

CITY OF LAKE OSWEGO  
INVENTORY OF NATURAL RESOURCES

**DRAFT**

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## EXECUTIVE SUMMARY

Contained within the urban growth boundary of the City of Lake Oswego are a variety of natural resource sites that are remnants of historic landscapes. The Project Team identified and field surveyed 226 natural resource sites, including 93 wetlands and water bodies, 34 upland tree groves, 98 individual trees and 1 view point. This Inventory of Natural Resources was conducted to document the existing conditions, map and evaluate the natural resource values of these sites under the guidance of Oregon Land Use Goal 5.

The field survey method included mapping site locations, obtaining photographs showing site characteristics (assessing wildlife habitat and deriving a comparative rating based on quality of cover, food and water resources, level of physical and biological disturbance, connectivity to other natural areas, and unique site features. Wetland functional values were also estimated, based on a standard field format.) Site summaries were prepared that also included recommendations for management.

Individual trees, primarily in the First Addition neighborhood, were described and evaluated on field forms designed for this inventory. Tree species identification, location, size, age and condition were recorded. A determination of "significance" was made for each tree after all had been surveyed and evaluated.

The 3 volume set that comprises the results of this inventory contains a wealth of information for City of Lake Oswego planners and citizens. Volume I contains the report of objectives, methods, results, recommendations and conclusions. This information will be used for numerous purposes, including the development of natural resource management strategies by City planning staff. The report explains the importance and values of resource types, and illustrates low vs. high values through reference to particular sites. Resource management policy recommendations are provided for natural resources in general, and for each specific resource type.

Appendix A, contained in Volume I of the report, includes 8 tables listing wetland/water resources by habitat type, index number, common name, section name, drainage basin and Distinctive Natural Area (DNA). Summary sheets and photographs of wetland sites are included in the Appendix, along with sections defining summary sheet data fields, and management of nuisance plants. Appendix A also includes 6 tables listing upland tree grove sites, and summary sheets and photographs for upland tree groves inventoried.

The evaluations for each site provide a relative ranking of habitat values, as well as additional information related to functional values, educational values, relative significance and enhancement/restoration potential.

Volume II contains Appendix B, the individual tree inventory information. Data sheets and photographs are included for these resources.

*Volume III contains Appendices C, D and E. The appendices have information explaining the field data forms used for the inventory (Appendix C), a wetland/water resources field data index and data sheets (Appendix D), and the upland tree grove field data index and data sheets (Appendix E).*

*Natural resources in the City of Lake Oswego range in quality from poor to excellent, and range in value from insignificant to significant. The assessment of quality is based primarily on observable features; while the assessment of significance is based more on professional judgement and experience. The citizens and government of Lake Oswego, however, are charged with the task of deciding how to value these natural resources, and how to establish a protection and management program that enhances and preserves these values for future generations.*

# CITY OF LAKE OSWEGO INVENTORY OF NATURAL RESOURCES

## 1. INTRODUCTION

Oregon's land use planning Goal 5 requires that local jurisdictions "conserve open space and protect natural and scenic resources". The Goal 5 process begins with identification and inventory of resources and an evaluation of their significance. Criteria for establishing significance are not well defined by Goal 5 or by its associated administrative rule, OAR 660-16. The primary goal of this inventory was to document, map and evaluate natural resource sites within the City of Lake Oswego's Urban Growth Boundary. We have also rated the functional and habitat values, identified conditions that could degrade these values, and made recommendations for management of the resource sites. This information will provide the technical basis for the City of Lake Oswego to establish significance criteria; community values, economics, and other social considerations will provide additional parameters for establishing significance criteria.

Resource sites evaluated for this inventory included wetlands, water bodies, stream corridors, upland tree groves, and individual trees. The majority of the sites were identified in 1976 in Lake Oswego's Physical Resources Inventory (LOPRI) and were classified as Distinctive Natural Areas (DNA). An attempt was made to locate and inventory all DNA's. Additional sites were identified by interested citizens through mailings, public meetings, and telephone conversations, or discovered by the field team.

## 2. METHODOLOGY

All sites were categorized by type and generally located on a City map of Lake Oswego with identification numbers. For example, wetland or water resource sites were identified with a "W" followed by a number; Tree Groves were identified by a "TG" and Individual Trees were identified with a "T". One DNA site was notable only for its view and was designated by a "V". Each resource category required somewhat specific survey and evaluation criteria and methodology. Survey methods are described below for the two major resource categories, natural resources and individual trees.

Project Team members are identified in Section 6 of this report. Christie Galen and Janet Burcham identified and evaluated wetland/water resources, tree groves and one scenic view point. Chris Thoms evaluated amphibian and reptile habitat. Dennis Lueck identified and evaluated individual trees. Field inventory of resource sites was conducted from September through December, 1991.

### 2.1 NATURAL RESOURCE SITES

Each site was surveyed on foot to determine the vegetation, land features, water resources, and condition, and to rate the existing values. Observations of wildlife using the site were recorded and the adjacent land use was examined to develop recommendations for management strategies. Each site was photographed and generally mapped on aerial section maps (April 1987, 1 in. = 200 ft.) and identified by number. (Site boundaries are not precise, and are based on photo interpretation, particularly where access was limited due to private property.)

A standard Wildlife Habitat Assessment form was modified specifically for the City of Lake Oswego inventory and used at each site<sup>1</sup> (Appendix C). It includes a narrative description of site features, vegetation and wildlife species lists, and management recommendations. It also includes a numerical rating based on the quality of water, food, and cover resources, physical and biological disturbance, connectivity to other natural areas, and unique site features. The numerical rating should be used as a tool to compare similar habitat types.

\* Wetland sites were evaluated for wetland functions as well as wildlife habitat. Wetland functions include stormwater storage, nutrient retention/removal, sediment trapping, groundwater modification, shoreline stabilization and fisheries habitat. These functions were evaluated for all wetland sites when appropriate. A Wetland Functional Values Assessment Form was used for ponds (Appendix C)<sup>2</sup>. Twelve functions are rated as low, medium, or high for each site. This method does not represent the detail of more rigorous methods used for evaluating large wetlands such as the WET 2 or Adamus methods; however, it requires the evaluator to examine the characteristics and conditions for the same major functional values.

✓ Sites were rated relative to each other within the category of resource type. Ratings of values were made for existing conditions at the time of survey and not for the potential values sites might have if conditions were to change.

Summary sheets are included for each site with a brief description of the site and its values, its assessment score, and management recommendations (Appendix A). An explanation of the rated Functional Values is also included.

## 2.2 INDIVIDUAL TREES

Field inventory of individual trees was conducted over a four-day period in early October 1991. Most of these trees are located in the First Addition neighborhood and are designated as DNA's. A data form was also developed to describe and evaluate individual trees (Appendix B). Each data form provides information on tree species, location, size, age, and condition. A space was left on the data form for sketches of trees if no photo was taken. This only occurred once (T-4). Each tree was mapped on aerial section maps (April 1987, 1 in. = 200 ft.). Photographs were also taken and included with data sheets to help others identify the trees, and to serve as historical records (Appendix B).

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<sup>1</sup> The form is adapted from one developed by staff from US Fish and Wildlife Service, Environmental Protection Agency, Corps of engineers, Oregon Department of Fish and Wildlife, Portland Audubon Society and the Wetlands Conservancy for the City of Beaverton's 1983 Goal 5 inventory.

<sup>2</sup> This form is based on a draft worksheet developed by EPA staff in Corvallis.

Trees were identified by genus, species, and, if possible, cultivar or variety. Positive identification of some individual trees was difficult because of the season. Where species identification was uncertain, "sp." was written after the genus. Where the cultivar was uncertain, "cv." was written after the species, or the cultivar name on the original list was used, presuming the accuracy of that list.

Tree height, crown spread, and trunk diameter were visually estimated to provide an idea of tree size relative to others. Age was approximated based on the tree surveyor's knowledge of the species' growth rate and site-specific criteria.

