glecoma hederacea*	
Pyrus malus	*Populus balsamifera*	*Polystichum munitum*	
Spiraea douglasii		*Agrostis stolonifera*	
Cornus stolonifera		*Carex deweyana*	
Physocarpus capitatus		*Ranunculus occidentalis*	
Quercus garryana			
Fraxinus latifolia			

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A:) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

(A:) No B: Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

A: Yes (B:) No

What is the dominant vegetation layer in the riparian area?

(A:) Woody vegetation > 1 m B: Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

(A:) Yes B: No

Is large woody debris present in the riparian area?

(A:) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

(A:) <25% B: Between 25 and 75% C: >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-4-99	Riparian Code: MCN-1.2R
Investigator(s): Jeanne Fromm	Approx. length (feet): 2,782
Riparian Area Location: This riparian area is the right bank of Mill Creek between the northern boundary of Turner City Park and the railroad bridge.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	B	3	12	A	3
2	A	3	7	A	3	10	A	3	13	A	3
3	A	3	8	A	3	11	A	2	14	A	2
4	A	3		Total	9		Total	8	15	A	3
5	A	2							16	A	3
	Total	14							17	A	3
									18	A	3
									19	A	3
										Total	23
High	12-14	X	High	8-9	X	High	7-8	X	High	19-23	X
Med	8-11		Med	5-7		Med	5-6		Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A) Less than 10%	B: Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10%	B: 10 - 25%	C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT	
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?	
(A:) Yes	B: No
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*	
Is woody vegetation greater than 1 meter high dominant in the flood prone area?	
(A:) Yes	B: No, or no flood prone area present
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*	
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)	
(A:) No	B: Yes
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*	

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A:) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A:) Yes	B: No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

The steep ridge along the west side of stream and forested banks provide good shade for this reach in spite of north-south orientation.

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

(A:) More than 2 layers	B: 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A:) Yes	B: No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A:) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A:) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A:) Yes Some narrow wetland area	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

(A:) <25%	B: Between 25 and 75%	C: >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 11-9-99	Riparian Mapping Code: MCN-1.2A
Investigator(s): Jeanne Fromm	Perimeter Reach Length (feet): 9,677

Location:
Legal - Township 8S Range 2W Section 20
Other- This riparian area is located around future Lake Turner, the active gravel mine in North Turner.

Dominant Tree Species: none on site at present

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75'

PTH Determined by:
☐On-site vegetation ☒Reference Site (Code MCS-2.1R)

Comments

The description and assessment of the riparian area is a projection based on the approved reclamation plan for the site. Future Lake Turner is 82 acres and surrounded by forested, emergent, and scrub-shrub wetland, and forested upland buffer 75-100 feet wide.

Typical Cross Section

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-9-99	Riparian Mapping Code: MCN-1.2A
Investigator(s): Jeanne Fromm	Perimeter Reach Length (feet): 9,677
Verification Type: Off-site	Hydrologic Basin: Mill Creek North
Location: Legal - Township 8S Range 2W Section 20 Other - This riparian area is located around future Lake Turner, the active gravel mine in North Turner.	

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River	
Lake/Pond Future Lake Turner	82 acres
Wetland	
LWI Wetland Code: MCN-C	

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?		X	
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: Clackamas gravelly loam, McAlpin silty clay loam
Potential Erosion Hazard:

Within a FEMA 100-year floodplain? Unknown. Currently partially located in Zone AE, but berm may isolate lake.

Adjacent Existing Land Uses (check those that apply) ☒Agriculture ☐Confined Animal Feeding Operation ☒Commercial/Industrial ☐Residential	☐Roads ☒Undeveloped ☐Forest ☐Other Comments-Designated industrial & residential

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Crataegus douglasii	*Pseudotsuga menziesii*	*Juncus patens*	*Eleocharis ovata*
Salix sp.	*Acer macrophyllum*	*Carex obnupta*	*Carex stipata*
Fraxinus latifolia	*Amelanchier alnifolia*	*Camassia quamash*	*Alisma plantago-aquatica*
Populus balsamifera	*Corylus cornuta*	*Carex unilateralis*	
Alnus rubra	*Pyrus malus*	*Deschampsia cespoitosa*	
Rhamnus purshiana	*Holodiscus discolor*	*Alopecurus pratensis*	
Spiraea douglasii	*Cornus stolonifera*	*Festuca rubra*	
Rosa nutkana		*Symphoricarpos albus*	
Quercus garryana		*Berberis repens*	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A) Yes B: No

What is the dominant vegetation layer in the riparian area?

(A) Woody vegetation > 1 m B: Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

(A) Yes B: No

Is large woody debris present in the riparian area?

(A) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

(A) <25% B: Between 25 and 75% C: >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-9-99	Riparian Code: MCN-1.2A
Investigator(s): Jeanne Fromm	Approx. length (feet): 9,677
Riparian Area Location: This riparian area is located around future Lake Turner, the active gravel mine in North Turner.	

The assessment is based on the reclamation plan.

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	B	1	12	A	3
2	A	3	7	A	3	10	A	3	13	A	3
3	A	3	8	B	1	11	A	2	14	A	2
4	A	3		Total	7		Total	6	15	A	3
5	A	2							16	A	3
	Total	14							17	A	3
									18	A	3
									19	A	3
										Total	23
High	12-14	X	High	8-9		High	7-8		High	19-23	X
Med	8-11		Med	5-7	X	Med	5-6	X	Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A) Less than 10% | B: Between 10-20% | C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

(A) Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A) Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10% | B: 10 - 25% | C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate | B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT	
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?	
(A) Yes	B: No
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*	
Is woody vegetation greater than 1 meter high dominant in the flood prone area?	
(A) Yes	B: No, or no flood prone area present
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*	
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)	
A: No	(B) Yes
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*	

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
A: Yes	(B) No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A) Yes	B: No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

Water temperature in the lake will also be related to depth, which is unknown. The lake's long axis trends north-south, which decreases the effectiveness of shading from the riparian area. The lake is relatively large compared to the riparian area and will not receive optimal shading from topographic features such as a ridge oriented east-west on the south side of the lake.

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

(A:) More than 2 layers	B: 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A:) Yes	B: No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A:) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A:) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A:) Yes	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

(A:) <25%	B: Between 25 and 75%	C: >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 9-10-99 & 11-4-99	Riparian Mapping Code: MCN-1.2B R & L
Investigator(s): Jeanne Fromm	Reach Length (feet): 1,992

Location:
Legal - Township 8S Range 2W Section 20
Other- The riparian area is the right and left bank of an unnamed intermittent drainage between the future Lake Turner and the footslopes.

Dominant Tree Species: *Fraxinus latifolia* and *Quercus garryana*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75'

PTH Determined by:
☐On-site vegetation ☒Reference Site (Code MCS-2.1R)

Comments

This riparian area is located along an unnamed intermittent drainage flowing of west-facing slopes in North Turner and into future Lake Turner. Currently an active gravel mine. Here the stream has been channelized as it crosses farmed terrace surfaces.

Typical Cross Section

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 9-10-99	Riparian Mapping Code: MCN-1.2B R & L
Investigator(s): Jeanne Fromm	Reach Length (feet): 1,992
Verification Type: On-site and off-site	Hydrologic Basin: Mill Creek North

Location:
Legal - Township 8S Range 2W Section 20
Other - The riparian area is the right and left bank of an unnamed intermittent drainage between the future Lake Turner and the footslopes.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Unnamed intermittent stream	5-7
Lake/Pond	
Wetland R4, PSS	

LWI Wetland Code: MCN-D

	YES	NO	Comments
Water present year round?		X	
Are salmonids present in adjacent water resource?		X	
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: McAlpin silty clay loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? No.

Adjacent Existing Land Uses (check those that apply) ☒Agriculture ☐Confined Animal Feeding Operation ☒Commercial/Industrial active gravel mine ☐Residential	☐Roads ☒Undeveloped ☐Forest ☒Other-Pasture Comments-Designated

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Crataegus douglasii		*Festuca arundinacea*	
Rubus discolor		*Cirsium arvense*	
Corylus cornuta		*Cirsium vulgare*	
		Agrostis stolonifera	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A) Yes B: No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m (B) Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

A: Yes (B) No

Is large woody debris present in the riparian area?

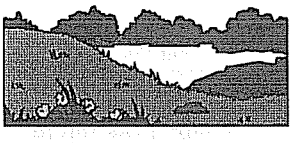
A: Yes (B) No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C) >75%



Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 9-10-99 & 11-4-99	Riparian Code: MCN-1.2B R & L
Investigator(s): Jeanne Fromm	Approx. length (feet): 1,992
Riparian Area Location: The riparian area is the right and left bank of an unnamed intermittent drainage between the future Lake Turner and the footslopes.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	A	3	12	C	1
2	B	2	7	B	1	10	B	2	13	B	2
3	B	2	8	B	1	11	B	1	14	B	1
4	A	3		Total	5		Total	6	15	B	1
5	A	2							16	A	3
	Total	12							17	B	1
									18	A	3
									19	C	1
										Total	13
High	12-14	X	High	8-9		High	7-8		High	19-23	
Med	8-11		Med	5-7	X	Med	5-6	X	Med	13-18	X
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A) Less than 10% | B: Between 10-20% | C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high. | (B) Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

A: Woody vegetation > 1 m high. | (B) Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10% | B: 10 - 25% | C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate | B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
A: Yes	(B) No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
A: Yes	(B) No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	B: 2 layers	(C) 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

A: Yes	(B) No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

A: Yes	(B) No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

A: Yes	(B) No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A) Yes Narrow wetland	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	B: Between 25 and 75%	(C) >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 11-4-99	Riparian Mapping Code: MCN-1.2C R & L
Investigator(s): Jeanne Fromm	Reach Length (feet): 1,374

Location:
Legal - Township 8S Range 2W Section 21
Other- The riparian area is the left and right banks of an unnamed intermittent stream between the head waters and the break in slope at the valley.

Dominant Tree Species: *Quercus garryana* and *Pseudotsuga menziesii*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-120'

PTH Determined by:
☒On-site vegetation ☐Reference Site (Code)

Comments

This unnamed intermittent stream drains west facing-slopes in northern Turner. Springs occur at the break in slope at the valley margin. This small watershed is mainly undeveloped forest with scattered homes, pastures, and old Christmas-tree plantations.

Typical Cross Section

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-8-99	Riparian Mapping Code: MCN-1.2C R & L
Investigator(s): Jeanne Fromm	Reach Length (feet): 1,374
Verification Type: Off-site	Hydrologic Basin: Mill Creek North

Location:
Legal - Township 8S Range 2W Section 21
Other - The riparian area is the left and right banks of an unnamed intermittent stream between the head waters and the break in slope at the valley.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Intermittent Stream	4
Lake/Pond	
Wetland R4	

LWI Wetland Code: MCN-D

	YES	NO	Comments
Water present year round?		X	
Are salmonids present in adjacent water resource?		X	
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: Nekia silty clay loam, 2-7% and 12-20% slopes
Potential Erosion Hazard:

Within a FEMA 100-year floodplain? No.

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☒Residential	☐Roads ☒Undeveloped ☒Forest ☐Other Comments-

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Quercus garryana		*Corylus cornuta*	
Acer macrophyllum		*Festuca arundinacea*	
Pseudotsuga menziesii			

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

A: Less than 10% (B) Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

(A) No B: Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A) Yes B: No

What is the dominant vegetation layer in the riparian area?

(A) Woody vegetation > 1 m B: Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

(A) Yes B: No

Is large woody debris present in the riparian area?

(A) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

(A) <25% B: Between 25 and 75% C: >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-4-99	Riparian Code: MCN-1.2C R & L
Investigator(s): Jeanne Fromm	Approx. length (feet): 1,374
Riparian Area Location: The riparian area is the left and right banks of an unnamed intermittent stream between the head waters and the break in slope at the valley.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	B	2	6	B	1	9	A	3	12	A	3
2	A	3	7	B	1	10	A	3	13	A	3
3	A	3	8	A	3	11	A	2	14	A	2
4	A	3		Total	5		Total	8	15	A	3
5	A	2							16	A	3
	Total	13							17	B	1
									18	B	1
									19	A	3
										Total	19
High	12-14	X	High	8-9		High	7-8	X	High	19-23	X
Med	8-11		Med	5-7	X	Med	5-6		Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

A: Less than 10% | (B) Between 10-20% | C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

(A) Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A) Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10% | B: 10 - 25% | C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate | B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT	
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?	
A: Yes	(B) No
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*	
Is woody vegetation greater than 1 meter high dominant in the flood prone area?	
A: Yes	(B) No, or no flood prone area present
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*	
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)	
(A) No	B: Yes
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*	

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A) Yes	B: No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

(A) More than 2 layers	B: 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A) Yes	B: No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water prese..t throughout the year?

A: Yes	(B) No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

A: Yes	(B) No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

(A) <25%	B: Between 25 and 75%	C: >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 9-17-99	Riparian Mapping Code: MCC-1.1R, MCS-2.3R
Investigator(s): Jeanne Fromm	Reach Length (feet): 615 + 361=976

Location:
Legal - Township 8S Range 2W Section 28
Other- Riparian area is the right bank of Mill Creek between the edge of forested footslope and the open terraced area south of Cedar Lane.

Dominant Tree Species: *Pseudotsuga meniesii* and *Acer macrophyllum*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 90-120/150'

PTH Determined by:
☒ On-site vegetation ☐ Reference Site (Code)

Comments

This riparian area is located at the base of the footslopes. Footslopes have 2-20% slopes and are mostly forested. Floodplain is narrow on the right bank due to proximity of footslope.

Photo shows MCN-1.1R.

Typical Cross Section

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 9-17-99	Riparian Mapping Code: MCC-1.1R, MCS-2.3R
Investigator(s): Jeanne Fromm	Reach Length (feet): 615 + 361=976
Verification Type: On-site	Hydrologic Basin: Mill Ck. Central, Mill Ck. So.

Location:
Legal - Township 8S Range 2W Section 28
Other - Riparian area is the right bank of Mill Creek between the edge of forested footslope and the open terraced area south of Cedar Lane.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Mill Creek	45
Lake/Pond	
Wetland R2	

LWI Wetland Code: MSGA + MCC-A

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?	X		
Is the water resource listed for temperature on DEQ's 303(d) list?		X	Listed for high bacteria levels.

OTHER INFORMATION

Soil—Mapped Series: Courtney gravelly silty clay loam, Nekia silty clay loam
Potential Erosion Hazard: slight to moderate

Within a FEMA 100-year floodplain? Just footslope adjacent to creek

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☐Residential	☐Roads ☒Undeveloped ☒Forest ☐Other Comments-Designed semi-public and residential

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Pseudotsuga menziesii		*Phalaris arundinacea*	
Acer macrophyllum		*Ranunculus repens*	
Quercus garryana		*Bidens frondosa*	
Fraxinus latifolia		*Carex obnupta*	
Physocarpus capitatus		*Festuca arundinacea*	
Alnus rubra		*Agrostis stolonifera*	
		Dactylis glomerata	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

A: Less than 10% (B) Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

(A) No B: Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A) Yes B: No

What is the dominant vegetation layer in the riparian area?

(A) Woody vegetation > 1 m B: Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

(A) Yes B: No

Is large woody debris present in the riparian area?

(A) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

(A) <25% B: Between 25 and 75% C: >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 9-17-99	Riparian Code: MCC-1.1R, MCS-2.3R
Investigator(s): Jeanne Fromm	Approx. length (feet): 615 + 361=976
Riparian Area Location: Riparian area is the right bank of Mill Creek between the edge of forested footslope and the open terraced area south of Cedar Lane.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	B	2	6	B	1	9	A	3	12	A	3
2	A	3	7	A	3	10	A	3	13	A	3
3	A	3	8	A	3	11	A	2	14	A	2
4	A	3		Total	7		Total	8	15	A	3
5	A	2							16	A	3
	Total	13							17	A	3
									18	A	3
									19	A	3
										Total	23
High	12-14	X	High	8-9		High	7-8	X	High	19-23	X
Med	8-11		Med	5-7	X	Med	5-6		Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

A: Less than 10%	(B) Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10%	B: 10 - 25%	C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
A: Yes	(B:) No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
(A:) Yes	B: No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
(A:) No	B: Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A:) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A:) Yes	B: No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

(A:) More than 2 layers	B: 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A:) Yes	B: No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A:) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A:) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A:) Yes	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

(A:) <25%	B: Between 25 and 75%	C: >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 9-17-99 & 11-4-99	Riparian Mapping Code: MCC-1.1A R & L
Investigator(s): Jeanne Fromm	Reach Length (feet): 707

Location:
Legal - Township 8S Range 2W Section 28
Other- Unnamed drainage located in south facing slopes south of Franzen Reservoir.

Dominant Tree Species: *Pseudotsuga menziesii* and *Acer macrophyllum*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 120/200+'

PTH Determined by:
☒ On-site vegetation ☐ Reference Site (Code)

Comments

This small watershed is mostly undeveloped and occupied by a forest and pasture. Part of forest has been logged. Drainage probably flowed intermittently, but the reservoir has a piped discharge to the watercourse which supplements natural flow. Riprap has been placed to stabilize channel erosion.

Typical Cross Section

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 9-17-99 & 11-4-99	Riparian Mapping Code: MCC-1.1A R & L
Investigator(s): Jeanne Fromm	Reach Length (feet): 707
Verification Type: On-site	Hydrologic Basin: Mill Creek Central

Location:
Legal - Township 8S Range 2W Section 28
Other - Unnamed drainage located in south facing slopes south of Franzen Reservoir.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River unnamed intermittent stream	4
Lake/Pond	
Wetland	

LWI Wetland Code:

	YES	NO	Comments
Water present year round?		X	
Are salmonids present in adjacent water resource?		X	
Is the water resource listed for temperature on DEQ's 303(d) list?		X	Unknown

OTHER INFORMATION

Soil—Mapped Series: Nekia silty clay loam, 2-7% slopes
Potential Erosion Hazard:

Within a FEMA 100-year floodplain? No, except at south end where stream flows into Mill Creek

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☐Residential	☐Roads ☒Undeveloped ☒Forest ☒Other-Semi-public (Franzen Reservoir) Comments-Designated residential

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Pseudotsuga menziesii		*Hedera helix*	
Acer macrophyllum		*Rubus ursinus*	
Corylus cornuta		*Polystichum munitum*	
Ilex aquifolium			

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?
A: Less than 10% (B) Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?
(A) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)
A: No (B) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?
A: Yes (B) No

What is the dominant vegetation layer in the riparian area?
(A) Woody vegetation > 1 m B: Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?
(A) Yes B: No

Is large woody debris present in the riparian area?
(A) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?
(A) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?
(A) <25% B: Between 25 and 75% C: >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-4-99	Riparian Code: MCC-1.1A R & L
Investigator(s): Jeanne Fromm	Approx. length (feet): 707
Riparian Area Location: Unnamed drainage located in south facing slopes south of Franzen Reservoir.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	B	2	6	A	3	9	B	1	12	A	3
2	A	3	7	A	3	10	A	3	13	A	3
3	A	3	8	B	1	11	A	2	14	A	2
4	A	3		Total	7		Total	6	15	A	3
5	A	2							16	A	3
	Total	13							17	B	1
									18	B	1
									19	A	3
										Total	19
High	12-14	X	High	8-9		High	7-8		High	19-23	X
Med	8-11		Med	5-7	X	Med	5-6	X	Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

A: Less than 10%	(B) Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10%	B: 10 - 25%	C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A:) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
(A:) Yes	B: No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B:) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
A: Yes	(B:) No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A:) Yes	B: No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

(A) More than 2 layers	B: 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A) Yes	B: No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

A: Yes	(B) No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

A: Yes	(B) No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

(A) <25%	B: Between 25 and 75%	C: >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 9-15-99 & 11-4-99	Riparian Mapping Code: MCC-1.1C
Investigator(s): Jeanne Fromm	Perimeter Reach Length (feet): 746

Location:
Legal - Township 8S Range 2W Section 28
Other- Farmland in east central Turner off Combest Lane.

Dominant Tree Species: *Quercus garryana* and *Pseudotsuga menziesii*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-120/0'

PTH Determined by:
☐ On-site vegetation ☒ Reference Site (Code See Wetland Plot 28-2)

Comments

The water resource is a constructed farm pond located in the headwaters of a south-facing watershed drained by MCC-1.1A. Pond is spring fed, and a trickle was observed in September. Outflow is a spillway over the berm and flow is only channelized for 50' suggesting low surface water discharge rates. Area adjacent to pond is grazed. Fish in pond.

Typical Cross Section

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 9-15-99 & 11-4-99	Riparian Mapping Code: MCC-1.1C
Investigator(s): Jeanne Fromm	Perimeter Length (feet): 746
Verification Type: On-site	Hydrologic Basin: Mill Creek Central

Location:
Legal - Township 8S Range 2W Section 28
Other - Farmland in east central Turner off Combest Lane.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River	
Lake/Pond Unnamed farm pond	
Wetland PUB	

LWI Wetland Code: MCC-D

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?		X	
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: Nekia silty clay loam, 2-7% and 7-12 % slopes
Potential Erosion Hazard: slight to moderate

Within a FEMA 100-year floodplain? No.

Adjacent Existing Land Uses (check those that apply) ☒Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☐Residential	☐Roads ☒Undeveloped ☐Forest ☐Other Comments-

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
		Rumex crispus	
		Agrostis stolonifera	
		Cynosurus echinatus	

MCC-1.1C

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?
A: Less than 10% (B) Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?
(A) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)
A: No (B) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?
(A) Yes B: No

What is the dominant vegetation layer in the riparian area?
A: Woody vegetation > 1 m high. B: Herbaceous or woody vegetation < 1 m high. (C) Bare ground

Does woody vegetation hang over the edge of the water?
A: Yes (B) No

Is large woody debris present in the riparian area?
A: Yes (B) No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?
A: >40% B: Between 10 and 40% (C) <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?
A: <25% B: Between 25 and 75% (C) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 9-15-99 & 11-4-99	Riparian Code: MCC-1.1C
Investigator(s): Jeanne Fromm	Approx. length (feet): 746
Riparian Area Location: Farmland in east central Turner off Combest Lane.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	B	2	6	B	1	9	A	3	12	C	1
2	C	1	7	B	1	10	C	1	13	C	1
3	C	1	8	B	1	11	B	1	14	B	1
4	A	3		Total	3		Total	5	15	B	1
5	A	2							16	C	1
	Total	9							17	A	3
									18	B	1
									19	C	1
										Total	10
High	12-14		High	8-9		High	7-8		High	19-23	
Med	8-11	X	Med	5-7		Med	5-6	X	Med	13-18	
Low	5-7		Low	3-4	X	Low	3-4		Low	8-12	X

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

A: Less than 10% | (B) Between 10-20% | C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | (C) Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

A: Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | (C) Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10% | B: 10 - 25% | C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate | B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT

Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?

A: Yes	(B) No

Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*

Is woody vegetation greater than 1 meter high dominant in the flood prone area?

A: Yes	(B) No, or no flood prone area present

Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No	(B) Yes

Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*

THERMAL REGULATION

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A) Yes	B: No

Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	(C) Bare ground

Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

A: Yes	(B) No

Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	B: 2 layers	(C) 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	(C) Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

A: Yes	(B) No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

A: Yes	(B) No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40%	B: Between 10 and 40%	(C) <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

A: Yes	(B) No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	B: Between 25 and 75%	(C) >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-4-99	Riparian Mapping Code: MCC-1.2R, MCC-2R
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,993 + 667=3,660
Verification Type: On-site & Off-site	Hydrologic Basin: Mill Creek Central

Location:
Legal - Township 8S Range 2W Section 29
Other - This riparian area is the right bank of Mill Creek between Cedar Lane and the confluence with McKinney Creek.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Mill Creek	
Lake/Pond	
Wetland R2	

LWI Wetland Code: MCC-A

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?	X		
Is the water resource listed for temperature on DEQ's 303(d) list?		X	Listed due to high bacteria levels.

OTHER INFORMATION

Soil—Mapped Series: Courtney gravelly silty clay loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Yes. Zone AE and floodway

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☒Commercial/Industrial ☒Residential	☒Roads ☐Undeveloped ☐Forest ☒Other-Public School Comments-

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceo (trees, shrubs
Acer macrophyllum		*Rubus discolor*
Fraxinus latifolia		*Phalaris arundinacea*
Rubus discolor		*Ranunculus repens*
Cornus stolonifera		*Daucus carota*
Salix lasiandra		*Symphoricarpos albus*
Alnus rubra		*Festuca arundinacea*
Cytisus scoparius		*Phleum pratense*
Quercus garryana		

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?
A: Less than 10% (B) Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?
A: < 10% B: 10 - 25% (C) >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)
A: No (B) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?
(A) Yes B: No

What is the dominant vegetation layer in the riparian area?
A: Woody vegetation > 1 m (B) Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?
(A) Yes B: No

Is large woody debris present in the riparian area?
(A) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?
A: >40% (B) Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?
A: <25% B: Between 25 and 75% (C) >75%

Riparian Width Determination

Date(s) of work: 8-18-99 & 11-4-99	Riparian Mapping Code: MCC-1.2R, MCC-2R
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,993 + 667=3,660

Location:
Legal - Township 8S Range 2W Section 29
Other- This riparian area is the right bank of Mill Creek between Cedar Lane and the confluence with McKinney Creek.

Dominant Tree Species: *Fraxinus latifolia* and *Quercus garryana*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75/15'

PTH Determined by:
☐ On-site vegetation ☒ Reference Site (Code MCS-2.1R)

Comments

This area is located in downtown Turner where a variety of land uses occur. Three bridges cross this reach and riprap protects all the abutments. This is the oldest part of Turner and fill is common. The creek flows northeast and then bends sharply to the northwest. Creek banks are steepest and deepest in this part of town and probably related to previous fill.

Photo shows view of MCC-1.2R at 5th St. bridge over Mill Creek.

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-4-99	Riparian Code: MCC-1.2R, MCC-2R
Investigator(s): Jeanne Fromm	Approx. length (feet): 2,993 + 667=3,660
Riparian Area Location: This riparian area is the right bank of Mill Creek between Cedar Lane and the confluence with McKinney Creek.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	B	2	6	A	3	9	A	3	12	B	2
2	B	2	7	B	1	10	B	2	13	B	2
3	A	3	8	B	1	11	A	2	14	A	2
4	C	1		Total	5		Total	7	15	A	3
5	A	2							16	B	2
	Total	10							17	A	3
									18	A	3
									19	C	1
										Total	18
High	12-14		High	8-9		High	7-8	X	High	19-23	
Med	8-11	X	Med	5-7	X	Med	5-6		Med	13-18	X
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

A: Less than 10% | (B) Between 10-20% | C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high. | (B) Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A) Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

A: < 10% | B: 10 - 25% | (C) >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate | B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A:) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
A: Yes	(B:) No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B:) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A:) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A:) Yes	B: No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	(B:) 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A:) Yes	B: No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A:) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40%	(B:) Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A:) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A:) Yes Narrow wetlands	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	B: Between 25 and 75%	(C:) >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 8-18-99 & 11-4-99	Riparian Mapping Code: MCC-3.1R
Investigator(s): Jeanne Fromm	Reach Length (feet): 1,089

Location:
Legal - Township 8S Range 2W Section 29
Other- This riparian area is the right bank along Mill Creek between the confluence with McKinney Creek and 600' north of Delaney Road Bridge.

Dominant Tree Species: *Fraxinus latifolia* and *Quercus garryana*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75/150'

PTH Determined by:
☒ On-site vegetation ☐ Reference Site (Code)

Comments

This area located on the point bar of Mill Creek just downstream of the confluence with McKinney Creek. An overflow channel cuts across the point bar and is culverted under Delaney Road east of the bridge. Adjacent areas have been filled. The basalt quarry on west side of creek is removing bedrock knob. Deer observed on field visit in November. The southern portion of this reach is being cleared and graded. Low-lying swales in the floodplain and areas immediately adjacent to Mill Creek are wetlands, but the dominant habitat is Oregon white oak uplands.

Photo shows MCC-3.1 looking downstream along Mill Creek at Delaney Rd. Bridge.

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-4-99	Riparian Mapping Code: MCC-3.1R
Investigator(s): Jeanne Fromm	Reach Length (feet): 1,089
Verification Type: On-site & Off-site	Hydrologic Basin: Central Mill Creek

Location:
Legal - Township 8S Range 2W Section 29
Other - This riparian area is the right bank of Mill Creek between the confluence with McKinney feet about 600' north of Delaney Rd. Bridge.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Mill Creek	
Lake/Pond	
Wetland R2	

LWI Wetland Code: MCC-A

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?	X		
Is the water resource listed for temperature on DEQ's 303(d) list?		X	Listed for elevated bacteria levels.

OTHER INFORMATION

Soil—Mapped Series: Courtney gravelly silty clay loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Yes. Zone AE and floodway

Adjacent Existing Land Uses (check those that apply) ❑Agriculture ❑Confined Animal Feeding Operation ☒Commercial/Industrial ☒Residential	❑Roads ☒Undeveloped ❑Forest ❑Other Comments-Designated residential

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Populus balsamifera	*Rosa pisocarpa*	*Phalaris arundinacea*	
Quercus garryana	*Cornus stolonifera*	*Hedera helix*	
Fraxinus latifolia		*Agrostis stolonifera*	
Rubus discolor		*Rumex crispus*	
Pseudotsuga menziesii		*Dipsacus sylvestris*	
Alnus rubra		*Symphoricarpos albus*	
Salix lasiandra		*Solanum dulcamara*	
Physocarpus capitatus		*Lotus corniculatus*	
Spiraea douglasii			
Rubus laciniatus			

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

(A) No B: Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A) Yes B: No

What is the dominant vegetation layer in the riparian area?

(A) Woody vegetation > 1 m B: Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

(A) Yes B: No

Is large woody debris present in the riparian area?

(A) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

(A) <25% B: Between 25 and 75% C: >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-4-99	Riparian Code: MCC-3.1R
Investigator(s): Jeanne Fromm	Approx. length (feet): 1,089
Riparian Area Location: This riparian area is the right bank along Mill Creek between the confluence with McKinney Creek and 600' north of Delaney Road Bridge.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	A	3	12	A	3
2	A	3	7	A	3	10	A	3	13	A	3
3	A	3	8	A	3	11	A	2	14	A	2
4	A	3		Total	9		Total	8	15	A	3
5	A	2							16	A	3
	Total	14							17	A	3
									18	A	3
									19	A	3
										Total	23
High	12-14	X	High	8-9	X	High	7-8	X	High	19-23	X
Med	8-11		Med	5-7		Med	5-6		Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A) Less than 10%	B: Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10%	B: 10 - 25%	C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A:) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
(A:) Yes	B: No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
(A:) No	B: Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A:) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A:) Yes	B: No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

(A:) More than 2 layers	B: 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A:) Yes	B: No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A:) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A:) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A:) Yes Some wetlands	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

(A:) <25%	B: Between 25 and 75%	C: >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 9-17-99	Riparian Mapping Code: MCS-2.2A R & L
Investigator(s): Jeanne Fromm	Reach Length (feet): 438
Verification Type: On-site	Hydrologic Basin: Mill Creek South

Location:
Legal - Township 8S Range 2W Section 28
Other - This riparian area is the left and right banks of a small perennial stream located in on old overflow channel of Mill Creek.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Unnamed small perennial stream in forested wetland	3-5
Lake/Pond	
Wetland PFO	

LWI Wetland Code: MCS-B

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?		X	
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: Courtney gravelly silty clay loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Yes, on the west end - Zone AE

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☐Residential	☐Roads ☐Undeveloped ☐Forest ☒Other-Semi-private church land Comments-

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Alnus rubra		*Polygonum hydropiperoides*	
Fraxinus latifolia		*Ranunculus repens*	
Quercus garryana		*Bidens frondosa*	
		Juncus effusus	
		Veronica americana	
		Typha latifolia	
		Festuca arundinacea	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

A: < 10% (B) 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A) Yes B: No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m high. (B) Herbaceous or woody vegetation < 1 m high. C: Bare ground

Does woody vegetation hang over the edge of the water?

(A) Yes B: No

Is large woody debris present in the riparian area?

(A) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40% (B) Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 9-15-99 & 11-5-99	Riparian Code: MCS-2.2A R & L
Investigator(s): Jeanne Fromm	Approx. length (feet): 438
Riparian Area Location: This riparian area is the left and right banks of a small perennial stream located in on old overflow channel of Mill Creek.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	A	3	12	B	2
2	B	2	7	B	1	10	B	2	13	B	2
3	B	2	8	B	1	11	A	2	14	A	2
4	B	2		Total	5		Total	7	15	A	3
5	A	2							16	B	2
	Total	11							17	A	3
									18	A	3
									19	C	1
										Total	18
High	12-14		High	8-9		High	7-8	X	High	19-23	
Med	8-11	X	Med	5-7	X	Med	5-6		Med	13-18	X
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY		
What is the average slope in the riparian area?		
(A) Less than 10%	B: Between 10-20%	C: Greater than 20%
Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*		
What is the dominant vegetation cover in the riparian area?		
A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*		
What is the dominant vegetation at the top of bank (if defined) or edge of water resource?		
A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*		
What is the extent of impervious surfaces within the riparian area?		
A: < 10%	(B) 10 - 25%	C: >25%
Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*		
How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.		
(A) Low, slight, moderate	B: High, severe, very high	
Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*		

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A:) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
A: Yes	(B) No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A:) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A:) Yes	B: No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	(B) 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A) Yes	B: No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40%	(B) Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A) Yes	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	B: Between 25 and 75%	(C) >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 11-4-99	Riparian Mapping Code: MCS-2.2B L
Investigator(s): Jeanne Fromm	Reach Length (feet): 1,830

Location:
Legal - Township 8S Range 2W Section 28
Other- This is the left bank of the roadside ditch that runs along the west side of Witzel Road and the north side of Marion Road.