The condition or health of each part of each tree was evaluated using a combination of objective and subjective criteria. A tree canopy rated excellent if it had very little dead wood in it, had foliage of average size for the species, was symmetrical, and showed few or no signs of severe storm damage or poor pruning in the past. Likewise, the branches and twigs were judged by their apparent health, or the lack of it. The trunk of a tree was rated excellent if it appeared to have developed normally and showed no evidence of mechanical damage or rot. The root zone was examined and received a rating of excellent, providing there was no evidence of soil compaction, past mechanical damage to the roots, or excessive pavement in the vicinity.

Ownership of the property on which the tree grows was often difficult to determine, as few streets in the study area have a treelawn or "park strip" (that area of public right-of-way between the curb and the sidewalk, where trees in most cities are planted). Although many of the trees that grow adjacent to the street are probably within the public right-of-way, property ownership was listed as "private" unless the existence of a treelawn indicated otherwise.

A determination of a particular tree's significance was not made at the time the tree was evaluated but after evaluating all trees and making comparisons among them. Some trees clearly stood out from the rest and were variously described on the data sheets as "magnificent," "splendid," or "superb." Nonetheless, it is up to the City of Lake Oswego to develop its own criteria for determining which of these trees and others not yet surveyed are significant.

## 2.3 LIMITATIONS

An autumn inventory of natural resources is limited due to the season. Most flowers are senescent and many wildlife species have already migrated or are inactive. Consequently, the inventory focused on potential water, food and cover resources. Sensitive plant species were not apparent and could not be assessed. Upland meadows were either grazed or mowed and could not be evaluated. Access was severely limited on some sites due to the density of residential property around them, or the presence of impenetrable blackberries. Access was denied by one property owner (DNA 31).

## 3. RESULTS AND DISCUSSION

A total of 226 resource sites was identified including 93 wetlands and water bodies, 34 tree groves, 98 trees, and 1 view point. Thirty seven of the wetland/water resource sites, 26 of the tree grove sites, and one view point were identified as DNA's in LOPRI. Four sites which don't completely fit into the major resource categories are: Bryant Woods Park, Oswego Lake, Willamette River and Mt. Sylvania. These sites will be described separately in the recommendations section of this report. A general discussion of ratings specific to each major resource category follows.

## 3.1 WETLAND/WATER RESOURCES

### 3.1.1 Basic Concepts

The category of Wetland/Water Resources includes a number of habitat types with hydrology ranging from permanently inundated to seasonally wet. Ponds and stream corridors are permanently inundated (with the exception of intermittent streams), while wetlands can be inundated, or have saturated soil only during part of the year. The two wetland classes found in the Lake Oswego study area are emergent and forested. Emergent wetlands are dominated by erect, rooted, herbaceous plants that do not tolerate prolonged inundation of the entire plant. In this study the emergent category excludes emergent wetlands associated with ponds. Forested wetlands are dominated by woody vegetation greater than 20 ft. tall, and typically have standing water or saturated soil during winter and early spring. Wetlands inventoried in this study include 27 ponds, 7 emergent wetlands, 14 forested wetlands, and 51 stream corridors. The total number of wetlands, 100, are greater than the number of inventoried sites, 93, because occasionally sites contained two or more habitat types.

Wetlands have historically been treated as expendable; they've been drained, filled and/or modified for agriculture and development. Scientists, planners, and engineers have begun to recognize the high value wetlands provide for stormwater storage, erosion control, water quality protection, connections with groundwater dynamics, and fish and wildlife habitat. They also provide scenic, educational and recreational opportunities.

One potential water quality protection attribute of wetlands is nutrient retention and removal. A wetland in the study area may have received only a low or moderate score for nutrient retention even though it had sufficient holding capacity and an abundance of emergent plants. Observations of water that was grey or of degraded quality entering and exiting a wetland led to the assumption that the nutrient removal capacity of the wetland was exceeded.

Groundwater recharge/discharge is an important function of some wetlands and, in some cases, may be greater than more obvious functions such as wildlife habitat or recreation. This function was not assessed for the wetlands in the study area with the exception of forested wetlands. Assessing groundwater recharge requires knowledge of site soil characteristics, such as permeability and depth to groundwater. This level of sampling was not included in the scope for the inventory.

### 3.1.2 Emergent Wetlands

Seven emergent wetland sites were inventoried excluding emergent wetlands surrounding ponds. Emergent areas associated with ponds are included within the pond habitat classification. Typical plants growing in these emergent wetlands are rushes, sedges, creeping buttercup, and grasses such as reed canarygrass, bentgrass, and meadow foxtail. Although many of these wetlands often appear to be dry grassy meadows in the summer, they are wet during the winter and early spring and can be significant habitat for migrating and wintering waterfowl. They often function as temporary storage areas for stormwater runoff and traps for sediments, nutrients, and pollutants carried by runoff.

Wildlife habitat assessment scores for emergent wetlands ranged from 10 to 23. Low scores reflect monotypic vegetation, and excessive grazing and mowing practices (see sites W-50, River Run, and W-60, Atwater as examples). Less disturbed sites with greater plant diversity on and adjacent to the site received higher scores (see sites W-52, Daniel Way West, and W-71, Cirque St. as examples).

### 3.1.3 Forested Wetlands

Fourteen forested wetland sites were inventoried. Forested wetlands are seasonally flooded and located in depression areas, surrounding springs and seeps, or adjacent to stream corridors. Typical plants growing in the multi-layered canopy include black cottonwood, Oregon ash, Pacific willow, ninebark, shrub willow, rose, spirea, slough sedge, and rush. The multi-layered canopy provides cover, food, nesting and perching sites for wildlife. Forested wetlands can also provide flood storage and water quality protection values.

Forested wetlands received wildlife habitat assessment scores of 30 to 78. Low scores reflect the isolation of the site from other natural areas and low vegetative species diversity (see sites W-2, RXR Triangle 1, and W-6, Tualatin St. N. as examples). High scoring sites were located near permanent water sources and vegetation consisted of a variety of food and cover plants for wildlife (see sites W-3, RXR Crescent, and W-15, West Waluga Park as examples). These sites are the most difficult to replace or restore if destroyed because of the slow growth rates of trees.

### 3.1.4 Ponds

Twenty-seven ponds were inventoried. They consisted of natural ponds, quarry ponds, and ponds created for stormwater detention and agricultural uses. Ponds provide year round water resources for all wildlife species. Their wildlife habitat value increases when they are located adjacent to natural upland habitat. For example, W-28, Hunt Club Pond, provides water for wildlife inhabiting the expansive southern slopes of Iron Mountain (TG-28). The larger ponds with emergent and aquatic vegetation such as W-26 (Frog Pond) and W-28 (Hunt Club Pond), provide significant waterfowl habitat. Waterfowl are attracted to these large ponds because of abundant food resources as well as refuge. Frog pond is an important refuge and feeding area for waterfowl whose habitat is disturbed by boat traffic on Oswego Lake. When ponds are connected to stream corridors, they may hold stormwater runoff and alleviate flooding in adjacent or downstream areas. An example of this is site W-40 (Fielding Cr.). They may also protect water quality in downstream areas by trapping and filtering out sediments, nutrients, and toxic substances. Examples of this can be seen at sites W-20 (Carter Creek 2) and W-23 (Townsquare).

Ponds were not regularly evaluated for fish habitat if they were obviously non-fish bearing, or if extensive sampling would have been necessary to establish the presence of fish. However, some of the ponds were densely populated by the small mosquito fish (*Gambusia affinis*). The abundance of this food resource supports fish-eating birds such as kingfisher, and green-backed and great blue herons, and raccoon and mink. Another fish species, the stickleback (*Gasterosteus sp.*) was observed in Indian Spring (W-12) hiding in the algae mats.

Wildlife habitat assessment scores for ponds ranged from 10 to 77. Low scoring sites reflected questionable water quality or low vegetative structure and diversity surrounding the pond. Typical low value ponds were surrounded by mowed or grazed vegetation with limited cover for nesting and refuge.

and limited food value except for a few small wildlife species and waterfowl that feed on grass shoots (see sites W-18, Mercantile Village, W-57, Country Club, and W-69, Bay Creek 5, as examples). High scoring sites contained diverse aquatic vegetation and were surrounded by a multi-layered canopy of diverse native vegetation (see sites W-1, Willow Lane, W-4, RXR Triangle 2, W-10, Bryant Woods, W-12, Indian Spring, W-26, Frog Pond, W-27, Beth Ryan, and W-28, Hunt Club Pond as examples).

### 3.1.5 Stream Corridors

Fifty-one stream corridors were inventoried. Some stream corridors could be accessed only at one or two points and evaluations of functions and characteristics were based on these limited observations. Stream corridor habitat varied from channelized streams with low vegetative structure to natural stream channels with meanders, wetland terraces and multi-layered forest canopy. Among the specific functions evaluated for stream corridors, some of the most important were wildlife travel corridor, connectivity to other open space refugia or habitat types, water access, and the undisturbed condition of the vegetation.

Stream corridors are important wildlife travel corridors. They link diverse habitat types providing linear pathways for wildlife seeking food and refreshment. An example of this is TG-11 which is located adjacent to Upper Goodall Creek (W-31). Wildlife species in the upland forest depend on receiving daily water in the stream corridor. Many wildlife species also disperse along stream corridors to colonize new areas.

Wildlife require access to water. Steep vertical banks, such as found in W-11A, Oswego Canal, limit access for many wildlife species. Gently sloping banks and broad terraces provide access for all species.

The quality and diversity of vegetation along stream corridors influences the diversity of wildlife. Greater plant diversity provides greater food, cover and reproductive resources for wildlife. (See sites W-64, Lower Sun Creek, and W-47, Hallinan Creek as examples). Limited plant diversity reduces wildlife value. Plant diversity decreases with disturbance. Sewerlines routed along streams can promote noxious weed growth on the associated disturbed soils. Dense blackberry thickets reduce access for large mammals like deer. Himalayan blackberry and English ivy reduce food, cover and breeding potential for most other wildlife species because they out compete native herbaceous plants and limit plant diversity. An example of limited plant diversity in an ivy dominated stream corridor is W-48, Upper Oswego Creek, which scored 52 points. This contrasts with the adjacent site, W-29, Lower Oswego Creek, which has a diverse riparian community and limited ivy present. Lower Oswego Creek scored 82 points.

Riparian vegetation also benefits water quality. The riparian canopy shades the stream helping maintain water temperature and preventing banks from eroding and contributing silt to the stream. The vegetation also regulates the rate of runoff from rainfall events into the drainage basin and can physically and biologically remove potential contaminants coming from upland areas.

Fish habitat was not a function that was rated for the stream corridors of the study area because assessment would involve sampling of fish populations and measurements of physical characteristics of a stream such as gradient, flow, substrate type, etc. This level of survey was beyond the scope of the project. Many of the streams in the study area are very low flow, high gradient streams that are

unlikely to be fish-bearing. However, small streams influence larger fish-bearing streams into which they flow. Temperature, sediment, and nutrient levels in larger streams are affected by the cumulative contributions of small tributaries.

Wildlife habitat assessment scores for stream corridors ranged from 18 to 93. Scores range widely due to the variety of streambank vegetation and impacts of channelization. Low scores reflect extreme alteration of stream channels, lack of vegetation diversity on streambanks, and proximity of conflicting land uses (see sites W-17, Carman Creek, W-49, West Lost Dog Creek, and W-62, Centerpointe Creek as examples). High scores indicate more natural channels with diverse streambank vegetation and wetland benches, and the presence of buffers to protect the resource (see sites W-64, Lower Sun Creek, and W-47, Hallinan Creek as examples).

There are many unique stream corridors in Lake Oswego. Four sites stand out because of location, quality, or restoration potential. Pecan Creek (W-85) is an important link to the Tualatin River for Cook Butte and other uplands north of the creek. Deer use the creek as a travel corridor to Cook Butte. W-83 is a tributary of Tryon Creek with limited encroachment from residential development. A tributary of Ball Creek (W-64) is natural and vegetation is dominated by native species. W-36 is a spring, stream and pond located near the intersection of Lakeview and Bryant Roads. It rated a low wildlife habitat assessment score due to the dominance of English ivy. Its score of 42 could increase to 84 if English ivy is removed and replaced by native vegetation.

## 3.2 UPLANDS

### 3.2.1 Forested Uplands

Thirty four forested upland sites were inventoried including 26 sites identified as Distinctive Natural Areas (DNA) in LOPRI and eight identified by the field team. Ten DNA sites have been developed or reduced in size: DNA's 38, 40, 41, 42, and 49 have been developed. DNA 40 (TG-9) was inventoried as an example of a developed site; remaining trees on this site provide very limited wildlife habitat. DNA's 22, 32, 34, 39, 45, and 50 have become fragmented or reduced in size which has degraded their wildlife habitat value.

Tree groves inventoried included 7 deciduous sites, 10 coniferous sites and 16 sites of mixed deciduous/coniferous forest. Deciduous groves include three community types: big leaf maple/red alder (TG's 14, 26, and 27), oak/madrone (TG 28), and oak/ash (TG's 8, 15, and 32). The maple/alder community occurs as an early successional stage after a Douglas fir or western hemlock forest has been logged. The oak/madrone community occurs on dry rocky bluffs (Iron Mt., Oswego Lake). The oak/ash community occurs in or adjacent to wetlands. Coniferous groves are dominated by Douglas fir and include western red cedar, big leaf maple, and occasional grand fir and western hemlock (TG's 4, 5, 13, 16, 18, 20, 23, 24, 25, 30, and 34). Mixed deciduous/coniferous groves are dominated by big leaf maple and Douglas fir (TG's 2, 3, 7, 10, 11, 12, 17, 19, 21, 28, and 29). There are also a few mixed groves that are located on hillsides and in the transition areas between wetlands and uplands; these contain the most diverse plant communities and include white oak, Oregon ash, Douglas fir and big leaf maple (TG's 1, 6, 22, and 33).

Tree groves are essential for a variety of wildlife species. Multi-layered woodlands provide food, cover, nesting and perching sites for migrant and resident species. Snags provide potential nesting sites for cavity nesters. Large trees or snags provide hunting perches for hawks and owls if the woodland is adjacent to fields where hawks and owls hunt mice, snakes, and rabbits. They also provide hunting perches for fish-eating birds such as osprey when they're located adjacent to waterways such as Oswego Lake and the Willamette River. Coniferous trees also provide year round thermal protection.

Wildlife habitat assessment scores for upland tree groves ranged from 12 to 76. Sites that rated highly had some or all of the following characteristics: they were close to water (TG's 4, 8, 11, 12, and 18), large in size (TG's 14 and 28), were relatively undisturbed or had near pristine vegetative conditions (TG's 12 and 27), were an uncommon composition of tree and shrub species (TG's 15 and 28), and were close to other open space areas. All of these sites should be preserved. Low scoring sites lacked plant diversity either because understory shrubs and herbaceous plants had been cleared (TG-9) or English ivy and/or Himalayan blackberry dominated the understory (TG's 1, 16, 19, and 20).

### 3.3 INDIVIDUAL TREES

Ninety-eight individual trees were inventoried. Eighty-one trees were identified in the original 1976 inventory (LOPRI). Seventy of these were identified on the Garden Club Tree Walk (T-1 to T-70). Eleven were identified as Distinctive Natural Areas (T-71 to T-81). The remaining 17 were identified by the field team (T-82 to T-98). Some trees on the initial list could not be located in the field, as they had either been removed or their location had been misidentified initially.