Dominant Tree Species: Mainly ornamental - *Quercus garryana* and *Fraxinus latifolia*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75'

PTH Determined by:
☐ On-site vegetation ☒ Reference Site (Code MCS-2.2A R & L)

Comments

This constructed ditch conveys flow from south facing footslopes and the terrace at the base of the hills. The Terrace surface in this part of Turner had many northwest trending swales and this ditch intercepts flow from this natural drainage system.

Typical Cross Section

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-4-99	Riparian Mapping Code: MCS-2.2B L
Investigator(s): Jeanne Fromm	Reach Length (feet): 1,830
Verification Type: On-site	Hydrologic Basin: Mill Creek South

Location:
Legal - Township 8S Range 2W Section 28
Other - This is the left bank of the roadside ditch that runs along the west side of Witzel Road and the north side of Marion Road.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Intermittent drainage	6
Lake/Pond	
Wetland R3	

LWI Wetland Code: MCS-E

	YES	NO	Comments
Water present year round?		X	
Are salmonids present in adjacent water resource?		X	
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: Courtney and Clackamas
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Zone AE, X, and floodway on west end

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☒Residential	☒Roads ☐Undeveloped ☐Forest ☒Other Semi-public Comments-Semi-Public church facilities

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Salix lasiandra		*Holcus lanatus*	
Rosa nutkana		*Dactylis glomerata*	
Rubus discolor		*Festuca arundinacea*	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

A: < 10% B: 10 - 25% (C:) >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B:) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A:) Yes B: No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m high. B: Herbaceous or woody vegetation < 1 m high. (C:) Bare ground Asphalt

Does woody vegetation hang over the edge of the water?

A: Yes (B:) No

Is large woody debris present in the riparian area?

A: Yes (B:) No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40% (B:) Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C:) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-4-99	Riparian Code: MCS-2.2B L
Investigator(s): Jeanne Fromm	Approx. length (feet): 1,830
Riparian Area Location: This is the left bank of the roadside ditch that runs along the west side of Witzel Road and the north side of Marion Road.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	A	3	12	C	1
2	C	1	7	B	1	10	C	1	13	C	1
3	B	2	8	B	1	11	B	1	14	B	1
4	C	1		Total	5		Total	5	15	B	1
5	A	2							16	C	1
	Total	9							17	B	1
									18	B	1
									19	C	1
										Total	8
High	12-14		High	8-9		High	7-8		High	19-23	
Med	8-11	X	Med	5-7	X	Med	5-6	X	Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	X

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A:) Less than 10%	B: Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	(C:) Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

A: < 10%	B: 10 - 25%	(C:) >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A:) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT	
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?	
(A:) Yes	B: No
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*	
Is woody vegetation greater than 1 meter high dominant in the flood prone area?	
A: Yes	(B:) No, or no flood prone area present
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*	
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)	
A: No	(B:) Yes
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*	

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A:) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
A: Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	(C:) Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
A: Yes	(B:) No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	B: 2 layers	(C:) 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	(C:) Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

A: Yes	(B:) No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

A: Yes	(B:) No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40%	B: Between 10 and 40%	(C:) <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

A: Yes	(B:) No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

A: Yes	(B:) No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	B: Between 25 and 75%	(C:) >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 11-4-99	Riparian Mapping Code: MCS-2.2B R
Investigator(s): Jeanne Fromm	Reach Length (feet): 1,825

Location:
Legal - Township 8S Range 2W Section 28
Other- This is the right bank of the roadside ditch that runs along the west side of Witzel Road and north side of Marion Road.

Dominant Tree Species: Existing are all ornamental, but would be *Quercus garryana* and *Fraxinus latifolia*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75'

PTH Determined by:
☐ On-site vegetation ☒ Reference Site (Code MCS-2.2A R & L)

Comments

This constructed ditch conveys flow from south facing footslopes and the terrace at the base of the hills. The Terrace surface in this part of Turner had many northwest trending swales, and this ditch intercepts flow from this natural drainage system.

Typical Cross Section

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-4-99	Riparian Mapping Code: MCS-2.2B R
Investigator(s): Jeanne Fromm	Reach Length (feet): 1,825
Verification Type: On-site	Hydrologic Basin: Mill Creek South

Location:
Legal - Township 8S Range 2W Section 28
Other - This is the right bank of the roadside ditch that runs along the west side of Witzel Road and north side of Marion Road.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Intermittent drainage	6
Lake/Pond	
Wetland R3	

LWI Wetland Code: MCS-E

	YES	NO	Comments
Water present year round?		X	
Are salmonids present in adjacent water resource?		X	
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: Courtney and Clackamas
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Zone AE, X, & floodway on west end.

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☒Residential	☐Roads ☐Undeveloped ☐Forest ☒Other Semi-public church facilities Comments

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Crataegus douglasii		*Dipsacus sylvestris*	
Rubus discolor		*Festuca arundinacea*	
Lombardy poplar		*Phalaris arundinacea*	
Pyrus malus		*Holcus lanatus*	
Rosa nutkana		*Dactylis glomerata*	
Rubus laciniatus		*Daucus carota*	
Symphoricarpos albus			
Cytisus scoparius			

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A:) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B:) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A:) Yes B: No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m (B:) Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

A: Yes (B:) No

Is large woody debris present in the riparian area?

A: Yes (B:) No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C:) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-4-99	Riparian Code: MCS-2.2B R
Investigator(s): Jeanne Fromm	Approx. length (feet): 1,825
Riparian Area Location: This is the right bank of the roadside ditch that runs along the west side of Witzel Road and north side of Marion Road.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	A	3	12	B	2
2	B	2	7	B	3	10	B	2	13	B	2
3	B	2	8	B	1	11	B	1	14	B	1
4	A	3		Total	5		Total	6	15	B	1
5	A	2							16	A	3
	Total	12							17	B	1
									18	B	1
									19	C	1
										Total	12
High	12-14	X	High	8-9		High	7-8		High	19-23	
Med	8-11		Med	5-7	X	Med	5-6	X	Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	X

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A:) Less than 10% | B: Between 10-20% | C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high. | (B:) Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

A: Woody vegetation > 1 m high. | (B:) Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A:) < 10% | B: 10 - 25% | C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A:) Low, slight, moderate | B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A:) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
A: Yes	(B:) No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B:) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A:) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
A: Yes	(B:) No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT		
How many vegetation layers (canopy, mid-story, ground cover) are present?		
A: More than 2 layers	(B:) 2 layers	C: 1 layer or unvegetated
Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*		
What is the dominant vegetation cover in the riparian area?		
A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*		
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A: Yes	(B:) No	
Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*		
Is large woody debris present in the riparian area?		
A: Yes	(B:) No	
Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*		
What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?		
(A:) >40%	B: Between 10 and 40%	C: <10%
Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*		
Is surface water present throughout the year?		
A: Yes	(B:) No	
Rationale: *A perennial water source is valuable t wildlife during the summer months.*		
Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?		
A: Yes	(B:) No	
Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*		
What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?		
A: <25%	B: Between 25 and 75%	(C:) >75%
Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*		

Riparian Width Determination

Date(s) of work: 11-4-99	Riparian Mapping Code: MCS-2.2C L
Investigator(s): Jeanne Fromm	Reach Length (feet): 3,656

Location:
Legal - Township 8S Range 2W Section 28 & 33
Other- Left bank of constructed ditch along Marion Road.

Dominant Tree Species: None

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75'

PTH Determined by:
☐ On-site vegetation ☒ Reference Site (Code MCS-2.2A R & L)

Comments

This constructed ditch conveys flow from south facing footslopes and the terrace at the base of the hills. The Terrace surface in this part of Turner had many northwest trending swales and this ditch intercepts flow from this natural drainage system.

Typical Cross Section

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-4-99	Riparian Mapping Code: MCS-2.2 C L
Investigator(s): Jeanne Fromm	Reach Length (feet): 3,656
Verification Type:	Hydrologic Basin: Mill Creek South
Location: Legal - Township 8S Range 2W Section 28 & 33 Other - Left bank of constructed ditch along Marion Rd.	

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Intermittent channelized drainage	6
Lake/Pond	
Wetland PEM/R4	
LWI Wetland Code: MCS-E	

	YES	NO	Comments
Water present year round?		X	
Are salmonids present in adjacent water resource?		X	
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: Clackamas
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? About one-half (west and south ends) lies in Zone AE and the floodway.

Adjacent Existing Land Uses (check those that apply) ☒Agriculture ☐Confined Animal Feeding Operation ☒Commercial/Industrial ☒Residential	☐Roads ☒Undeveloped ☐Forest ☒Other Semi-public church facilities Comments

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
		lawn	
Crataegus douglasii		*Festuca arundinacea*	
Salix lasiandra		*Daucus carota*	
Rubus discolor			
Rosa nutkana			

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

A: < 10% (B:) 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B:) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A:) Yes B: No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m (B:) Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

A: Yes (B:) No

Is large woody debris present in the riparian area?

A: Yes (B:) No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C:) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-4-99	Riparian Code: MCS-2.2C L
Investigator(s): Jeanne Fromm	Approx. length (feet): 3,656
Riparian Area Location: Left bank of constructed ditch along Marion Road.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	A	3	12	B	2
2	B	2	7	B	1	10	B	2	13	B	2
3	B	2	8	B	1	11	B	1	14	B	1
4	B	2		Total	5		Total	6	15	B	1
5	A	2							16	A	3
	Total	11							17	B	1
									18	B	1
									19	C	1
										Total	12
High	12-14		High	8-9		High	7-8		High	19-23	
Med	8-11	X	Med	5-7	X	Med	5-6	X	Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	X

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A:) Less than 10%	B: Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

A: < 10%	(B:) 10 - 25%	C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A:) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A:) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
A: Yes	(B:) No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B:) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A:) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
A: Yes	(B:) No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	(B:) 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

A: Yes	(B:) No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

A: Yes	(B:) No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

A: Yes	(B:) No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

A: Yes	(B:) No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	B: Between 25 and 75%	(C:) >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 11-4-99	Riparian Mapping Code: MCS-2.2C R
Investigator(s): Jeanne Fromm	Reach Length (feet): 3,695

Location:
Legal - Township 8S Range 2W Section 28 & 33
Other- Right bank of constructed ditch along Marion Road.

Dominant Tree Species: None

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75'

PTH Determined by:
☐On-site vegetation ☒ Reference Site (Code MCS-2.2A R & L)

Comments

This constructed ditch conveys flow from south facing footslopes and the terrace at the base of the hills. The terrace surface in this part of Turner had many northwest trending swales, and this ditch intercepts flow from this natural drainage system.

Typical Cross Section

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-4-99	Riparian Mapping Code: MCS-2.2C R
Investigator(s): Jeanne Fromm	Reach Length (feet): 3,695
Verification Type: On-site	Hydrologic Basin: Mill Creek South
Location: Legal - Township 8S Range 2W Section 28 & 33 Other - Right bank of constructed ditch along Marion Road.	

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Intermittent drainage	6
Lake/Pond	
Wetland PEM/R4	
LWI Wetland Code: MCS-E	

	YES	NO	Comments
Water present year round?		X	
Are salmonids present in adjacent water resource?		X	
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: Clackamas gravelly loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? About one-half (west and south ends) lies in Zone AE and the floodway.

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☒Residential	☒Roads ☐Undeveloped ☐Forest ☒Other Semi-public church grounds Comments

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Rubus discolor		*Festuca arundinacea*	
Rosa nutkana		*Daucus carota*	
Crataegus douglasii		*Rubus ursinus*	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

A: < 10% B: 10 - 25% (C:) >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B:) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A:) Yes B: No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m B: Herbaceous or woody vegetation < 1 m high. (C:) Bare ground high.

Does woody vegetation hang over the edge of the water?

A: Yes (B:) No

Is large woody debris present in the riparian area?

A: Yes (B:) No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40% B: Between 10 and 40% (C:) <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C:) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-4-99	Riparian Code: MCS-2.2C R
Investigator(s): Jeanne Fromm	Approx. length (feet): 3,695
Riparian Area Location: Right bank of constructed ditch along Marion Road.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	A	3	12	C	1
2	C	1	7	B	1	10	C	1	13	C	1
3	B	2	8	B	1	11	B	1	14	B	1
4	C	1		Total	5		Total	5	15	B	1
5	A	2							16	C	1
	Total	9							17	B	1
									18	B	1
									19	C	1
										Total	8
High	12-14		High	8-9		High	7-8		High	19-23	
Med	8-11	X	Med	5-7	X	Med	5-6	X	Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	X

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A:) Less than 10%	B: Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	(C:) Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

A: < 10%	B: 10 - 25%	(C:) >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A:) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A:) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
A: Yes	(B:) No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B:) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A:) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
A: Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	(C:) Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
A: Yes	(B:) No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT		
How many vegetation layers (canopy, mid-story, ground cover) are present?		
A: More than 2 layers	B: 2 layers	(C:) 1 layer or unvegetated
Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*		
What is the dominant vegetation cover in the riparian area?		
A: Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	(C:) Bare ground
Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
A: Yes	(B:) No	
Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*		
Is large woody debris present in the riparian area?		
A: Yes	(B:) No	
Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*		
What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?		
A: >40%	B: Between 10 and 40%	(C:) <10%
Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*		
Is surface water present throughout the year?		
A: Yes	(B:) No	
Rationale: *A perennial water source is valuable t wildlife during the summer months.*		
Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?		
A: Yes	(B:) No	
Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*		
What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?		
A: <25%	B: Between 25 and 75%	(C:) >75%
Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*		

Riparian Width Determination

Date(s) of work: 7-15-99 & 11-3-99	Riparian Mapping Code: PL-1L
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,789

Location:
Legal - Township 8S Range 2W Section 32
Other- This riparian area is the left bank of the Perrin Lateral Canal between the study area boundary and the confluence with Turner Bypass.

Dominant Tree Species: *Fraxinus latifolia, Populus trichocarpa,* and *populus balsamifera*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 75-120'

PTH Determined by:
☐On-site vegetation ☒Reference Site (Code PL-2A R & L)

Comments

The canal has been relocated immediately west of 55th Ave. The original position of the canal was a swale located between the railroad and 55th Ave. The original location was a linear topographic low which served natural drainage functions.

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 7-15-99 & 11-3-99	Riparian Mapping Code: PL-1L
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,789
Verification Type: On-site	Hydrologic Basin: Perrin Lateral

Location:
Legal - Township 8S Range 2W Section 32
Other- This riparian area is the left bank of the Perrin Lateral Canal between the study area boundary and the confluence with Turner Bypass.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Relocated stream/canal	6-8
Lake/Pond	
Wetland R3	

LWI Wetland Code: PL-G

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?		?	Free and open. Connection to Mill Creek which is salmonid-bearing
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: Courtney silty gravelly clay loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Northern 1/3 is Zone AE & X

Adjacent Existing Land Uses (check those that apply) ☒Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☐Residential	☐Roads ☒Undeveloped ☐Forest ☐Other Comments-Designated for industrial

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Salix lasiandra		*Phalaris arundinacea*	*Rumex crispus*
Crataegus douglasii		*Salix lasiandra*	*Festuca arundinacea*
Populus balsamifera		*Dipsacus sylvestris*	*Rubus ursinus*
Rubus discolor		*Symphoricarpos albus*	*Geum macrophyllum*
		Cytisus scoparius	
		Spiraea douglasii	
		Rubus laciniatus	
		Solanum dulcamara	
		Juncus effusus	
		Rosa nutkana	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B) Yes Channelized

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

A: Yes (B) No But it's so narrow that overhanging branches could shade it.

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m high. (B) Herbaceous or woody vegetation < 1 m high. C: Bare ground

Does woody vegetation hang over the edge of the water?

A: Yes (B) No

Is large woody debris present in the riparian area?

A: Yes (B) No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 7-15-99 & 11-5-99	Riparian Code: PL-1L
Investigator(s): Jeanne Fromm	Approx. length (feet): 2,789
Riparian Area Location: This riparian area is the left bank of the Perrin Lateral Canal between the study area boundary and the confluence with Turner Bypass.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	B	1	12	C	1
2	B	2	7	B	1	10	B	2	13	B	2
3	B	2	8	B	1	11	B	1	14	B	2
4	A	3		Total	5		Total	4	15	B	1
5	A	2							16	A	3
	Total	12							17	A	3
									18	B	1
									19	B	2
										Total	15
High	12-14	X	High	8-9		High	7-8		High	19-23	
Med	8-11		Med	5-7	X	Med	5-6		Med	13-18	X
Low	5-7		Low	3-4		Low	3-4	X	Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A) Less than 10%	B: Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10%	B: 10 - 25%	C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
A: Yes	(B) No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
A: Yes	(B) No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
A: Yes	(B) No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	B: 2 layers	(C) 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

A: Yes	(B) No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

A: Yes	(B) No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

A: Yes	(B) No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	(B) Between 25 and 75%	C: >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 7-15-99 & 1-3-99	Riparian Mapping Code: PL-1R
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,767

Location:
Legal - Township 8S Range 2W Section 32
Other- This riparian area is the right bank of the Perrin Lateral Canal between the study area boundary and the confluence with Turner Bypass.