○ About half of the inventoried trees merit the designation "significant" according to criteria used by other communities. A tree in good health may be considered significant if it is of exceptional size or age (relative to species), if it is rare, or if it has historical importance or has served as a landmark. Large, old trees are certainly more likely than smaller trees to evoke a sense of awe in passersby. But more importantly, large trees provide more benefits (environmental, aesthetic, economic, and ecological) for a community than do smaller trees simply because they have so much more leaf area. Even if new trees are planted after the removal of a large tree, it will be many years before they begin to provide the level of benefits that had been provided by the tree that was removed. A tree may not be considered significant if it is a common species in the area (unless it is of unusually large size or age), if it is in poor health, or if it is small or young (relative to species). Fifty one trees are considered "significant" by the surveyor and are listed at the beginning of Appendix B. These include 29 trees in the Garden Club Tree Walk (6 which were also designated as DNA's), 11 trees designated as DNA's (6 of which were also included in the Garden Club Tree Walk), and 17 trees identified by the field team. The City of Lake Oswego will need to develop its own criteria for designating significant trees.

○ Some of the most magnificent trees in this survey are found downtown in the vicinity of A and B Avenues. Because of their location, the continued health of these trees is not necessarily assured if development occurs in their vicinity. Recommendations are made on the data sheets that pavement be removed nearest the trunks of some individual trees, such as the enormous elm on 1st Street (T-24). Additional protective measures need to be taken if construction activity is to occur anywhere within the tree's root zone. The prognosis for most of the trees in the residential portion of the First Addition, on the other hand, is excellent because trees there do not face the threats that trees downtown and in other rapidly changing areas face.

One humorous aspect of the data analysis was the discovery that the son of Lake Oswego's first mayor may have been struck by lightning under two different trees! In the Garden Club Tree Walk, he is said to have been struck under the Lombardy poplar at 1st St. and B Avenue. And in the DNA list, he is said to have been struck under the sugar maple at 3rd St. and C Avenue. The poor lad must have been accident-prone.

#### 4. RECOMMENDATIONS

Resource management recommendations are presented in this section specific to each resource category. Specific policy suggestions are listed at the end of each section.

##### 4.1 WETLAND/WATER RESOURCES

###### 4.1.1 Basic Concepts

Many of the recommendations for management of wetland/water resources have general application to the four types inventoried in the study area—emergent, forested, pond, and streams. Buffers that screen the wetland and encourage wildlife use of wetlands are important because of the separation from human activity and the cover and additional food resources provided by the buffer vegetation. While vegetation in wetlands can reduce sediment and nutrient loads from water as it flows through, excessive nutrient or toxic contamination can degrade the wetland. The hydrologic upstream system of wetlands must be maintained. The volume of water may increase with increased impervious service and construction activities. Water quality of sources feeding wetlands in the study area should be monitored both for maintaining the quality of the stream or groundwater system and the wetlands. Some of the wetlands have been surrounded by development and are isolated by residential fences. Wildlife access is limited to animals small enough to enter through small gaps in the fence or to birds. Wherever possible, fencing should be placed so that animals can move easily to and from the wetland at several points so they will not be trapped on or excluded from the site.

Invasive weedy plant species are colonizing or dominating some wetlands in the area and can seriously degrade the value of these sites. Reed canarygrass and bittersweet nightshade are widespread. They inhabit disturbed sites. Reed canarygrass is a rhizomatous nonnative grass that often forms a monoculture. Bittersweet nightshade is a vine that can densely cover emergent and shrub/scrub wetland communities. Purple loosestrife, an ornamental garden flower has escaped from urban gardens and is beginning to colonize native wetland communities. Loosestrife is a very undesirable species because it grows very densely and can make shorelines almost impenetrable to wildlife and waterfowl. It was found on sites W21, W43, W67 and W70. Currently loosestrife populations are small, scattered and controllable. These populations should be eradicated to prevent their spread. Potential control measures could include a Nuisance Plant Ordinance to prohibit planting loosestrife in landscaping and hand pulling existing populations.

Wetlands associated with City parks or near a school have the greatest potential to serve as educational and passive recreation sites. Restoration projects to eradicate nonnative plant species and replace them with native species and other enhancing measures could be undertaken by school classes or neighborhood park users. Soft trails or boardwalks may encourage a closer look at some wetland features and foster appreciation of the natural resources. Interpretive signs and brochures can also help the public understand the importance and sensitivity of these natural resources.

#### 4.1.2 Policy Recommendations: All Wetland/Water Resource Types

- **Vegetative buffers should be required around all identified wetland/water resource areas.**  
The buffer width should be based on a combination of resource value and type, existing adjacent land uses, proposed and/or allowed adjacent land uses, and specific development site plans (i.e. location on site of potentially disturbing activities). Buffers around wetlands should generally consist of native, upland species, with planning consideration given to multi-layered plant communities, and resting, feeding and nesting habitat for wildlife species characteristic of the specific wetland type.
- **Wetland resources should be protected from water quality degradation.** Point and non-point sources of surface water inflowing to wetlands should be pre-treated if these inflows have existing or potential contamination. Pre-treatment means removal of potential contaminants using physical or biological methods, including sediment and erosion control measures on new construction or existing unvegetated or erosive slopes. Contaminants include sediment, nutrients, pesticides/herbicides, heavy metals, petroleum products, and other chemicals posing potential risk to wetland plants, aquatic animals and wildlife, and humans.
- **Fencing should not restrict wildlife access to or from wetland resources.** Large-mesh fencing materials should be used where applicable to allow passage of smaller wildlife species. Gaps in fencing should be planned, where applicable, to allow unrestricted movement of larger species.
- **Wetland resources should be identified by interpretive materials.** Significant wetland sites should be marked by interpretive signage that indicates the "special" nature of the sites. A Lake Oswego natural resource site logo could be developed and incorporated into signs, brochures and other materials to enforce the concept of a natural resource system throughout the City. Significant wetland sites within each wetland category (i.e. emergent, forested, etc.) could be identified as reference sites for the purpose of comparison and education. Signage should explain to the public what the educational values of the sites are, and what activities are and are not appropriate in and around these sites.
- **Wetland restoration guidelines should be developed and made available to the public and land owners/developers.** The City should provide guidelines concerning the eradication of pest plants and the restoration of native plant species to wetland areas. General guidelines can also be made available concerning restoration of wetland hydrology and fish and wildlife habitat.
- **A nuisance plant ordinance should be established to control the introduction and spread of non-native nuisance plants, such as purple loosestrife.** Purple loosestrife should be prohibited in landscaping and existing populations in natural wetlands should be eradicated.

- **The hydrology and soil resources of wetlands should be protected.** Proposed development near wetlands should be carefully reviewed to determine the existing hydrologic patterns that maintain the wetland to prevent excessive flooding or dewatering of the site. Development should not be allowed that will disrupt surface or groundwater flows to wetland resources. Soils in wetlands should be protected from compaction if heavy equipment is used in and around these areas.

#### 4.1.3 Policy Recommendations: Ponds

- **Plantings within and surrounding mitigation ponds should be monitored and replanted if plantings fail.**

#### 4.1.4 Policy recommendations: Stream Corridors

- **Establish buffer guidelines specific to the nature of the stream corridor.**  
The most effective means of protecting the functions and values of stream corridors is to require buffers as development occurs along the corridor. Buffers may vary in width depending upon the existing width of the corridor, the diversity and integrity of the riparian/forest vegetation, topography of the drainage basin, and the volume of stormwater runoff from a potential development that would be added to the stream. Buffers could be as little as 10 ft. for streams already altered by development and as great as 75 ft. for streams with little surrounding development or steep canyon walls. Buffers should begin at the edge of the water or wetland boundary for streams already altered by development and at the top of slope for steep canyons.
- **Control and/or eradicate nuisances species like English ivy and Himalayan blackberry and replace with native vegetation in stream corridors.** These insidious nonnative plant species have eliminated native groundcover over large areas of the stream corridors in the study area. As the diversity of plant species is reduced, so are the food and cover resources for wildlife. The dominance of these species also restricts travel and reduces breeding opportunities.
- **New sewer lines along stream corridors should be sited and installed in the most environmentally sensitive way possible.** Sewer lines should be sited in ways that will avoid or minimize impacts to stream beds, wetland hydrology and significant wetland vegetation. Avoid placing sewerlines in remaining stream corridors such as W-64. Plans for backfilling and restoration of lands excavated for sewer construction should consider the impact of fill material on shallow groundwater hydrology, the suitability of fill material for growth of desired vegetation, and the compatibility of vegetation replanted on site to the existing plant communities.
- **Specific stream corridors should be identified for special protection.** Site W-5 (Pecan Creek) should be preserved as a wildlife travel corridor. Site W-83 should be preserved as a significant tributary to Tryon Creek. Site W-64 (tributary to Ball Creek) should be preserved and protected for its pristine conditions.

- **Restore native vegetation along stream corridors.** Site W-36 would be an excellent site to do a demonstration project of the potential for restoration in ivy dominated stream corridors.

#### 4.1.5 Oswego Lake

Oswego Lake is the focus of the City of Lake Oswego. It is surrounded by boat docks, residential development, and rocky bluffs. Residential development is quickly infilling the remaining forested areas surrounding the lake. The forests provide important perch sites for birds that pursue prey on the lake such as osprey, heron, great horned owl, and red-tailed hawk. Removing forests reduces the possibility that these birds will inhabit the area and also reduces the aesthetic value of the lake.

#### Policy Recommendations: Oswego Lake

- **Forest resources fringing Oswego Lake should be protected.** Significant patches of forest fringing the lake should be identified for protection due to the wildlife value related to the lake resource.
- **Nesting potential for waterfowl and swallows can be improved.** Install nest boxes for swallows. Leave some meadow areas unmowed for nesting waterfowl. Improve the vegetation on sewer manholes within the lake for nesting waterfowl.

#### 4.1.6 Willamette River (and Tualatin River)

The Willamette River Greenway (WRG) Plan requires that "...any development, change of use or intensification of use of land classified WRG shall be subject to design review ....". The intent of the Greenway Plan is "...to protect, conserve, enhance, and maintain the natural, scenic, historical, agricultural, economic, and recreational qualities of lands along the Willamette River...." In spite of the stated goals, development continues to be located in the Greenway under permitted conditions. This results in cumulative losses of the riparian forest corridor. The remaining forest corridor along the river is essential to the integrity of wildlife habitat, water quality, esthetic, and other natural resource values. The City of Lake Oswego should continue to carefully scrutinize applications for developments in the Willamette River Greenway and the Tualatin River corridor. Replacing native riparian forest with landscaping is often an inadequate substitute and defeats the goal of the Greenway Plan.

#### Policy Recommendations: River Corridors

- **Policies regarding development in the Willamette River Greenway and Tualatin River corridor should be reviewed and strengthened to protect the values of riparian and riverine resources.**

#### 4.1.7 Bryant Woods Park

The continued protection of Bryant Woods Park (W-10) as open space is assured as long as the City continues to manage it as an undeveloped park without ball fields and swingsets. The southern end is of highest diversity in natural resources and wildlife habitat because of the large pond fed by Indian Spring (W-12). Water quality maintenance and protection of the spring from runoff along Childs Road

is a very important measure that can benefit and protect the water quality of the pond. Any future road projects on Childs Road that could affect the hydrology of the Spring and ultimately the pond should be rigorously avoided. Installation of a roadside curb may benefit the spring by preventing roadside pollutants from entering the spring. More wood ducks may be attracted to the pond if more nest boxes were hung in trees around the pond and along the inflowing stream.

The northern portion of the park is an herbaceous wetland, but appears to have had some alteration of drainage patterns, perhaps to convert the area to pasture at an earlier time. Reed canarygrass dominates the vegetation in this area and parts of the meadow are mowed. Attempts to eradicate this species may not be successful in the area of disturbed hydrology because the hydrology may no longer be adequate for native wetland plants to thrive and outcompete the regrowth of reed canarygrass. Periodic mowing will control the rank growth of reed canarygrass somewhat. Creating deeper ponds in the depression areas of the wetland could provide greater waterfowl habitat. Planting buffers of trees and shrubs surrounding these ponds could enhance wildlife habitat for other species and decrease reed canarygrass habitat.

## 4.2 UPLANDS

### 4.2.1 Upland Tree Groves

Upland forests do not receive the same protection by state and federal regulatory agencies as do wetlands. Upland forests are prime developable real estate in an urban area, and most often only small remnant patches remain of once larger, contiguous stands. The value of these upland forest sites increases as they become increasingly scarce and under represented in the total area preserved as open space. More particularly, some forest community types which were uncommon before development become rare afterwards. Although upland forests will continue to receive more pressure for conversion to commercial or residential development, sites which are outstanding for their unusual community structure, size, and integrity should be protected by open space designation as examples of the diversity of the original forests that once covered Lake Oswego. Sites adjacent to water sources should be given priority for protection over isolated sites without water.

Three tree groves on private land require special consideration. TG-4 is located on a knoll between two joining tributaries of Ball Creek; development of this site threatens the water quality of both tributaries. TG-18 is one of the last large tree groves above Oswego Lake creating a scenic viewscape as well as an important perch site for raptors. TG-27 stands out for the quality of its vegetation, which is dominated by native species.

Tree groves are vulnerable to construction impacts. The West Lake subdivision was built into an oak/ash woodland and wetland (sites TG-15 and W34) north of Kruse Way. An attempt was made to retain trees around the houses as well as an extensive area of "pristine" forest. The health of the latter is assured for the time being. The health of the trees left around the houses is poor, however. Virtually every tree examined suffered severe mechanical damage to its trunk, and likely to its roots as well, during construction activities. Many trees are showing signs of construction-related stress on this site. Future developments would benefit from instructions on the methods for successfully preserving trees during construction phases. Perhaps the City of Lake Oswego could provide educational information

to contractors when they receive construction permits. City staff visiting the site to ensure that standards and guidelines for construction are being met could examine how well trees at the site are being protected at the same time.

Tree groves are vulnerable to hydrologic changes. Oak trees are affected the most by alterations of hydrology. Saturating conditions kills the Oregon white oak. Several dozen Oregon white oaks of 100 years old or older have died on Site W15, West Waluga Park, on an old Clackamas County fill site which is now owned by the City. A sewer line located near the bases of the trees has altered the hydrology. The ground is saturated now and pools of water have been created supporting dense cattails and rushes. Excessive saturation of the root zones has probably killed the oaks. Some mechanical damage to the roots in excavation for the sewer line may also have been a factor in their mortality. Oaks are also vulnerable to irrigation. For example when lawns are planted beneath them, they usually die due to the wetter conditions that accompany watering the lawn. With careful planning, future losses like these can be avoided.

Exotic, nuisance plant species that have invaded all of the forest sites inventoried to greater or lesser degree are the shrubs English holly, laurel, and red hawthorn, and the vines English ivy and clematis. The vines are the most serious problem because they cover and shade out native plant species and form monotypic blankets. Control measures are absolutely necessary or wildlife populations will suffer as food and cover resources are reduced. Potential control measures could include a Nuisance Plant Ordinance to prohibit planting of English ivy in landscaping and mechanical or other means of eradicating or controlling growth already established on selected sites.