Dominant Tree Species: *Populus balsamifera* and *Fraxinus latifolia*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 75-120'

PTH Determined by:
☐On-site vegetation ☒Reference Site (Code PL-2A R & L)

Comments

This canal has been relocated immediately west of 55th Ave. The original location of canal was a swale located between the railroad and 55th Ave. The original canal location was a linear swale which served natural drainage functions.

Photo show confluence of Perrin Lateral Canal and Turner Bypass.

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 7-15-99 & 11-3-99	Riparian Mapping Code: PL-1R
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,767
Verification Type: On-site	Hydrologic Basin: Perrin Lateral

Location:
Legal - Township 8S Range 2W Section 32
Other - This riparian area is the right bank of the Perrin Lateral Canal between the study area boundary and the confluence with Turner Bypass.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Channelized canal	6-8
Lake/Pond	
Wetland R3	

LWI Wetland Code: PL-G

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?		X	Not known. There is a free and open connection to Mill Creek.
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: Courtney gravelly silty loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Northern 1/3 in Zone A & E

Adjacent Existing Land Uses (check those that apply) ☒Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☐Residential	☒Roads ☒Undeveloped ☐Forest ☐Other Comments-

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Salix lasiandra		*Phalaris arundinacea*	*Rumex crispus*
Crataegus douglasii		*Salix lasiandra*	*Festuca arundinacea*
Populus balsamifera		*Dipsacus sylvestris*	*Rubus ursinus*
Rubus discolor		*Symphoricarpos albus*	*Geum macrophyllum*
		Cytisus scoparius	
		Spiraea douglasii	
		Rubus laciniatus	
		Solanum dulcamara	
		Juncus effusus	
		Rosa nutkana	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

A: < 10% (B) 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

A: Yes (B) No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m (B) Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

A: Yes (B) No

Is large woody debris present in the riparian area?

A: Yes (B) No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 7-15-99 & 11-3-99	Riparian Code: PL-1R
Investigator(s): Jeanne Fromm	Approx. length (feet): 2,767
Riparian Area Location: This riparian area is the right bank of the Perrin Lateral Canal between the study area boundary and the confluence with Turner Bypass.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	B	1	12	C	1
2	B	2	7	B	1	10	B	2	13	B	2
3	B	2	8	B	1	11	B	1	14	B	1
4	B	2		Total	5		Total	4	15	B	1
5	A	2							16	C	1
	Total	11							17	A	3
									18	B	1
									19	C	1
										Total	11
High	12-14		High	8-9		High	7-8		High	19-23	
Med	8-11	X	Med	5-7	X	Med	5-6		Med	13-18	
Low	5-7		Low	3-4		Low	3-4	X	Low	8-12	X

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A) Less than 10%	B: Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

A: < 10%	(B) 10 - 25%	C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT

Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?

(A) Yes	B: No

Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*

Is woody vegetation greater than 1 meter high dominant in the flood prone area?

A: Yes	(B) No, or no flood prone area present

Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No	(B) Yes

Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*

THERMAL REGULATION

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

A: Yes	(B) No

Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

A: Yes	(B) No

Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	B: 2 layers	(C) 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

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Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

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Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

A: Yes	(B) No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40%	B: Between 10 and 40%	(C) <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

A: Yes	(B) No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	B: Between 25 and 75%	(C) >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 9-1-99 & 11-4-99	Riparian Mapping Code: PL-2R
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,672

Location:
Legal - Township 8S Range 2W Section 29
Other- This riparian area is the right bank of Turner Bypass between the outflow and inflow points with Mill Creek.

Dominant Tree Species: *Alnus rubra, Fraxinus latifolia,* and *Quercus garryana*

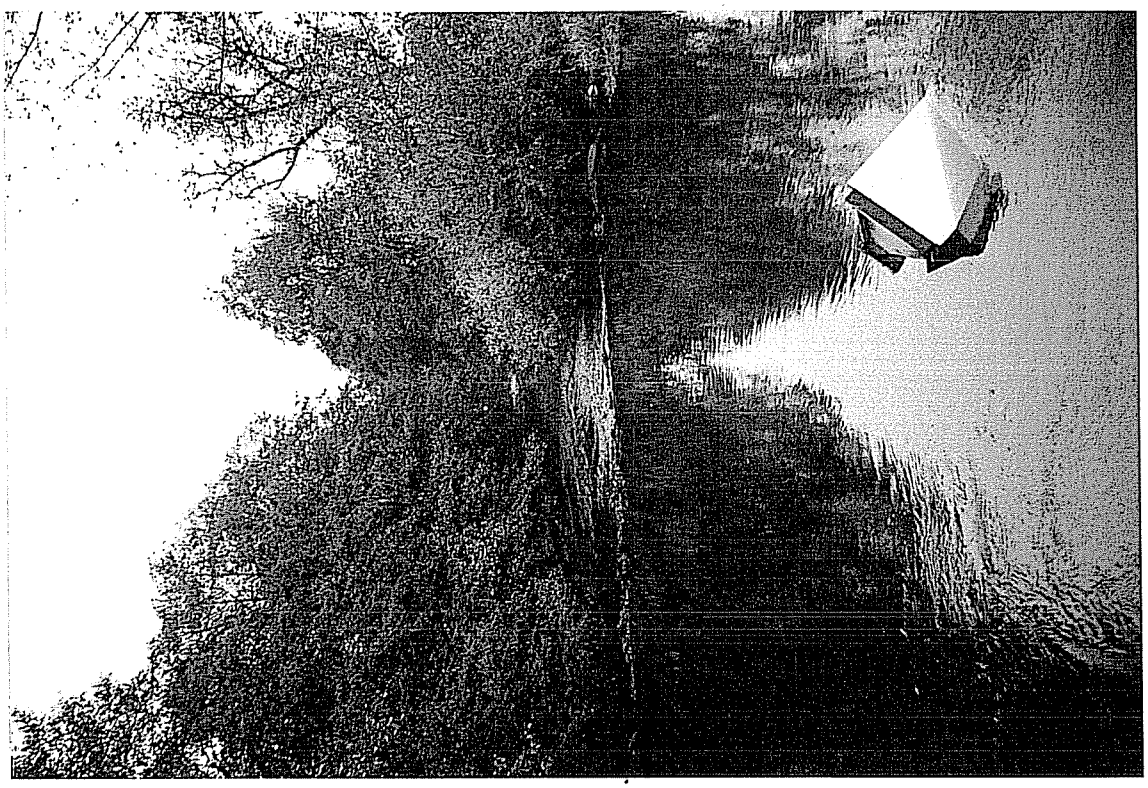
Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75'

PTH Determined by:
☒On-site vegetation ☐Reference Site (Code)

Comments

Turner Bypass appears to have been constructed in the lower portion of the Perrin Lateral Canal. In this location, the canal appeared to occupy a natural swale, which was an older location or secondary channel of Mill Creek. The Bypass was constructed to reduce flooding in Turner.

Photo show downstream view of PL-2R from confluence with Turner Bypass.



Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 9-1-99 & 11-4-99	Riparian Mapping Code: PL-2R
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,672
Verification Type: On-site	Hydrologic Basin: Perrin Lateral Subwatershed

Location:
Legal - Township 8S Range 2W Section 29
Other - This riparian area is the right bank of Turner Bypass between the outflow and inflow points with Mill Creek.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Channelized Stream	25-40
Lake/Pond	
Wetland R2	

LWI Wetland Code: PL-A

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?	X		
Is the water resource listed for temperature on DEQ's 303(d) list?		X	Listed for high bacteria levels.

OTHER INFORMATION

Soil—Mapped Series: Courtney gravelly silty clay loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Yes. Zone AE and floodway.

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☒Commercial/Industrial ☒Residential	☐Roads ☒Undeveloped ☐Forest ☐Other Comments-Designated for industrial & low-density residential uses.

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Alnus rubra		*Phalaris arundinacea*	*Juncus patens*
Salix lasiandra		*Juncus effusus*	*Symphoricarpos albus*
Fraxinus latifolia		*Leersia oryzoides*	
Rubus discolor		*Cytisus scoparius*	
Rosa nutkana		*Solanum dulcamara*	
Quercus garryana		*Agrostis stolonifera*	
Rubus laciniatus		*Rumex crispus*	
Populus balsamifera		*Dipsacus sylvestris*	
		Cirsium arvense	
		Ranunculus repens	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A:) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B:) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A:) Yes B: No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m (B:) Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

(A:) Yes B: No

Is large woody debris present in the riparian area?

(A:) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40% (B:) Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C:) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 9-1-99 & 11-4-99	Riparian Code: PL-2R
Investigator(s): Jeanne Fromm	Approx. length (feet): 2,672
Riparian Area Location: This riparian area is the right bank of Turner Bypass between the outflow and inflow points with Mill Creek.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	A	3	12	B	2
2	B	2	7	B	1	10	B	2	13	B	2
3	A	3	8	B	1	11	A	2	14	A	2
4	A	3		Total	5		Total	7	15	A	3
5	A	2							16	B	2
	Total	13							17	A	3
									18	A	3
									19	C	1
										Total	18
High	12-14	X	High	8-9		High	7-8	X	High	19-23	
Med	8-11		Med	5-7	X	Med	5-6		Med	13-18	X
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A) Less than 10% | B: Between 10-20% | C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high. | (B) Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A) Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10% | B: 10 - 25% | C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate | B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT

Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?

(A) Yes	B: No

Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*

Is woody vegetation greater than 1 meter high dominant in the flood prone area?

A: Yes	(B) No, or no flood prone area present

Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No	(B) Yes

Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*

THERMAL REGULATION

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A) Yes	B: No

Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A) Yes	B: No

Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	(B) 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

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Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40%	(B) Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A) Yes	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	B: Between 25 and 75%	(C) >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 11-4-99	Riparian Mapping Code: MCC-3.2R, MCN-1.1R
Investigator(s): Jeanne Fromm	Reach Length (feet): 858 + 664=1,522

Location:
Legal - Township 8S Range 2W Section 29
Other- This riparian area is located along the right bank of Mill Creek from 600' north of Delaney Bridge to north boundary of Turner City Park.

Dominant Tree Species: *Fraxinus latifolia, Alnus rubra*, and *Quercus garryana*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75/40'

PTH Determined by:
☒ On-site vegetation ☐ Reference Site (Code)

Comments

This riparian are is partly disturbed by low-density residential development and public park land uses. Understory is generally mowed and forest canopy is not closed. Residential use typically a home with a large yard or pasture. Adjacent to the park, Mill Creek splits into two channels. The channel is land that is forested and has a lush shrubbery understory. On the upstream end, Oregon white oak dominates; but red alder and Oregon ash dominate on the downstream end.

Photo shows MCN-1.1R near Turner City Park.

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 8-10-99 & 11-4-99	Riparian Mapping Code: MCC-3.2R, MCN-1.1R
Investigator(s): Jeanne Fromm	Reach Length (feet): 858 + 664=1,522
Verification Type: On-site & Off-site	Hydrologic Basin: Mill Creek No. & Central

Location:
Legal - Township 8S Range 2W Section 29
Other - This riparian area is located along the right bank of Mill Creek from 600' north of Delaney Bridge to north boundary of Turner City Park.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Mill Creek	75'
Lake/Pond	
Wetland R2	

LWI Wetland Code: MCC-A + MCN-A

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?	X		
Is the water resource listed for temperature on DEQ's 303(d) list?		X	On list for bacterial contamination.

OTHER INFORMATION

Soil—Mapped Series: Courtney silty gravelly clay loam, Clackamas gravelly loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Yes. Zone AE and floodway

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☒Residential	☐Roads ☐Undeveloped ☐Forest ☒Other-Park Comments-

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Fraxinus latifolia	*Sambucus racemosa*	*Phalaris arundinacea*	*Symphoricarpos albus*
Alnus rubra		*Ranunculus repens*	*Rubus ursinus*
Rubus discolor		*Geum macrophyllum*	*Carex obnupta*
Spiraea douglasii		*Juncus effusus*	*Stachys cooleyae*
Quercus garryana		*Agrostis stolonifera*	
Physocarpus capitatus		*Dactylis glomerata*	
Pseudotsuga menziesii		*Rhus diversiloba*	
Rosa prisocarpa		*Daucus carota*	
Cornus stolonifera		*Heracleum lanatum*	
Acer circinatum		*Rubus discolor*	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B) Yes Levee built in park area

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

A: Yes (B) No

What is the dominant vegetation layer in the riparian area?

(A) Woody vegetation > 1 m B: Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

(A) Yes But not throughout reach B: No

Is large woody debris present in the riparian area?

(A) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-4-99	Riparian Code: MCC-3.2R, MCN-1.1R
Investigator(s): Jeanne Fromm	Approx. length (feet): 858 + 664=1,522
Riparian Area Location: This riparian area is located along the right bank of Mill Creek from 600' north of Delaney Bridge to north boundary of Turner City Park.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	B	1	12	A	3
2	A	3	7	A	3	10	A	3	13	A	3
3	B	2	8	B	1	11	A	2	14	A	2
4	A	3		Total	7		Total	6	15	A	3
5	A	2							16	A	3
	Total	13							17	A	3
									18	A	3
									19	C	1
										Total	21
High	12-14	X	High	8-9		High	7-8		High	19-23	X
Med	8-11		Med	5-7	X	Med	5-6	X	Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A) Less than 10% | B: Between 10-20% | C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

(A) Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

A: Woody vegetation > 1 m high. | (B) Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10% | B: 10 - 25% | C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate | B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT	
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?	
(A:) Yes	B: No
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*	
Is woody vegetation greater than 1 meter high dominant in the flood prone area?	
(A:) Yes	B: No, or no flood prone area present
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*	
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)	
A: No	(B:) Yes
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*	

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
A: Yes	(B:) No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A:) Yes	B: No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT		
How many vegetation layers (canopy, mid-story, ground cover) are present?		
(A:) More than 2 layers	B: 2 layers	C: 1 layer or unvegetated
Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*		
What is the dominant vegetation cover in the riparian area?		
(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A:) Yes	B: No	
Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*		
Is large woody debris present in the riparian area?		
(A:) Yes	B: No	
Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*		
What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?		
(A:) >40%	B: Between 10 and 40%	C: <10%
Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*		
Is surface water present throughout the year?		
(A:) Yes	B: No	
Rationale: *A perennial water source is valuable t wildlife during the summer months.*		
Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?		
(A:) Yes	B: No	
Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*		
What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?		
A: <25%	B: Between 25 and 75%	(C:) >75%
Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*		

Riparian Width Determination

Date(s) of work: 9-16-99 & 11-3-99	Riparian Mapping Code: MCS-1R
Investigator(s): Jeanne Fromm	Reach Length (feet): 3,647

Location:
Legal - Township 8S Range 2W Section 33, some 28
Other- Right bank of Mill Creek from the Marion Road Bridge to the confluence with Turner Bypass

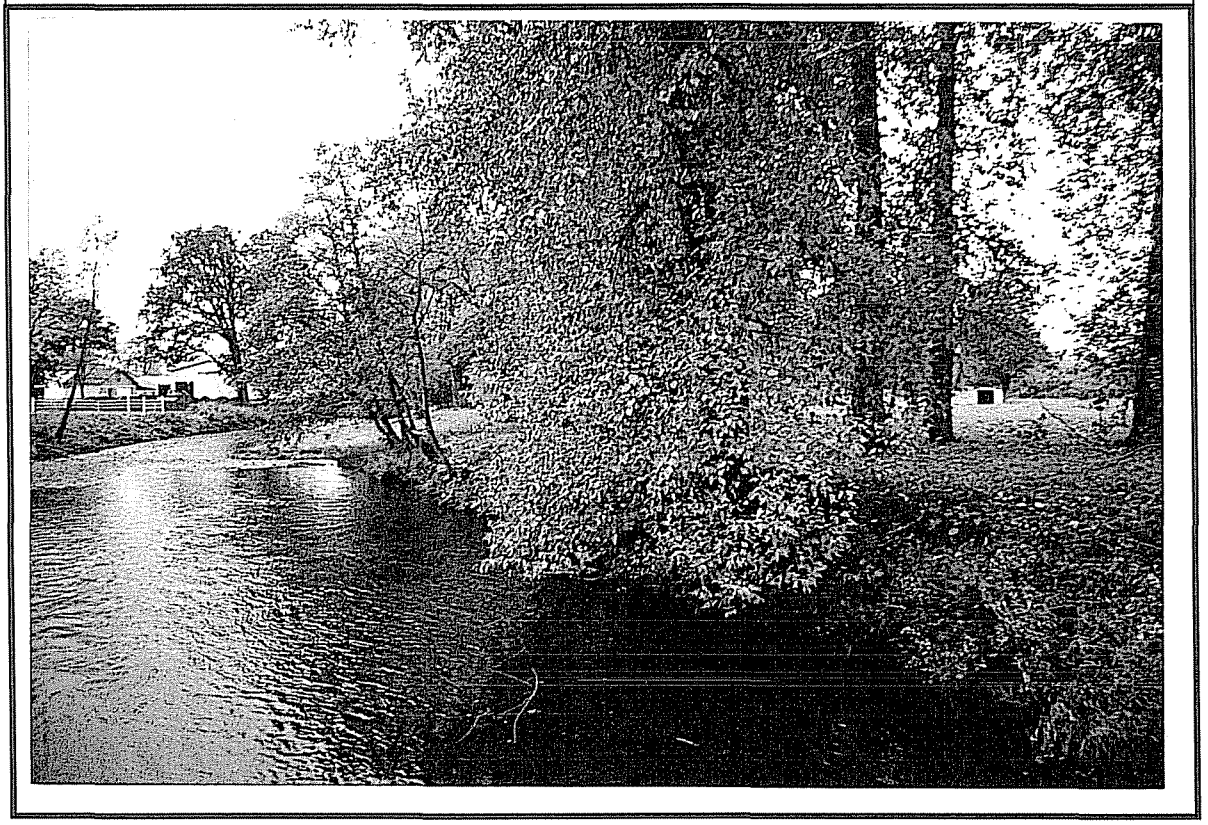
Dominant Tree Species: *Fraxinus latifolia & Populus balsamifera*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 75-120/20'

PTH Determined by:
☒On-site vegetation ☐Reference Site (Code)

Comments

This reach of Mill Creek is bordered by agriculture, semi-public (church convention grounds), and low-density residential land uses. A strip of trees ranging from 0-200' is located on the right bank.



Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-3-99	Riparian Mapping Code: MCS-1R
Investigator(s): Jeanne Fromm	Reach Length (feet): 3,647
Verification Type: On-site & Off-site	Hydrologic Basin: Mill Creek South

Location: Riparian area is right bank
Legal - Township 8S Range 2W Section 33 and some 28
Other - Riparian area is the right bank of Mill creek between Marion Road Bridge and the confluence with Turner Bypass.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Mill Creek	N 80'
Lake/Pond	
Wetland R2	

LWI Wetland Code: MCS-A

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?	X		
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: Courtney gravelly silty clay loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Yes

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☒Residential	☐Roads ☒Undeveloped ☐Forest ☒Other-Pasture Comments-Designated for high-density residential and public land uses

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Populus balsamifera		*Hedera helix*	
Fraxinus latifolia		*Symphoricarpos albus*	
Crataegus douglasii		*Phalaris arundinacea*	
Alnus rubra		*Cornus stolonifera*	
Prunus emarginata			
Rubus discolor			

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A:) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B:) Yes Noted downstream of bridge in places to control bank erosion.

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A:) Yes But the left bank is outside Turner UGNA. B: No
Agricultural land uses occur close to upper bank. Little vegetation to offer shade.

What is the dominant vegetation layer in the riparian area?

(A) Woody vegetation > 1 m B: Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

(A) Yes B: No

Is large woody debris present in the riparian area?

(A:) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% (B:) Between 25 and 75% C: >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-3-99	Riparian Code: MCS-1R
Investigator(s): Jeanne Fromm	Approx. length (feet): 3,647
Riparian Area Location: Right bank of Mill Creek from Marion Road Bridge to confluence with Turner Bypass.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	A	3	12	B	2
2	B	2	7	B	1	10	B	2	13	B	2
3	A	3	8	A	3	11	A	2	14	A	2
4	A	3		Total	7		Total	7	15	A	3
5	A	2							16	A	3
	Total	13							17	A	3
									18	A	3
									19	B	3
										Total	21
High	12-14	X	High	8-9		High	7-8	X	High	19-23	X
Med	8-11		Med	5-7	X	Med	5-6		Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A:) Less than 10% ☒	B: Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10%	B: 10 - 25%	C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A:) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT

Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?

(A:) Yes	B: No

Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*

Is woody vegetation greater than 1 meter high dominant in the flood prone area?

A: Yes	(B:) No, or no flood prone area present

Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

(A:) No	B: Yes

Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*

THERMAL REGULATION

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A:) Yes	B: No

Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A:) Yes	B: No

Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*

No canopy closure over creek.

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	(B:) 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A:) Yes	B: No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A:) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A:) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A:) Yes	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	B: Between 25 and 75%	(C:) >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 11-4-99	Riparian Mapping Code: MCS-1L, MCC-1L
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,518 + 3,251=5,769

Location:
Legal - Township 8S Range 2W Section 29
Other- This riparian area is the left bank of Mill Creek from between the outflow and inflow points of Turner Bypass.

Dominant Tree Species: *Fraxinus latifolia* and *Quercus garryana*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75/20'

PTH Determined by:
☐ On-site vegetation ☒ Reference Site (Code MCS-2.1R)

Comments

This area is located in downtown Turner where a variety of land uses occur. Three bridges cross this reach and rip rap protects all the abutments. This is the oldest part of Turner, and fill is common. The creek flows northeast and then bends sharply to the northwest. Creek banks are steepest and deepest in this part of town and probably related to previous fill.

Photo show MCS-1L (left side of picture).

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-4-99	Riparian Mapping Code: MCS-1L, MCC-1L
Investigator(s): Jeanne Fromm	Reach Length (feet): 2.518 + 3,251=5,769
Verification Type: On-site & Off-site	Hydrologic Basin: Mill Cr. So. Mill Cr. Central

Location:
Legal - Township 8S Range 2W Section 29
Other - This riparian area is the left bank of Mill Creek from between the outflow and inflow ends of Turner Bypass.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Stream Mill Creek	
Lake/Pond	
Wetland R2	

LWI Wetland Code: MCS-A & MCC-A

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?	X		
Is the water resource listed for temperature on DEQ's 303(d) list?		X	Listed for high bacteria levels.

OTHER INFORMATION

Soil—Mapped Series: Courtney gravelly silty clay loam. Clackamas gravelly loam.
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Yes. Zone AE and a floodway

Adjacent Existing Land Uses (check those that apply) ❑Agriculture ❑Confined Animal Feeding Operation ☒Commercial/Industrial ☒Residential	☒Roads ❑Undeveloped ❑Forest ☒Other-Public school Comments-

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Acer macrophyllum	*Physocarpus capitatus*	*Phalaris arundinacea*	Carex obnupta
Fraxinus latifolia	*Rosa nutkana*	*Hedera helix*	
Cornus stolonifera	*Rosa pisocarpa*	*Rubus ursinus*	
Rubus discolor	*Crataegus douglasii*	*Dipsacus sylvestris*	
Quercus garryana	*Alnus rubra*	*Daucus carota*	
Cytisus scoparius	*Rhamnus purshiana*	*Festuca arundinacea*	
Alnus rubra		*Agrostis stolonifera*	
Salix lasiandra		*Solanum dulcamara*	
Spiraea douglasii		*Juncus effusus*	
Prunus emarginata		*Symphoricarpos albus*	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

A: < 10% B: 10 - 25% (C) >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A) Yes B: No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m (B) Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

(A) Yes B: No

Is large woody debris present in the riparian area?

(A) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40% (B) Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-4-99	Riparian Code: MCS-1L, MCC-1L
Investigator(s): Jeanne Fromm	Approx. length (feet):2,518 + 3,251=5,789
Riparian Area Location: This riparian area is the left bank of Mill Creek from between the outflow and inflow ends of Turner Bypass.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	B	2	6	A	3	9	A	3	12	B	2
2	B	2	7	B	1	10	B	2	13	B	2
3	A	3	8	B	1	11	A	2	14	A	2
4	C	1		Total	5		Total	7	15	A	3
5	A	2							16	B	2
	Total	10							17	A	3
									18	A	3
									19	C	1
										Total	18
High	12-14		High	8-9		High	7-8	X	High	19-23	
Med	8-11	X	Med	5-7	X	Med	5-6		Med	13-18	X
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

A: Less than 10%	(B) Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

A: < 10%	B: 10 - 25%	(C) >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
A: Yes	(B) No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A) Yes	B: No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT		
How many vegetation layers (canopy, mid-story, ground cover) are present?		
A: More than 2 layers	(B:) 2 layers	C: 1 layer or unvegetated
Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*		
What is the dominant vegetation cover in the riparian area?		
A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A:) Yes	B: No	
Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*		
Is large woody debris present in the riparian area?		
(A:) Yes	B: No	
Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*		
What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?		
A: >40%	(B:) Between 10 and 40%	C: <10%
Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*		
Is surface water present throughout the year?		
(A:) Yes	B: No	
Rationale: *A perennial water source is valuable t wildlife during the summer months.*		
Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?		
(A:) Yes Narrow wetlands	B: No	
Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*		
What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?		
A: <25%	B: Between 25 and 75%	(C:) >75%
Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*		

Riparian Width Determination

Date(s) of work: 9-16-99 & 11-5-99	Riparian Mapping Code: MCS-2.1R
Investigator(s): Jeanne Fromm	Reach Length (feet): 1,417

Location:
Legal - Township 8S Range 2W Section 28 & 29
Other- Right bank of riparian area along Mill Creek between the confluence with Turner Bypass and the Marion Road Bridge.

Dominant Tree Species: *Fraxinus latifolia* and *Quercus garryana*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75/100'

PTH Determined by:
☒ On-site vegetation ☐ Reference Site (Code)

Comments

This riparian area is a mostly forested strip along the creek on church property. Most of the grounds are park like, and the understory is mowed. Mature trees along the creek have been left. A levee and walking path occur in south end.

Photo shows view upstream of MCS-2.1R and MCS-1L at Marion Rd. Bridge near Turner School.

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 9-16-99 & 11-5-99	Riparian Mapping Code: MCS-2.1R
Investigator(s): Jeanne Fromm	Reach Length (feet): 1,417
Verification Type: On-site & Off-site	Hydrologic Basin: Mill Creek South

Location:
Legal - Township 8S Range 2W Section 28 & 29
Other - Right bank of riparian area along Mill Creek between the confluence with Turner Bypass and the Marion Road Bridge.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Mill Creek	35-50
Lake/Pond	
Wetland R2	

LWI Wetland Code: MCS-A

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?	X		
Is the water resource listed for temperature on DEQ's 303(d) list?		X	Listed for high bacteria levels.

OTHER INFORMATION

Soil—Mapped Series: Courtney silty gravelly clay loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Yes. Zone AE & floodplain

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☐Residential	☐Roads ☐Undeveloped ☐Forest ☒Other Semi-public Comments-Church Conference grounds

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Fraxinus latifolia	*Rosa nutkana*	*Symphoricarpos albus*	
Populus balsamifera		*Cynosurus echinatus*	
Alnus rubra		*Osmorhiza chilensis*	
Quercus garryana		*Phalaris arundinacea*	
Physocarpus capitatus			
Rubus discolor			
Oemleria cerasiformis			
Amelanchier alnifolia			
Crataegus douglasii			
Salix lasiandra			

MCS-2.1R

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A:) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B:) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A:) Yes B: No

What is the dominant vegetation layer in the riparian area?

(A:) Woody vegetation > 1 m B: Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

(A:) Yes B: No

Is large woody debris present in the riparian area?

(A:) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% (B:) Between 25 and 75% C: >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-5-99	Riparian Code: MCS-2.1R
Investigator(s): Jeanne Fromm	Approx. length (feet): 1,417
Riparian Area Location: Right bank of riparian area along Mill Creek between the confluence with Turner Bypass and Marion Road Bridge.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	A	3	12	A	3
2	A	3	7	A	3	10	B	3	13	A	3
3	A	3	8	B	1	11	A	2	14	A	2
4	A	3		Total	7		Total	8	15	A	3
5	A	2							16	A	3
	Total	14							17	A	3
									18	A	3
									19	B	2
										Total	22
High	12-14	X	High	8-9		High	7-8	X	High	19-23	X
Med	8-11		Med	5-7	X	Med	5-6		Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A:) Less than 10% | B: Between 10-20% | C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

(A) Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A:) Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A:) < 10% | B: 10 - 25% | C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A:) Low, slight, moderate | B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A:) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
(A:) Yes	B: No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B:) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A:) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A:) Yes	B: No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

(A:) More than 2 layers	B: 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A:) Yes	B: No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A:) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A:) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A:) Yes	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	(B:) Between 25 and 75%	C: >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 9-16-99 & 11-5-99	Riparian Mapping Code: MCS-2.2R
Investigator(s): Jeanne Fromm	Reach Length (feet): 477

Location:
Legal - Township 8S Range 2W Section 28
Other- Riparian area is the right bank of Mill Creek between the Marion Road Bridge and where the forested riparian area begins.

Dominant Tree Species: *Fraxinus latifolia* and *Quercus garryana*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 65-75/20'

PTH Determined by:
☐ On-site vegetation ☒ Reference Site (Code MCS-2.1R)

Comments

This riparian area is a remnant strip of trees on church conference facilities. The strip is adjacent to mowed lawns, recreational fields, and private roads on the grounds. Some riprap in channel to stabilize bank erosion. This reach near the bridge has nearly complete canopy closure (*Alnus rubra*) over the creek.

Looking downstream along Mill Creek at MCS-2.2R and UCS-1L at Marion Rd. Bridge near Turner School.

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 9-16-99 & 11-5-99	Riparian Mapping Code: MCS-2.2R
Investigator(s): Jeanne Fromm	Reach Length (feet): 477
Verification Type: On-site	Hydrologic Basin: Mill Creek South

Location:
Legal - Township 8S Range 2W Section 29
Other - Riparian area is the right bank of Mill Creek between the Marion Road Bridge on forested footslope.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Mill Creek	35-50
Lake/Pond	
Wetland R2	

LWI Wetland Code: MCS-A

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?	X		
Is the water resource listed for temperature on DEQ's 303(d) list?		X	Listed for high bacteria levels.

OTHER INFORMATION

Soil—Mapped Series: Courtney gravelly silty clay loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Yes. Zone AE and floodway

Adjacent Existing Land Uses (check those that apply) ☐Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☐Residential	☒Roads (single lane, gravel) ☒Undeveloped ☐Forest ☒Other- Semi-public church facilities Comments-

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Alnus rubra		*Bidens frondosa*	
Salix lasiandra		*Phalaris arundinacea*	
Physocarpus capitatus		*Ranunculus repens*	
Acer macrophyllum		*Polygonum hydropiperoides*	
Rubus discolor		*Carex obnupta*	
Cornus stolonifera		*Geum macrophyllum*	
		Dactylis glomerata	
		Festuca arundinacea	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A:) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B:) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A:) Yes B: No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m (B:) Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

(A:) Yes B: No

Is large woody debris present in the riparian area?

(A:) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40% B: Between 10 and 40% (C:) <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

(A:) <25% B: Between 25 and 75% C: >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 9-16-99 & 11-5-99	Riparian Code: MCS-2.2R
Investigator(s): Jeanne Fromm	Approx. length (feet): 477
Riparian Area Location: Riparian area is the right bank of Mill Creek between the Marion Rd. Bridge on forested footslope.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	A	3	12	B	2
2	B	2	7	B	1	10	B	2	13	B	2
3	A	3	8	B	1	11	A	2	14	A	2
4	A	3		Total	5		Total	7	15	A	3
5	A	2							16	C	1
	Total	13							17	A	3
									18	B	1
									19	C	1
										Total	15
High	12-14	X	High	8-9		High	7-8	X	High	19-23	
Med	8-11		Med	5-7	X	Med	5-6		Med	13-18	X
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A) Less than 10%	B: Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10%	B: 10 - 25%	C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT

Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?

(A) Yes	B: No

Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*

Is woody vegetation greater than 1 meter high dominant in the flood prone area?

A: Yes	(B) No, or no flood prone area present

Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No	(B) Yes

Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*

THERMAL REGULATION

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A) Yes	B: No

Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A) Yes	B: No

Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	(B) 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A) Yes	B: No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40%	B: Between 10 and 40%	(C) <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

A: Yes	(B) No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	B: Between 25 and 75%	(C) >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 9-15-99 & 11-5-99	Riparian Mapping Code: MCS-2.2A R & L
Investigator(s): Jeanne Fromm	Reach Length (feet): 438

Location:
Legal - Township 8S Range 2W Section 28
Other- This riparian area is the left and right banks of a small perennial stream located in an old overflow channel of Mill Creek.