#### Policy Recommendations: Upland Tree Groves

- **Tree groves adjacent to wetland/water resources should be given priority for protection.**
- **Large tree groves should be protected from fragmentation (TG-28, TG-14)**
- **Diversity of plant community types should be preserved.**
- **Tree groves consisting of high quality vegetation, dominated by native species, should be given priority for protection**
- **The City of Lake Oswego should create construction guidelines for the protection of trees during site construction. Contractors should be provided with specific guidelines to follow.**
- **Tree Grove resources should be identified by interpretive materials. Significant tree groves should be marked by interpretive signage that indicates the "special" nature of the sites. A Lake Oswego natural resource site logo could be developed and incorporated into signs, brochures and other materials to enforce the concept of a natural resource system throughout the City.**

- **Habitat restoration guidelines should be developed and made available to the public and land owners/developers.** The City should provide guidelines concerning the eradication of pest plants and the restoration of native plant species to upland areas.
- **A nuisance plant ordinance should be established to control the introduction and spread of non-native nuisance plants, such as English ivy and Himalayan blackberry.** English ivy should not be planted adjacent to forests and stream corridors. Existing populations of English ivy and Himalayan blackberry should be controlled and/ or eradicated.
- **Oak trees need protection from changes in hydrology.** Proposed development near and within forested oak woodlands should be carefully reviewed to prevent increased watering of the site and compaction of soils. The understory should be planted with appropriate native plants that do not require irrigation.

#### 4.2.2 Mt. Sylvania

Mt. Sylvania is a major viewpoint for the City of Lake Oswego. The viewing area is landscaped with grasses and English ivy. This site can be improved for wildlife by removing the ivy and planting a wildflower meadow that would attract butterflies and songbirds.

#### 4.3 INDIVIDUAL TREES

The goals of maintaining as much of the natural landscape as possible, while at the same time allowing for continued development are often contradictory. Construction activities can indirectly affect the health and cause the mortality of trees designated to remain on a development site. Tree roots can be damaged by excavation and soil compaction. Tree trunks can be injured by large machinery scraping the bark away and exposing inner layers to insect or fungus infection. Hydrology can be altered by changes in drainage patterns. Some examples of these impacts are shown in photographs taken at an apartment complex site off Carman Drive and at 15000 SW Davis Lane (Appendix B).

Should a decision be made to designate certain trees in the City of Lake Oswego as "significant", it is important that adjacent property owners and developers be apprised of the protective measures that need to be taken if those trees are to remain healthy. On any site where existing trees are to be preserved during development, there should be particular attention given to the selection of the trees to be saved, their protection during construction activities, and their care following construction.

The City of Lake Oswego probably has hundreds of trees that merit designation as "significant" trees. This study focused mostly on the First Addition, one of the oldest parts of the city, where most of the older cultivated trees are probably found. In addition to these trees, however, there are many naturally-occurring trees that date back to the 1700's or even earlier and may be seriously threatened if insensitive development should occur in their vicinity. Most of these trees are found in the outlying and quickly urbanizing areas of the city and were not included in this survey. It would be wise for the City to consider doing an inventory of these trees.

Policy Recommendations for "Significance" Criteria:

**Significant trees must be in good health and include one or more of the following characteristics:**

- Exception size or age (relative to species)
- Rare species in the area
- Historical importance
- Served as a landmark

## 5. CONCLUSION

This inventory identified and evaluated the natural resources within the City of Lake Oswego's Urban Growth Boundary as the first phase of the Goal 5 process. It should be remembered that the score given each site is an evaluation of the wildlife habitat and does not include a numerical rating of other values of the site such as educational potential or water quality. The scores are relative and may be used to compare sites within the same resource category. All values of a site must be considered in determining the overall significance of a site and whether the site should be protected. The next step in the Goal 5 process is to assess conflicting uses of these resources and then to develop a program to protect and enhance them.

Wetlands and water resources should be protected and enhanced. Water is critical to all wildlife species. It must be of good quality and accessible. All wetlands should be protected. Low value wetland/water resources could be enhanced by improving water quality, removing invasive plants, and planting native vegetation. Generally, wetlands and water resources should be buffered with screening vegetation. Stream corridors should be protected by setbacks that leave forest on steep banks and prohibit vegetation clearing to the edge of the top of bank. Leaving an additional 10 feet of vegetation from the break in slope at the top of bank away from the stream would add to the protection of the water quality and wildlife habitat of a stream corridor.

Tree groves should be preserved where possible, particularly where hundred-year-old trees are located. All groves adjacent to wetlands and stream corridors should be protected. Large forest stands should be protected from fragmentation. Many of the large forested areas in the study area are found on steep slopes. These slopes will receive increasing pressure to be developed. Besides erosion and landslide hazards development can promote, viewsapes and significant wildlife habitat will be lost.

Links between uplands and wetland/water resources should be protected and created to provide travel corridors for wildlife. Black-tailed deer, an uncommon urban species, occur in some of the larger sites, TG-3, TG-26, TG-27, and TG-28, indicating an existing network of natural areas that can support their movements and habitat needs. To preserve urban deer populations, as well as many other wildlife species, it is important to preserve and create habitat links that enable wildlife species to access food, water, cover and safe passage.

The City of Lake Oswego needs to create policies that will protect its natural resources. It could adopt Construction Guidelines that are aimed at protecting root zones from compaction and other damage to large, significant trees and prevents alteration of hydrology. The City could adopt a Nuisance Plant Ordinance to prevent the use of English ivy, purple loosestrife, and other invasive plant species in future landscaping to control their spread. Finally, the City could consider a yard debris collection or composting program to prevent illegal dumping of yard material in open space areas.

## **6. PROJECT STAFF**

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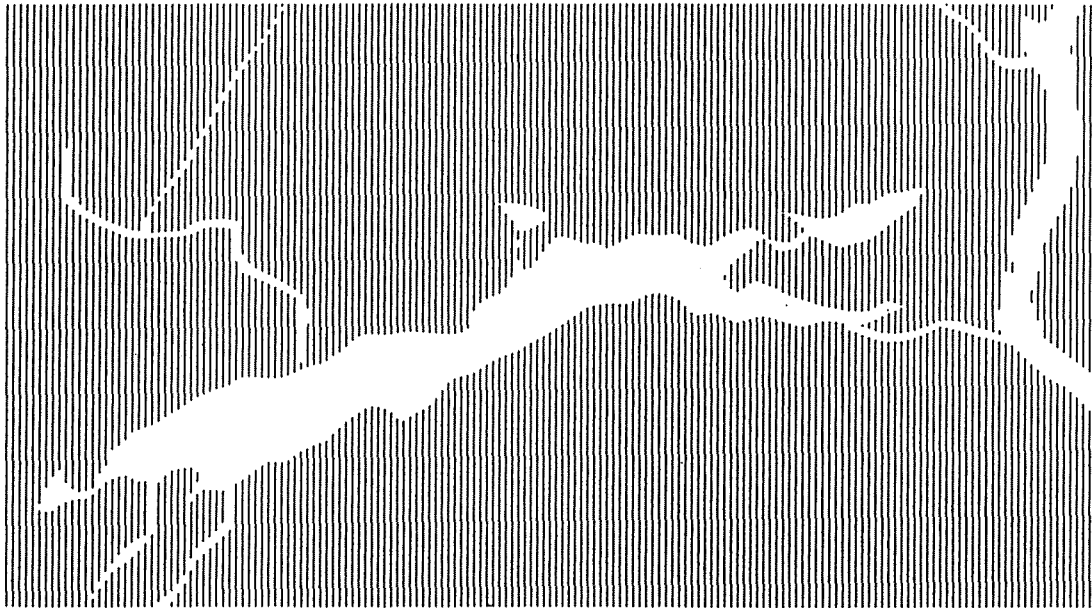
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Red-legged frog and turtle inventory

ex.cerpt

# INVENTORY OF NATURAL RESOURCES

CITY OF LAKE OSWEGO



## VOLUME III:

APPENDIX C FORMS AND INSTRUCTIONS

APPENDIX D WETLAND DATA

APPENDIX E UPLAND DATA

Prepared for The City of Lake Oswego Planning Division

Prepared by Fishman Environmental Services

December, 1991

## WILDLIFE HABITAT ASSESSMENT

SITE NUMBER	LOCATION	ACRES	PHOTO #	SEC MAP NO	SCORE		
Observer: _____		Date: _____		Habitat Class: _____			
Comments: _____							
Enhancement recommendations: _____							
Component		Degree			Existing Score	Restored Score	Comments
WATER	Quantity & Seasonality	none 0	seasonal 4	perennial 8			
	Quality	stagnant 0	seasonal flushed 3	contin. flushed 6			
	Proximity to Cover	none 0	nearby 4	imm. adjacent 8			
	Diversity (Streams, Ponds & Wetlands)	(1) present 0	(2) present 4	(3) present 8			
FOOD	Variety	low 0	medium 5	high 10			
	Quantity & Seasonality	none 0	limited 4	year-round 8			
	Proximity to Cover	none 0	nearby 4	imm. adjacent 8			
COVER	Structural Diversity	low 0	medium 5	high 10			
	Variety (Nesting, Denning)	low 0	medium 4	high 8			
	Seasonality	none 0	limited 2	year-round 4			
	Escape (Density)	low 0	medium 2	high 4			
ADDITIONAL VALUES							
DISTURBANCE	Biological	high 0	medium 2	low 4			
	Human	high 0	medium 2	low 4			
HABITAT LINKAGE		low 0	medium 3	high 6			
UNIQUE FEATURES (0—4 points each)		Wildlife _____ Flora _____ Nesting _____					
		Educ. potential _____ Hab. stability _____					
		Rarity of habitat type _____ Scenic _____					