Dominant Tree Species: *Fraxinus latifolia* and *Alnus rubra*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 65-75/25'

PTH Determined by:
☒ On-site vegetation ☐ Reference Site (Code)

Comments

This small perennial stream flows across the Mill Creek flood plain at the base of the footslopes. It appears to be located in a secondary or old channel of Mill Creek. Soil texture is silty clay loam. Channel has been filled on the east and west ends. Spring fed. Most of the grounds are landscaped, but a grove of trees, wetland, and standing water are located on the west end of the convention grounds. Church has a water garden upslope and this riparian area has high potential as a restoration site that could be integrated into the overall church facilities.

Typical Cross Section

Riparian Width Determination

Date(s) of work: 9-1-99 & 11-4-99	Riparian Mapping Code: PL-2L
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,679

Location:
Legal - Township 8S Range 2W Section 29
Other- This riparian area is the left bank of Turner Bypass between the confluence with Mill Creek and Wipper Rd. Bridge.

Dominant Tree Species: *Alnus rubra, Fraxinus latifolia,* and *Quercus garryana*

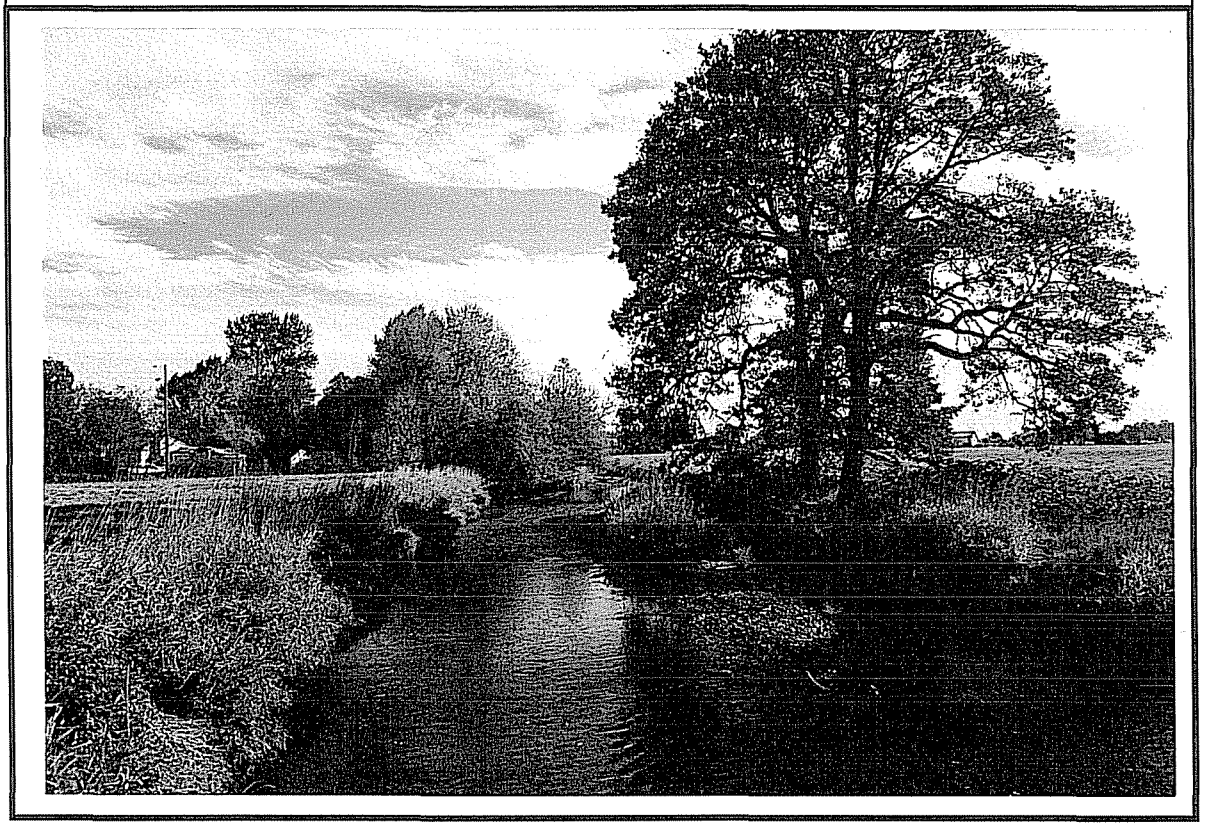
Potential Tree Height (PTH)/Width of Riparian Area (feet): 60-75'

PTH Determined by:
☒On-site vegetation ☐Reference Site (Code)

Comments

Turner Bypass appears to have been constructed in the lower portion of the Perrin Lateral Canal. In this location, the canal appeared to occupy a natural swale, which was an older location or a secondary of Mill Creek. Bypass was constructed to reduce flooding in Turner.

Photo shows PL-2L and PL-2R where Wipper Rd. crosses Turner Bypass. Picture is looking upstream.



Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 9-1-99 & 11-4-99	Riparian Mapping Code: PL-2L
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,679
Verification Type: On-site	Hydrologic Basin: Perrin Lateral

Location:
Legal - Township 8S Range 2W Section 29
Other - This riparian area is the left bank of Turner Bypass between confluence with Mill Creek and Wipper Rd. Bridge.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Channelized stream	25-40
Lake/Pond	
Wetland R2	

LWI Wetland Code: PL-A

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?	X		
Is the water resource listed for temperature on DEQ's 303(d) list?		X	Listed for high bacteria.

OTHER INFORMATION

Soil—Mapped Series: Courtney gravelly silty clay loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Yes. Zone AE & floodway.

Adjacent Existing Land Uses (check those that apply) ☒Agriculture ☐Confined Animal Feeding Operation ☒Commercial/Industrial ☒Residential	☐Roads ☒Undeveloped ☐Forest ☐Other Comments-Designated for industrial & low-density residential uses.

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Alnus rubra		*Phalaris arundinacea*	*Juncus patens*
Salix lasiandra		*Juncus effusus*	*Symphoricarpos albus*
Fraxinus latifolia		*Leersia oryzoides*	
Rubus discolor		*Cytisus scoparius*	
Rosa nutkana		*Solanum dulcamara*	
Quercus garryana		*Agrostis stolonifera*	
Rubus laciniatus		*Rumex crispus*	
Populus balsamifera		*Dipsacus sylvestris*	
		Cirsium arvense	
		Ranunculus repens	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

(A) Yes B: No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m (B) Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

(A) Yes B: No

Is large woody debris present in the riparian area?

(A) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 9-1-99 &11-4-99	Riparian Code: PL-2L
Investigator(s): Jeanne Fromm	Approx. length (feet): 2,679
Riparian Area Location: This riparian area is the left bank of Turner Bypass between confluence with Mill Creek and Wipper Rd. Bridge.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	A	3	12	A	3
2	B	2	7	B	1	10	B	2	13	B	2
3	A	3	8	B	1	11	A	2	14	A	2
4	A	3		Total	5		Total	7	15	A	3
5	A	2							16	A	2
	Total	13							17	A	3
									18	A	3
									19	B	2
										Total	21
High	12-14	X	High	8-9		High	7-8	X	High	19-23	X
Med	8-11		Med	5-7	X	Med	5-6		Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A) Less than 10% | B: Between 10-20% | C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high. | (B) Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A) Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10% | B: 10 - 25% | C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate | B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
A: Yes	(B) No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
(A) Yes	B: No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A) Yes	B: No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

(A) More than 2 layers	B: 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A) Yes	B: No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A) Yes	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	(B) Between 25 and 75%	C: >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 8-12-99 & 11-7-99	Riparian Mapping Code: PL-2A R & L
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,604

Location:
Legal - Township 8S Range 2W Section 32
Other- This riparian area is the left and right banks along the old Perrin Lateral Canal.

Dominant Tree Species: *Fraxinus latifolia* and *Populus balsamifera*

Potential Tree Height (PTH)/Width of Riparian Area (feet): 75-120'

PTH Determined by:
☒On-site vegetation ☐Reference Site (Code)

Comments

Topography suggests that the old Perrin Lateral Canal was located in a natural swale. This canal appears to be disconnected from the irrigation water distribution system but does serve local drainage functions. The forested riparian area is widest at the southern end of this feature. The left and right banks are surrounded by a forest and similar enough to be described and evaluated as one unit.

Typical Cross Section

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 8-12-99 & 11-7-99	Riparian Mapping Code: PL-2A R & L
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,604
Verification Type: Field	Hydrologic Basin: Perrin Lateral

Location:
Legal - Township 8S Range 2W Section 32
Other - This riparian area is the left and right banks along the old Perrin Lateral Canal.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Channelized stream	4
Lake/Pond	
Wetland R-4	

LWI Wetland Code: PL-F

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?		X	
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: Courtney gravelly silty clay loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Northern 1/3 in Zone AE

Adjacent Existing Land Uses (check those that apply) ☒Agriculture ☐Confined Animal Feeding Operation ☒Commercial/Industrial ☐Residential	☐Roads ☒Undeveloped ☐Forest ☐Other Comments-Designated industrial

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Fraxinus latifolia		*Juncus patens*	
Populus balsamifera		*Juncus effusus*	
Salix lasiandra		*Carex deweyana*	
Crataegus douglasii		*Carex obnupta*	
Rosa nutkana		*Polystichum munitum*	
Rhamnus purshiana		*Camassia leichtlinii*	
Rubus laciniatus		*Holcus lanatus*	
Spiraea douglasii		*Phleum pratense*	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A:) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B:) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

A: Yes (B:) No

What is the dominant vegetation layer in the riparian area?

(A:) Woody vegetation > 1 m B: Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

(A:) Yes B: No

Is large woody debris present in the riparian area?

(A:) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% (B:) Between 25 and 75% C: >75%

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

(A:) More than 2 layers	B: 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

(A:) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

(A:) Yes	B: No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A:) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A:) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A:) Yes	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	(B:) Between 25 and 75%	C: >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 11-20-99	Riparian Mapping Code: PL-2B L
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,980

Location:
Legal - Township 8S Range 2W Section 32
Other- This riparian area is located along the left bank of a ditch running along the east side of railroad from south study area boundary to Turner Bypass.

Dominant Tree Species: *Populus balsamifera* and *Fraxinus latifolia*

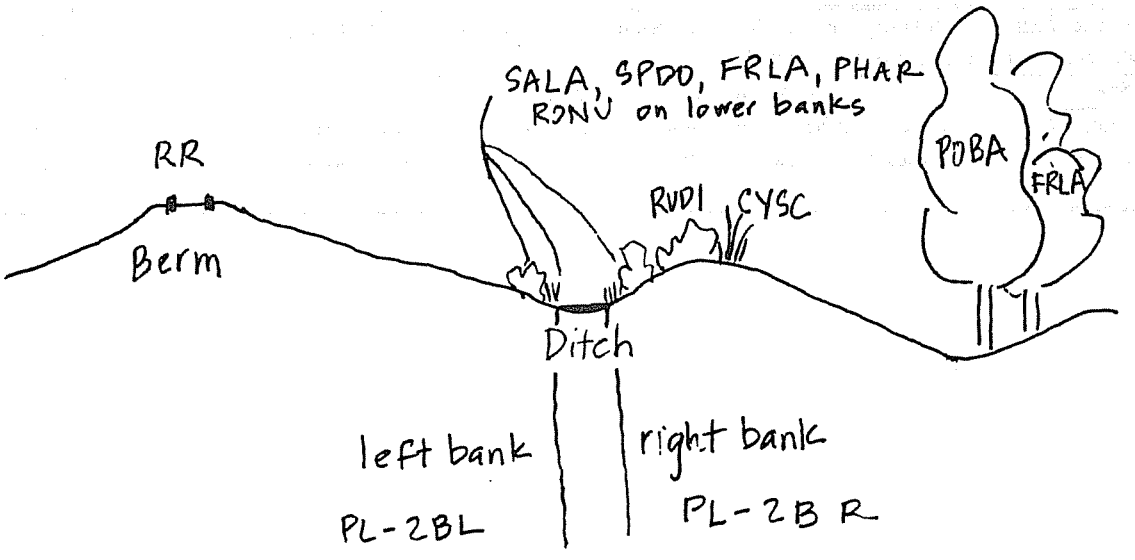
Potential Tree Height (PTH)/Width of Riparian Area (feet): 75-120

PTH Determined by:
☒ On-site vegetation ☐ Reference Site (Code)

Comments

This ditch was built on the crest of the low ridge lying between drainage swales. Soils are Clackamas and Sifton gravelly loam.

Typical Cross Section



Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 8-12-99 & 11-7-99	Riparian Code: PL-2A R & L
Investigator(s): Jeanne Fromm	Approx. length (feet): 2,604
Riparian Area Location: This riparian area is the left and right banks along the old Perrin Lateral Canal.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	B	1	12	A	3
2	A	3	7	A	3	10	A	3	13	A	3
3	A	3	8	B	1	11	A	2	14	A	2
4	A	3		Total	7		Total	6	15	A	3
5	A	2							16	A	3
	Total	14							17	A	3
									18	A	3
									19	B	2
										Total	22
High	12-14	X	High	8-9		High	7-8	X	High	19-23	X
Med	8-11		Med	5-7	X	Med	5-6		Med	13-18	
Low	5-7		Low	3-4		Low	3-4		Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A) Less than 10%	B: Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A) < 10%	B: 10 - 25%	C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
(A) Yes	B: No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
A: Yes	(B) No*	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
(A) Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
(A) Yes	B: No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

*Thermal regulation was marked high in assessment results even though the orientation of the surface water feature is north-south. This is a narrow ditch, and the multi-layered forest growing on each side of the bank easily shades the water at mid-day.

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-20-99	Riparian Mapping Code: PL-2B L
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,890
Verification Type: On-site	Hydrologic Basin: Perrin Lateral

Location:
Legal - Township 8S Range 2W Section 32
Other - This riparian area is located along the left bank of a ditch running along the east side of railroad from south study area boundary to Turner Bypass.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Channelized drainage	
Lake/Pond	
Wetland R3	

LWI Wetland Code: PL-E

	YES	NO	Comments
Water present year round?	X		
Are salmonids present in adjacent water resource?		X	Unknown
Is the water resource listed for temperature on DEQ's 303(d) list?		X	Unknown

OTHER INFORMATION

Soil—Mapped Series: Clackamas and Sifton gravelly loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? No.

Adjacent Existing Land Uses (check those that apply) ☒Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☐Residential	☐Roads ☒Undeveloped ☐Forest ☒Other Railroad Comments-Designated industrial

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Rubus discolor		*Festuca arundinacea*	
Rosa nutkana		*Dactylis glomerata*	
		Cirsium arvense	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?
(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?
A: < 10% (B:) 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)
A: No (B:) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?
A: Yes (B:) No

What is the dominant vegetation layer in the riparian area?
A: Woody vegetation > 1 m B: Herbaceous or woody vegetation < 1 m high. (C:) Bare ground high.

Does woody vegetation hang over the edge of the water?
A: Yes (B:) No

Is large woody debris present in the riparian area?
A: Yes (B:) No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?
A: >40% (B:) Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?
A: <25% B: Between 25 and 75% (C:) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-20-99	Riparian Code: PL-2B L
Investigator(s): Jeanne Fromm	Approx. length (feet): 2,890
Riparian Area Location: This riparian area is located along the left bank of a ditch running along the east side or railroad from south study area boundary to Turner Bypass.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	B	1	9	B	1	12	C	1
2	C	1	7	B	1	10	C	1	13	C	1
3	B	2	8	B	1	11	B	1	14	B	1
4	B	2		Total	3		Total	3	15	B	1
5	A	2							16	C	1
	Total	10							17	A	3
									18	A	3
									19	C	1
										Total	12
High	12-14		High	8-9		High	7-8		High	19-23	
Med	8-11	X	Med	5-7		Med	5-6		Med	13-18	
Low	5-7		Low	3-4	X	Low	3-4	X	Low	8-12	X

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A:) Less than 10% | B: Between 10-20% | C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | (C) Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

A: Woody vegetation > 1 m high. | (B:) Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

A: < 10% | (B:) 10 - 25% | C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A:) Low, slight, moderate | B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
A: Yes	(B:) No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
A: Yes	(B:) No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B:) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
A: Yes	(B:) No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
A: Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	(C:) Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
A: Yes	(B:) No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	B: 2 layers	(C:) 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	(C:) Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

A: Yes	(B:) No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

A: Yes	(B:) No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40%	B: Between 10 and 40%	(C:) <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A:) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A:) Yes	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	B: Between 25 and 75%	(C:) >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 11-20-99	Riparian Mapping Code: PL-2B R
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,907

Location:
Legal - Township 8S Range 2W Section 32
Other- This riparian area is located along the right bank of a ditch running along the east side of railroad from south study area boundary and Turner Bypass.