I. SITE FEATURES

Topography:

Water Features:

Major Structures or Roads:

Garbage:

II. VEGETATION (\* = Dominate Species > 20%)

TREE SPECIES

SHRUB SPECIES

HERB SPECIES

WETLAND

SNAGS:

III. WILDLIFE Species/Sign Observed

BIRDS

MAMMALS

HERPTILES

OTHER

IV. MANAGEMENT RECOMMENDATIONS

## WILDLIFE HABITAT ASSESSMENT FORM

The Wildlife Habitat Assessment data sheet is a modified version of the data sheet used by the Cities of Portland and Beaverton when they updated their comprehensive plans. The form is divided into three parts.

The first presents general site information: Unit no., Location, approximate Acres, Score, Observer, Date, Habitat classification, and comments.

The second part consists of three essential wildlife habitat requirements: water, food, and cover. Each of these components is sub-divided into a number of aspects and rated.

**WATER** is of critical importance to all wildlife species and permanent water is the only place where some species can survive and reproduce.

**Quantity and Seasonality:** A permanent water source provides water year-round for a variety of wildlife species. Seasonal water limits wildlife use.

**Quality:** Continually flushed water is usually cleaner than stagnant water and usually contains greater concentrations of dissolved oxygen. Deficiencies in dissolved oxygen can severely limit aquatic species diversity.

**Proximity to Cover:** Wildlife will use water more readily if it is close to vegetative cover. This allows escape from predators and protection from weather extremes. A canopy over water shields the water from the sun preventing thermal rises in water temperature.

**Diversity:** A site with a mixture of wetland, stream, and pond or lake has higher wildlife value than a site with only one of these features.

**FOOD** is a basic requirement for all wildlife. The greater the variety and quantity of food, the greater the potential for attracting diverse wildlife species.

**Variety:** Food was categorized into five types: browse, berries, seeds, nuts, and invertebrates. If five types of food were present, the site received ten points. If three types of food were present, the site received four or five points.

**Quantity and Seasonality:** Sites having large quantities of food available year-round received a high value of eight points. Sites with little or no food available, received a value of zero.

**Proximity to Cover:** The presence of adjacent cover to a foraging site provides protection for foraging wildlife.

**COVER** is a basic requirement for all wildlife. It protects them while they drink, forage, reproduce and rest.

**Structural Diversity:** There are potentially five layers of vegetation: 1. grasses, sedges, forbs ... 2. blackberries, ferns, Oregon grape, snowberry... 3. elderberry, Indian plum, red-osier dogwood... 4. hazelnut, Oregon ash, willow... 5. black cottonwood, Douglas fir, Oregon white oak... If one layer is present, structural diversity is low and receives two points. If three layers are present, structural diversity is medium and receives 6 points. If five layers are present, the site receives 10 points.

**Variety:** A variety of cover types improves wildlife protection. An area having a wide variety of cover such as a forested wetland with Oregon ash, willow, spirea, sedges, rushes and smartweed will be more valuable to wildlife than an area having a monoculture of reed canarygrass.

**Seasonality:** Cover will benefit wildlife more if it is present year-round. Year-round cover refers to evergreens and dense shrubbery.

**Escape:** Escape is a function of density of cover.

The third part of the form includes values in addition to food, water, and cover. The components examined include disturbance, interspersions, and unique features.

**DISTURBANCE** is biological and human.

**Biological disturbance** includes invasive weedy species such as blackberry, loosestrife, and reed canarygrass that prevent growth of native plant species. It also includes agricultural disturbances of cultivation and grazing.

**Human disturbance** includes garbage accumulation and domestic animal use. It can be very detrimental to wildlife.

**HABITAT LINKAGE** refers to the connectivity of the site to other natural and open space areas. It provides wildlife space to travel and disperse. Isolated sites surrounded by roads, fences, railroads, or developments have a low linkage value and are less valuable to wildlife than contiguous sites with high linkage values.

**UNIQUE FEATURES** includes sensitive wildlife and plant species, rarity of habitat, educational potential, habitat stability, significant nesting habitat, and scenic quality.

**WETLANDS INVENTORY :  
WETLAND FUNCTIONS  
ASSESSMENT**

UNIT NO.	LOCATION	ACRES	
OBSERVER:		DATE:	NWI CLASSIFICATION:
COMMENTS:			

(circle the appropriate rating)

				<u>comments</u>
1. ACTIVE RECREATION	H	M	L	
2. PASSIVE RECREATION	H	M	L	
3. ENDANGERED SPECIES	H	M	L	
4. "UNIQUENESS/RARENESS"	H	M	L	
5. WILDLIFE HABITAT	H	M	L	
6. FISHERIES HABITAT	H	M	L	
7. FOOD CHAIN SUPPORT	H	M	L	
8. NUTRIENT RETENTION/REMOVAL	H	M	L	
9. SEDIMENT TRAPPING	H	M	L	
10. FLOOD STORAGE/DESYNCH.	H	M	L	
11. GROUNDWATER MODIFICATION	H	M	L	
12. SHORELINE STABILIZATION	H	M	L	



# APPENDIX 1

CLASS OF WETLAND FUNCTION (FROM EPA CORVALLIS WKSHT)	QUALITATIVE COMPONENTS OF WETLAND FUNCTION	SITE SPECIFIC IMPORTANCE OF FUNCTION	NOTES/SOURCE INFORMATION
Active Recreation <u>ACTV</u> (Consumptive characteristics; may inhibit other functions) in or on Waters of the U.S. such as: Fishing Food Gathering Swimming Boating	(A) Activity is wetland dependent? A wetland or tideland must be present to perform the activity and has a history of use by recreators. i.e. tideflats for clamming, presence of waterfowl et al.  <u>OR</u>		
	(B) Activity is open water dependent? i.e. boating, swimming, et al.  YES --> NO; GO TO C	HIGH	
	(C) The area has potential for water/wetland dependent uses by recreators, but is not actively used due to factors such as geographic isolation.  YES --> NO; GO TO C	MODERATE	
	(D) The site is used for activities not water or wetland dependent.	LOW	
2. Passive recreation/ heritage value <u>PASS</u> (Non-consumptive; tends not to inhibit other functions)	(A) Activity/value is wetland/ water dependent? i.e.: <ul style="list-style-type: none"> <li>◦ Waterfowl/shorebird watching</li> <li>◦ Scientific study/education</li> <li>◦ High Aesthetic value (known picnic, camping, birdwatching site)</li> <li>◦ Belongs to, or is eligible of National Registry for Natural Landmarks, et al.</li> </ul> YES --> NO; GO TO B	HIGH	
	(B) The site is used for activities which are water dependent to some degree or have some degree of aesthetic value but to a lesser degree than other similar wetland habitats known to the reviewer.	MODERATE	
	(C) The site was unlikely to have had passive recreation or aesthetic values or have been used for scientific or educational purpose.	LOW	
3. Endangered Species <u>ENDS</u>	(A) Provides Seasonal or year round habitat for endangered or threatened species? i.e. nesting/spawning/migration feeding/rearing et al.  YES --> NO; GO TO B	HIGH	
	(B) Wetland was adjacent to or near enough to and/or similar to known endangered species habitat so that it could support species of concern, however, sightings had not been reported.		