Dominant Tree Species: *Populus balsamifera* and *Fraxinus latifolia*

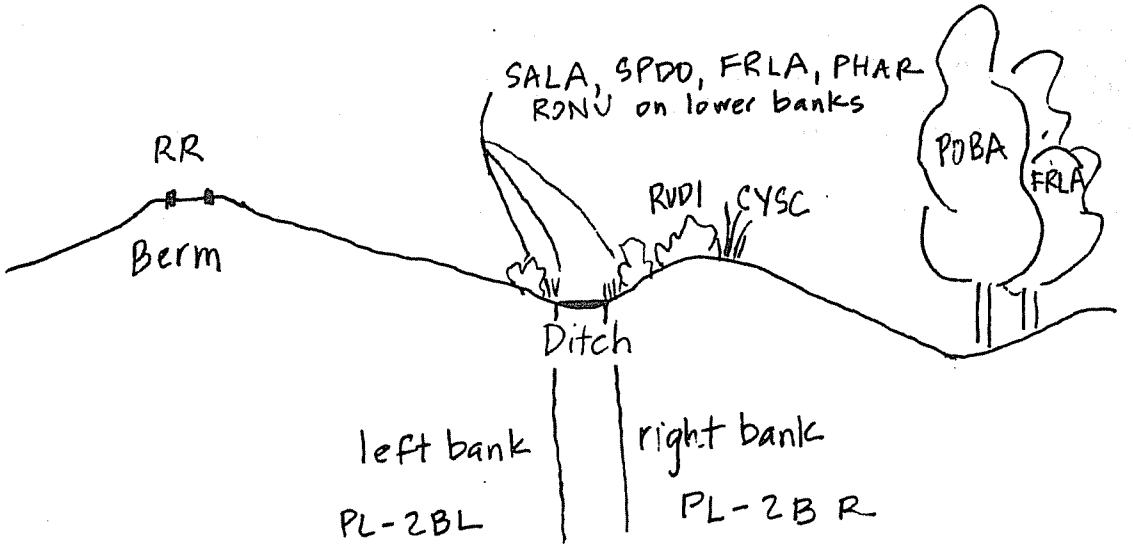
Potential Tree Height (PTH)/Width of Riparian Area (feet): 75-120'

PTH Determined by:
☒ On-site vegetation ☐ Reference Site (Code)

Comments

This ditch was built on the crest of the low ridge lying between drainage swales. Soils are Clackamas and Sifton gravelly loam.

Typical Cross Section



Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-20-99	Riparian Mapping Code: PL-2B R
Investigator(s): Jeanne Fromm	Reach Length (feet): 2,907
Verification Type: On-site	Hydrologic Basin: Perrin Lateral

Location:
Legal - Township 8S Range 2W Section 28 & 29
Other - This riparian area is located along the right bank of a ditch running along the east side of railroad from south study area boundary and Turner Bypass.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Channelized drainage	8
Lake/Pond	
Wetland R4	

LWI Wetland Code: PL-E

	YES	NO	Comments
Water present year round?		X	
Are salmonids present in adjacent water resource?		X	Unknown
Is the water resource listed for temperature on DEQ's 303(d) list?		X	Unknown.

OTHER INFORMATION

Soil—Mapped Series: Clackamas and Sifton gravelly loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? No.

Adjacent Existing Land Uses (check those that apply) ☒Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☐Residential	☐Roads ☒Undeveloped ☐Forest ☐Other Semi-public Comments-Designated industrial

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Rubus discolor		*Cytisus scoparius*	
Populus balsamifera		*Phalaris arundinacea*	
Fraxinus latifolia			
Rosa nutkana			
Salix lasiandra			
Spirea douglasii			

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A:) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B:) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

A: Yes (B:) No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m (B:) Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

A: Yes (B:) No

Is large woody debris present in the riparian area?

(A:) Yes B: No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40% B: Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% (B:) Between 25 and 75% C: >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-20-99	Riparian Code: PL 2B R
Investigator(s): Jeanne Fromm	Approx. length (feet): 2,907
Riparian Area Location: This riparian area is located along the right bank of a ditch running along the east side of railroad from south study area boundary and Turner Bypass.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	B	1	12	B	2
2	B	2	7	B	1	10	B	2	13	B	2
3	B	2	8	B	1	11	B	1	14	B	1
4	A	3		Total	5		Total	4	15	A	3
5	A	3							16	A	3
	Total	13							17	A	3
									18	A	3
									19	B	2
										Total	19
High	12-14	X	High	8-9		High	7-8		High	19-23	X
Med	8-11		Med	5-7	X	Med	5-6		Med	13-18	
Low	5-7		Low	3-4		Low	3-4	X	Low	8-12	

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A:) Less than 10%	B: Between 10-20%	C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A:) < 10%	B: 10 - 25%	C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A:) Low, slight, moderate	B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT

Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?

(A:) Yes	B: No

Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*

Is woody vegetation greater than 1 meter high dominant in the flood prone area?

A: Yes	(B:) No, or no flood prone area present

Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No	(B:) Yes

Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*

THERMAL REGULATION

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

A: Yes	(B:) No

Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

A: Yes	(B:) No

Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	(B:) 2 layers	C: 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

A: Yes	(B:) No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

(A:) Yes	B: No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

(A:) >40%	B: Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities.. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

(A:) Yes	B: No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

(A:) Yes	B: No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	(B:) Between 25 and 75%	C: >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 11-20-99	Riparian Mapping Code: PL-2C R
Investigator(s): Jeanne Fromm	Reach Length (feet): 3,527

Location:
Legal - Township 8S Range 2W Section 29 & 32
Other- Riparian area is located along the right bank of a roadside ditch, lying immediately east of Wipper Road, between southern study boundary and Turner Bypass.

Dominant Tree Species: None

Potential Tree Height (PTH)/Width of Riparian Area (feet): 75-120'

PTH Determined by:
☐ On-site vegetation ☒ Reference Site (Code PL-2A R & L)

Comments

This ditch appears to have been located in a natural topographic low. The alluvial fan/terrace surface has a natural northwest and north trending set of swales. The grass seed field comes right up to the edge of the ditch. Some slumping in the vertical banks of the ditch observed.

Typical Cross Section

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-20-99	Riparian Mapping Code: PL-2C R
Investigator(s): Jeanne Fromm	Reach Length (feet): 3,527
Verification Type: On-site	Hydrologic Basin: Perrin Lateral

Location:
Legal - Township 8S Range 2W Section 28 & 29
Other - Riparian area is located along the right bank of a roadside ditch, lying immediately east of Wipper Road, between southern study boundary and Turner Bypass.

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Channelized intermittent drainage	6
Lake/Pond	
Wetland PEM/R4	

LWI Wetland Code: PL-D

	YES	NO	Comments
Water present year round?		X	
Are salmonids present in adjacent water resource?		X	
Is the water resource listed for temperature on DEQ's 303(d) list?		X	

OTHER INFORMATION

Soil—Mapped Series: Courtney gravelly loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Northern 1,000' in Zone AE

Adjacent Existing Land Uses (check those that apply) ☒Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☒Residential	☐Roads ☒Undeveloped ☐Forest ☐Other Semi-public Comments-Designated industrial and residential

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	
Rubus discolor		*Festuca arundinacea*	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

(A:) < 10% B: 10 - 25% C: >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B:) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

A: Yes (B:) No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m (B:) Herbaceous or woody vegetation < 1 m high. C: Bare ground high.

Does woody vegetation hang over the edge of the water?

A: Yes (B:) No

Is large woody debris present in the riparian area?

A: Yes (B:) No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40% (B:) Between 10 and 40% C: <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C:) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-20-99	Riparian Code: PL-2C R
Investigator(s): Jeanne Fromm	Approx. length (feet): 3,527
Riparian Area Location: Riparian area is located along the right bank of a roadside ditch, lying immediately east of Wipper Road, between southern study boundary and Turner Bypass.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	B	1	12	C	1
2	B	2	7	B	1	10	B	2	13	B	2
3	B	2	8	B	1	11	B	1	14	B	1
4	A	3		Total	5		Total	4	15	B	1
5	A	2							16	B	2
	Total	12							17	B	1
									18	B	1
									19	C	1
										Total	10
High	12-14	X	High	8-9		High	7-8		High	19-23	
Med	8-11		Med	5-7	X	Med	5-6		Med	13-18	
Low	5-7		Low	3-4		Low	3-4	X	Low	8-12	X

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A:) Less than 10% | B: Between 10-20% | C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high. | (B:) Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

A: Woody vegetation > 1 m high. | (B:) Herbaceous or woody vegetation < 1 m high. | C: Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

(A:) < 10% | B: 10 - 25% | C: >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A:) Low, slight, moderate | B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A:) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
A: Yes	(B:) No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B:) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
A: Yes	(B:) No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
Does woody vegetation hang over the edge of the water?		
A: Yes	(B:) No	
Rationale: *Overhanging woody vegetation provides shade, creating microclimates.*		

WILDLIFE HABITAT

How many vegetation layers (canopy, mid-story, ground cover) are present?

A: More than 2 layers	B: 2 layers	(C:) 1 layer or unvegetated

Rationale: *Vertical complexity of vegetation increase the variety of niches available to wildlife.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high.	(B:) Herbaceous or woody vegetation < 1 m high.	C: Bare ground

Rationale: *In general, tall woody vegetation provides more food cover, and nesting habitat for a variety of wildlife than herbaceous vegetation.*

Does woody vegetation hang over the edge of the water?

A: Yes	(B:) No

Rationale: *Overhanging woody vegetation contributes leaves, woody debris, and insects to the water resource. It also shades the water and creates microclimates.*

Is large woody debris present in the riparian area?

A: Yes	(B:) No

Rationale: *Large woody debris in the riparian are provides cover for a variety of small mammals, birds, amphibians and insects. It can also be transported to the aquatic system in flood events where it can enhance in-stream fish habitat.*

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40%	(B:) Between 10 and 40%	C: <10%

Rationale: *A vegetated riparian area increase the quality of wildlife habitat by providing food, cover, and nesting opportunities. They can also create migration corridors for wildlife.*

Is surface water present throughout the year?

A: Yes	(B:) No

Rationale: *A perennial water source is valuable t wildlife during the summer months.*

Is more than one type of water resource (e.g. stream, wetland, lake/pond) within or immediately adjacent to the riparian reach?

A: Yes	(B:) No

Rationale: *More than one type of water resource within or immediately adjacent to the riparian reach increases the complexity and quality of wildlife habitat.*

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25%	B: Between 25 and 75%	(C:) >75%

Rationale: *Human-caused disturbance/development within the riparian area directly affects wildlife use. The proximity of human activities may negatively impact sensitive wildlife species that cannot tolerate noise, light, or traffic.*

Riparian Width Determination

Date(s) of work: 11-20-99	Riparian Mapping Code: PL-2C L
Investigator(s): Jeanne Fromm	Reach Length (feet): 3,529

Location:
Legal - Township 8S Range 2W Section 29 & 32
Other- Riparian area is located along the left bank of a roadside ditch, lying immediately east of Wipper Road, between southern study boundary and Turner Bypass.

Dominant Tree Species: None

Potential Tree Height (PTH)/Width of Riparian Area (feet): 75-120'

PTH Determined by:
☐On-site vegetation ☒Reference Site (Code PL-2A R & L)

Comments

This ditch appears to have been located in a natural topographic low. The alluvial fan/terrace surface has a natural northwest and north trending set of swales. The vertical banks of the ditch have failed in some areas and the riprap has been placed to stabilize bank erosion and protect the road.

Typical Cross Section

Turner Local Riparian Area Inventory

Riparian Characterization Sheet

Date(s) of field work: 11-20-99	Riparian Mapping Code: PL-2C L
Investigator(s): Jeanne Fromm	Reach Length (feet): 3,529
Verification Type: On-site	Hydrologic Basin: Perrin Lateral

Location:
Legal - Township 8S Range 2W Section 28 & 29
Other - Riparian area is located along the right bank of a roadside ditch, lying immediately east of Wipper Road, between southern study boundary and Turner Bypass..

WATER RESOURCE INFORMATION

Type	Width (feet)
Stream/River Channelized intermittent drainage	6
Lake/Pond	
Wetland PEM/R4	

LWI Wetland Code: PL-D

	YES	NO	Comments
Water present year round?		X	
Are salmonids present in adjacent water resource?		X	Unknown
Is the water resource listed for temperature on DEQ's 303(d) list?		X	Quality unknown

OTHER INFORMATION

Soil—Mapped Series: Courtney gravelly loam
Potential Erosion Hazard: slight

Within a FEMA 100-year floodplain? Nortern 1,000 feet lies in Zone AE

Adjacent Existing Land Uses (check those that apply) ☒Agriculture ☐Confined Animal Feeding Operation ☐Commercial/Industrial ☒Residential	☒Roads ☒Undeveloped ☐Forest ☒Other Semi-public Comments-Designated industrial and residential

RIPARIAN VEGETATION

Woody Vegetation (trees, shrubs, vines > 1 m tall)		Herbaceous Vegetation (trees, shrubs, vines < 1 m tall)	

RIPARIAN CHARACTERIZATION

What is the average slope in the riparian area?

(A:) Less than 10% B: Between 10-20% C: Greater than 20%

What is the extent of impervious surfaces within the riparian area?

A: < 10% B: 10 - 25% (C:) >25%

Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)

A: No (B:) Yes

Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?

A: Yes (B:) No

What is the dominant vegetation layer in the riparian area?

A: Woody vegetation > 1 m high. B: Herbaceous or woody vegetation < 1 m high. (C:) Bare ground

Does woody vegetation hang over the edge of the water?

A: Yes (B:) No

Is large woody debris present in the riparian area?

A: Yes (B:) No

What percent of the water resource edge is bordered by a vegetated riparian area at least 30 feet wide?

A: >40% B: Between 10 and 40% (C:) <10%

What is the degree of development or human-caused disturbances (e.g. buildings, impervious surface, lawns, agriculture, trash) in the riparian area?

A: <25% B: Between 25 and 75% (C:) >75%

Turner Local Riparian Inventory

Riparian Function Assessment Summary Sheet

Date: 11-20-99	Riparian Code: PL-2C L
Investigator(s): Jeanne Fromm	Approx. length (feet): 3,529
Riparian Area Location: Located along the left bank of roadside ditch lying immediately east of Wipper Rd. between southern study boundary and Turner Bypass.	

Assessment Results

Water Quality			Flood Management			Thermal Regulation			Wildlife Habitat		
? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score	? No.	Answer	Score
1	A	3	6	A	3	9	B	1	12	C	1
2	C	1	7	B	1	10	C	1	13	C	1
3	C	1	8	B	1	11	B	1	14	B	1
4	C	1		Total	5		Total	3	15	B	1
5	A	3							16	C	1
	Total	9							17	B	1
									18	B	1
									19	C	1
										Total	8
High	12-14		High	8-9		High	7-8		High	19-23	
Med	8-11	X	Med	5-7	X	Med	5-6		Med	13-18	
Low	5-7		Low	3-4		Low	3-4	X	Low	8-12	X

Riparian Assessment Sheet: Results and Rationale:

WATER QUALITY

What is the average slope in the riparian area?

(A:) Less than 10% | B: Between 10-20% | C: Greater than 20%

Rationale: *Erosion risk is directly related to slope; the steeper the slope, the greater the risk of erosion.*

What is the dominant vegetation cover in the riparian area?

A: Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | (C:) Bare ground & asphalt

Rationale: *Vegetation reduces the likelihood of erosion by stabilizing soil through the binding action of toots. Woody vegetation provides more effective stabilization due to root mass.*

What is the dominant vegetation at the top of bank (if defined) or edge of water resource?

A: Woody vegetation > 1 m high. | B: Herbaceous or woody vegetation < 1 m high. | (C:) Bare ground

Rationale: *Vegetation adjacent to a water resource reduces erosion by stabilizing banks. Woody vegetation such as trees provides the greatest ability to bind soils due to the depth and mass of roots.*

What is the extent of impervious surfaces within the riparian area?

A: < 10% | B: 10 - 25% | (C:) >25%

Rationale: *Declines in urban water quality can be directly linked to an increase in impervious surfaces. Impervious surfaces increase the frequency and quantity of runoff, contribute pollutants and reduce natural infiltration provided by soil and vegetation.*

How does the NRCS soil survey rank the water erosion hazard of the dominant soil unit mapped in the riparian area? Select highest water erosion hazard if more than one is listed.

(A:) Low, slight, moderate | B: High, severe, very high

Rationale: *The risk of erosion is partially determined by the characteristics of the soil types, such as soil texture, soil structure, an slope, The NRCS has ranked each soil's erosion potential.*

FLOOD MANAGEMENT		
Are there flood-prone areas (flat areas, depressions, swales, FEMA 100-yr floodplain, etc) beyond the top of bank or edge of water resource?		
(A) Yes	B: No	
Rationale: *The ability of a riparian area to provide a flood management function depends on its potential to temporarily store or detain floodwaters. Floodwaters detained t the riparian area infiltrate into the soils and are slowly released downstream.*		
Is woody vegetation greater than 1 meter high dominant in the flood prone area?		
A: Yes	(B) No, or no flood prone area present	
Rationale: *In addition to topography, floodwater detention and infiltration is related to vegetation cover and composition; Woody vegetation reduces the velocity of floodwaters by providing resistance, which increase detention time in the riparian area. The increases detention time allows water to infiltrate into the soil. Both factors delay flooding downstream.*		
Is the stream or water resource constricted by man-made features (e.g. channelization, riprap, concrete wall)		
A: No	(B) Yes	
Rationale: *Channelization of streams and armoring of banks (e.g. riprap, walls, and concrete) increases the velocity of floodwaters. Although, it may reduce local flooding by separating the water resource for its floodplain, it often increases the risk of flooding downstream*		

THERMAL REGULATION		
Does the aspect or orientation of the riparian area allow for shading of water at midday in the summer?		
A: Yes	(B) No	
Rationale: *In Oregon, vegetation on the south side of an east-west oriented water resource has the highest potential of providing shade in the summer. At Oregon's latitude, the midday sun is always south of vertical.*		
What is the dominant vegetation layer in the riparian area?		
A: Woody vegetation > 1 m high.	B: Herbaceous or woody vegetation < 1 m high.	(C) Bare ground
Rationale: *The ability of vegetation to provide shade is directly related to the height of the vegetation. In general, woody vegetation provides more shade than herbaceous vegetation.*		
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A: Yes	(B) No	
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WILDLIFE HABITAT

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16. Appendix G: Plant List

DUP

The plant list is composed of the trees, shrubs, herbs, and vines that were observed in the field during the wetland and riparian area inventory conducted in Turner in 1999.

Species	Common Name	Code	Wetland Indicator Status
	Trees		
Abies grandis	grand fir	ABGR	FACU-
Acer macrophyllum[1]	bigleaf maple	ACMA	FACU
Alnus rubra[1]	red alder	ALRU	FAC
Arbutus menziesii	Pacific madrone	ARME	NI
Crataegus douglasii[1]	Douglas hawthorn	CRDO	FAC
Crataegus monogyna[1]	one-seeded hawthorn	CRMO	FACU+
Fraxinus latifolia[1]	Oregon ash	FRLA	FACW
Pinus ponderosa	ponderosa pine	PIPO	FACU-
Populus trichocarpa[1]	black cottonwood	POBA	FAC
Prunus emarginata	bitter cherry	PREM	FACU
Psuedotsuga menziesii[1]	Douglas-fir	PSME	FACU
Pyrus communis	cultivated pear	PYCO	NI
Pyrus malus[1]	Cultivated apple	PYMA	UPL
Quercus garryana	Oregon white oak	QUGA	UPL
Rhamnus purshiana	cascara	RHPU	FAC-
Salix lasiandra[1]	Pacific willow	SALA	FACW+
Thuja plicata	western redcedar	THPL	FAC

1. Sapling forms of these trees also occur in the shrub layer

16. Appendix G: Plant List

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Fraxinus latifolia[1]	Oregon ash	FRLA	FACW
Pinus ponderosa	ponderosa pine	PIPO	FACU-
Populus trichocarpa[1]	black cottonwood	POBA	FAC
Prunus emarginata	bitter cherry	PREM	FACU
Psuedotsuga menziesii[1]	Douglas-fir	PSME	FACU
Pyrus communis	cultivated pear	PYCO	NI
Pyrus malus[1]	Cultivated apple	PYMA	UPL
Quercus garryana	Oregon white oak	QUGA	UPL
Rhamnus purshiana	cascara	RHPU	FAC-
Salix lasiandra[1]	Pacific willow	SALA	FACW+
Thuja plicata	western redcedar	THPL	FAC

1. Sapling forms of these trees also occur in the shrub layer

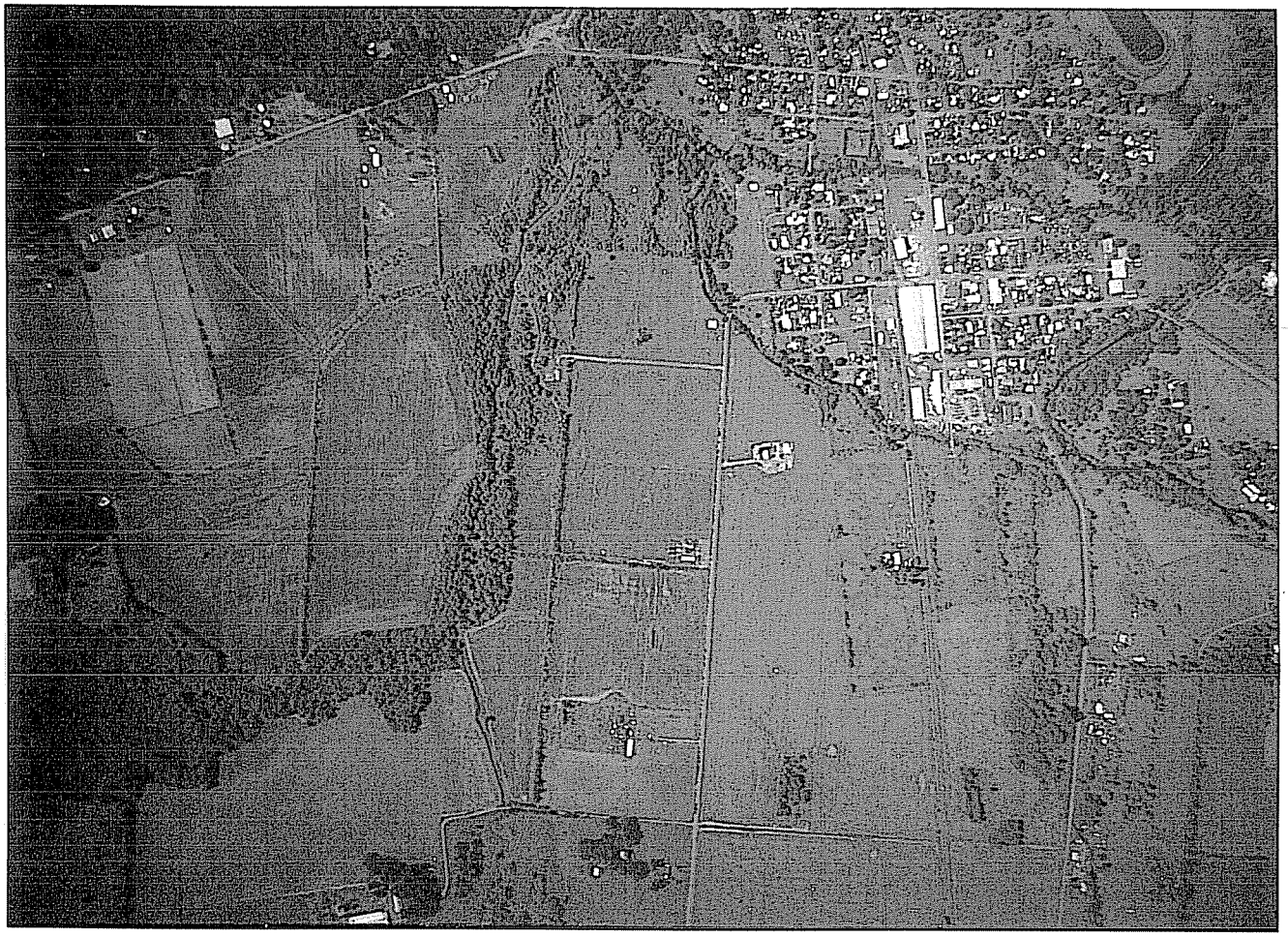
Species	Common Name	Code	Wetland Indicator Status
	Shubs		
Acer circinatum	vine maple	ACCI	FAC-
Amelanchier alnifolia	western serviceberry	AMAL	FACU
Berberis repens	low Oregon grape	BERE	UPL
Cornus stolonifera	red-osier dogwood	COST	FACW
Corylus cornuta	beaked hazel-nut	COCO	FACU
Cytisus scoparius	Scot's broom	CYSC	UPL
Gaultheria shallon	salal	GASH	FACU
Holodiscus discolor	oceanspray	HODI	UPL
Ilex aquifolium	holly	ILAQ	FACU
Mahonia nervosa	Oregon grape	MANE	FACU
Malus fusca	Pacific crabapple	MAFU	FACW
Oemleria cerasiformis	Indian plum	OECE	FACU
Physocarpus capitatus	Pacific ninebark	PHCA	FACW-
Rhus diversiloba	poison-oak	RHDI	UPL
Rosa eglanteria	rose	ROEG	FACU
Rosa gymnocarpa	baldhip rose	ROGY	FACU
Rosa nutkana.	Nootka rose	RONU	FAC
Rosa pisocarpa	clustered wild rose	ROPI	FAC
Rubus discolor	Himalayan blackberry	RUDI	FACU
Rubus lanciniatus	Evergreen blackberry	RULA	FACU+
Rubus parviflorus	thimbleberry	RUPA	FAC-
Sambucus racemosa	red elderberry	SARA	FACU
Spirea douglasii	Douglas spirea	SPDO	FACW
Symphoricarpos albus	Common snowberry	SYAL	FACU

Species	Common Name	Code	Wetland Indicator Status
	Herbs and Vines		
Agrostis capillaris	colonial bentgrass	AGCA	FAC
Agrostis stolonifera	creeping bentgrass	AGST	FAC
Aloepecurus pratensis	meadow foxtail	ALPR	FACW
Amaranthus retroflexus	redroot	AMRE	FACU+
Athyrium filix-femina	lady fern	ATFI	FAC
Avena sativa	common wild oats	AVSA	UPL
Bidens frondosa	devil's beggars-ticks	BIFR	FACW+
Briza minor	little quaking grass	BRMI	FAC
Callitriche heterophylla	different leaved water star-worts	CAHE	OBL
Camassia quamash	common camas	CAQU	FACW
Camassia leichtlinii	Leichtlin's camas	CALE	FACW-
Cirsium arvense	Canada thistle	CIAR	FACU+
Cirsium vulgare	bull thistle	CIVU	FACU
Carex athrostachya	slenderbeak sedge	CAAT	FACW
Carex deweyana	Dewey sedge	CADE	FACU
Carex obnupta	slough sedge	CAOB	OBL
Carex pachystachya	thick-head sedge	CAPA	FAC
Carex unilateralis	one-sided sedge	CAUN	FACW
Convolvulus arvensis	field morning glory	COAR	UPL
Cynosurus echinatus	hedgehog dogtail grass	CYEC	UPL
Cyperus strigosus	strawcolor flatsedge	CYST	FACW
Cytisus scoparius	Scotch broom	CYSC	UPL
Dactylis glomerata	orchardgrass	DAGL	FACU
Daucus carota	Queen Anne's lace	DACA	UPL
Digitaria sanguinalis	crab grass	DISA	FACU
Dipsacus sylvestris	teasel	DISY	FAC
Echinochloa crusgalli	large barnyard grass	ECCR	FACW
Eleocharis palustris	creeping spikerush	ELPA	OBL
Eleocharis ovata	ovoid spikerush	ELOV	OBL
Epilobium ciliatum	Watson willowherb	EPCI	FACW-
Equisetum arvense	common horsetail	EQAR	FAC
Euonymus occidentalis	western wahoo	EUOC	UPL
Festuca arundinacea	tall fescue	FEAR	FAC-
Galium aparine	cleavers bedstraw	GAAP	FACU
Geum macrophyllum	largeleaf avens	GEMA	FACW-
Glecoma hederacea	ground-ivy	GLHE	GLHE
Helix hedera	English ivy	HEHE	UPL
Holcus lanatus	velvetgrass	HOLA	FAC

Species	Common Name	Code	Wetland Indicator Status
	Herbs and Vines		
Hypochaeris radicata	spotted cat's-ear	HYRA	FACU
Iris psuedacorus	yellow iris	IRPS	OBL
Juncus acuminatus	tapered rush	JUAC	OBL
Juncus bufonius	toad rush	JUBU	FACW
Juncus effusus	soft rush	JUEF	FACW
Juncus ensifolius	daggerleaf rush	JUEN	FACW
Juncus patens	grooved rush	JUPA	FACW
Lemna minor	water lentil	LEMI	OBL
Leersia oryzoides	rice cutgrass	LEOR	OBL
Lolium perenne	perennial ryegrass	LOPE	FACU
Lotus corniculatus	birdsfoot trefoil	LOCO	FAC
Mentha arvensis	field mint	MEAR	FACW-
Oenanthe sarmentosa	water-parsley	OESA	OBL
Osmorhiza chilensis	mountain sweet-root	OSCH	UPL
Panicum capillare	common witchgrass	PACA	FACU+
Parentucellia viscosa	yellow-weed	PAVI	FAC-
Phalaris arundinacea	reed canarygrass	PHAR	FACW
Phleum pratense	common timothy	PHPR	FAC-
Plantago lanceolata	rib plantain	PLLA	FAC
Plantago major	broadleaf plantain	PLMA	FACU+
Poa pratensis	Kentucky bluegrass	POPR	FAC
Polygonum hydropiperoides	mild waterpepper	POHY	OBL
Polystichum munitum	swordfern	POMU	FACU
Prunella vulgaris	Heal-all	PRVU	FACU+
Pteridium aquilinum	bracken-fern	PTAQ	FACU
Ranunculus repens	creeping buttercup	RARE	FACW
Ranunculus occidentale	western buttercup	RAOC	FACW
Rhus diversiloba	poison-oak	RHDI	
Rorippa nasturtium-aquaticum	watercress	ROAQ	OBL
Rumex crispus	curly cock	RUCR	FAC+
Rubus ursinus	trailing blackberry	RUUR	FACU
Scirpus microcarpus	small-fruited bulrush	SCMI	OBL
Solanum dulcamara	climbing nightshade	SODU	FAC+
Sparganium emersum	simplestem bur-eed	SPEM	OBL
Stachys cooleyae	Cooley hedge-nettle	STCO	FACW
Tanacetum vulgare	tansy	TAVU	NI
Taraxacum officinale	dandelion	TAOF	FACU
Thalictrum occidentale	western meadowrue	THOC	FACU

Species	Common Name	Code	Wetland Indicator Status
Herbs and Vines			
Tolmeia menziesii	piggyback plant	TOME	FAC
Trifolium pratense	red clover	TRPR	FACU
Trifolium repens	white clover	TRRE	FAC
Typha latifolia	common cattail	TYLA	OBL
Urtica dioica	stinging nettle	URDI	FAC+
Verbascum thapsus	common mullein	VETH	UPL
Veronica americana	American brooklime	VEAM	OBL

17. Appendix H: FSA Aerial Photography of Farmed Areas



South Turner, 1998

South Turner, 1993

18. Appendix I: Staff Qualifications

Jeanne Fromm, M.S. Ms Fromm is an environmental geologist and natural resource planner working for the Mid-Willamette Valley Council of Governments and an engineering consulting firm since 1994. She has a M.S. in Geology and a B.S. in Forest Science. Natural resource technical projects have included: Watershed Restoration and Small Flood Control Projects in the Little Pudding River Watershed, Marion County, Oregon; Bathymetric Survey and Recreational Facility Inventory of the Willamette River: Independence to Keizer, Oregon; wetland determinations, delineations, mitigation design and monitoring, and permitting in Oregon and Washington; Scappoose Bay Watershed Analysis; Yellowjacket Creek Geomorphic Analysis and Restoration Project; Gifford Pinchot National Forest, Washington; Cape Horn Watershed analysis, Skamanaia County, Washington; Environmental Assessment for the Medford Airport Expansion, Medford , Oregon; and Dawson Creek Fluvial Geomorphic Analysis and Corridor Management Plan, Hillsboro, Oregon. Natural resource planning projects have included: Periodic Review of Comprehensive Plans to update the Resource Element for Mt. Angel, Gervais, Aumsville, St. Paul, Willamina, and Sublimity, Oregon; and Mid-Willamette Valley Wellhead Protection Project. Additional training is:

- Washington State Department of Natural Resources Watershed Analysis Training,
- Soil Morphology Workshop for Hydric soils and On-site Waste Disposal, and
- ArcView Geographic Information Systems.

Andrew Wooley, B.S. Mr. Wooley has been working in the GIS field since 1996 and has been with the MWVCOG since 1998. He has a B.S. degree in Planning and Resource management. While with the MWVCOG, he has participated in developing and editing GIS data layers and databases for numerous natural resource analysis projects including the Salem-Keizer Local Wetlands Inventory, the Willamette River Recreation Master Plan, and the Little Pudding Watershed Development Analysis. Mr. Wooley has also provided maps and gathered data for the Periodic Review of Comprehensive Plans to update the Resource Elements for Mt. Angel, Aumsville, St. Paul, Willamina and Sublimity, Oregon.