CLASS OF WETLAND FUNCTION  
(FROM EPA CORVALLIS WKSHT)

QUALITATIVE COMPONENTS OF  
WETLAND FUNCTION

SITE SPECIFIC  
IMPORTANCE OF  
FUNCTION

NOTES/SOURCE  
INFORMATION

	YES --> NO; GO TO C	MODERATE
	(C) Not considered important habitat for endangered species	LOW
4. *Uniqueness/ (rareness of wetland (UNIQ))	(A) Wetland is in urban area?	
	<u>OR</u>	
*Added function not from EPA Corvallis Worksheet	(B) Loss of wetland has resulted in adverse environmental effects on adjacent wetlands or wetlands hydrologically linked to the subject wetland (cumulative effects)	
	<u>OR</u>	
	(C) The type and/or size of the wetland is relatively rare or unique to the area? i.e. estuarine wetlands, riparian wetlands, bogs et al.	
	<u>OR</u>	
	(D) High diversity of wetland types or stages of wetland succession are in close juxtaposition?	
	<u>OR</u>	
	(E) Wetland has unique geologic characteristics or is known to contain archaeological evidence, or be of historical importance?	
	YES --> NO; GO TO F	HIGH
	(F) Exhibits some degree of aforementioned qualitative components, but to a lesser degree than other similar wetland habitats known to the reviewer.	
	YES --> NO; GO TO G	MODERATE
	(G) Wetland was isolated, common in type and size, and without distinguishable characteristics? For example, seasonal wet pasture or Reed Canary grass stands.	LOW

5. Wildlife habitat <u>WILD</u>	(A) Wetland exhibited a relatively high degree of structural diversity? i.e. °presence of 3+ distinct communities °diversity of edges °variation in height °both open water and emergent systems present (lakes, streams, ponds, etc.)	
	<u>OR</u>	
	(B) Wetland was inhabited by rare, restricted, or relict flora or fauna	

CLASS OF WETLAND FUNCTION (FROM EPA CORVALLIS WKSHT)	QUALITATIVE COMPONENTS OF WETLAND FUNCTION	SITE SPECIFIC IMPORTANCE OF FUNCTION	NOTES/SOURCE INFORMATION
	YES --> NO; GO TO C	HIGH	
	(C) Wetland was composed of a single community that was capable of supporting relatively large numbers of species or large populations, i.e., eelgrass, bull-rush, sedge meadows	HIGH	
	(D) Wetland exhibits some degree of the aforementioned qualities but to a lesser degree than other similar wetland habitats known to the reviewer?		
	<u>OR</u>		
	(E) The wetland has large <u>potential</u> to serve as habitat		
	YES --> NO; GO TO E	MODERATE	
	(F) Wetland consists of monospecific, or nearly so, stands of vegetation with low wildlife value (reed canary grass, soft rush et al.)	LOW	
6. Fisheries habitat (A) <u>FISH</u>	Wetland provided habitat/ intermittent habitat (including migration routes, nursery grounds, feeding habitat et. al.) for any life stage of commercial and/or sport fisheries species. i.e. salmonids steelhead/trout shellfish et al.		
	YES --> NO; GO TO B	HIGH	
** Factors to be considered: Hydroperiod Water Quality Substrate Adjacency Vegetation Depth Shading Pools/Riffles et al.	(B) Wetland had sufficient habitat quality and location to potentially provide habitat for fisheries species.**		
	YES --> NO; GO TO C	MODERATE	
	(C) Wetland was isolated or did not have habitat quality or location to provide potential habitat/periodic habitat for fisheries species	LOW	
7. Food chain support <u>FOOD</u>	(A) Wetland provided important food species for commercially important species.		
	<u>OR</u>		
*Export efficiency is a function of the hydroperiod (frequency of inundation), the relative ele-	(B) Wetlands were capable of effectively *exporting detritus and nutrients to riverine or marine systems through regular flushing		
	<u>OR</u>		

CLASS OF WETLAND FUNCTION (FROM EPA CORVALLIS WKSHT)	QUALITATIVE COMPONENTS OF WETLAND FUNCTION	SITE SPECIFIC IMPORTANCE OF FUNCTION	NOTES/SOURCE INFORMATION
vation of the wetland (low water level vs. high water level), and the relative net primary production of the vegetation	(C) Secondary production of the wetland was high. There was a large transfer of primary produced energy into grazers. Indicator features: large populations of fish, shellfish, waterfowl, and/or wildlife.	HIGH	
	YES --> NO; GO TO D		
	(D) Wetlands were capable of exporting nutrients to riverine or marine systems but the opportunity was limited due to sporadic or intermittent flood regimes.		
	<u>OR</u>		
	(E) Secondary production or the production of important food chain species occurred to some degree but to a lesser degree than other similar wetland habitats known to the reviewer.	MODERATE	
	YES --> NO; GO TO F		
(F) Small, isolated wetlands without significant secondary production or ephemeral streams	LOW		
8. Nutrient retention removal <u>NUTR</u>	(A) The wetland was regularly flooded i.e. semi diurnal intertidal or perennial riverine		
	<u>AND</u>		
	The wetland was densely vegetated		
	<u>OR</u>		
	(B) The wetland was large relative to the subwatershed		
	<u>OR</u>		
	(C) Wetland exhibited a predominance of sheetflow (overland flow) vs. channelized flow	HIGH	
	YES --> NO; GO TO D		
	<u>OR</u>		
	(D) The wetland was downstream from significant sources of nutrients and/or urban runoff i.e. organic matter/timber harvest runoff livestock/agricultural runoff sewer overflows impervious surface runoff waste products discharge et al.		
<u>OR</u>			
Upstream from sensitive aquatic areas i.e. Fish rearing areas Swimming areas Drinking water source et al.			

CLASS OF WETLAND FUNCTION (FROM EPA CORVALLIS WKSHT)	QUALITATIVE COMPONENTS OF WETLAND FUNCTION	SITE SPECIFIC IMPORTANCE OF FUNCTION	NOTES/SOURCE INFORMATION
	<p><u>OR</u></p> <p>(E) The wetland was a significant sink for nutrients i.e. peat accumulation</p> <p>YES --&gt; NO; GO TO F</p> <p>(F) Some degree of the aforementioned characteristics are evident in the wetland, but to a lesser degree than other similar wetland habitats known to the reviewer.</p> <p><u>OR</u></p> <p>(G) The wetland was irregularly or intermittently flooded</p> <p><u>AND</u></p> <p>wetland vegetation was relatively dense</p> <p>Yes --&gt; No; go to H</p> <p>(H) The wetland was relatively small, sparsely vegetated, ephemerally flooded, was not downstream from major nutrient sources, and was not upstream from sensitive aquatic areas/usage</p>	<p>HIGH</p> <p>MODERATE</p> <p>LOW</p>	
9. <u>SEDI</u>	<p>(A) The wetland serves to slow the velocity of water flow but does not experience substantial erosion. i.e. eddy occurrence, flow is through relatively dense vegetation, overland (or sheet flow) vs. channelized flow</p> <p><u>OR</u></p> <p>(B) The wetland was physically capable of storing large quantities of disturbed sediments—for example, the wetland was comparatively large with a high emergent wetland to open water ratio.</p> <p><u>AND</u></p> <p>There were significant upstream sources of sediment i.e. steep slopes, erosion prone land use, mountain basins et al.</p> <p>YES --&gt; NO; GO TO C</p> <p>(C) Some degree of (A) and/or (B) was observed, but to a lesser degree than other similar wetland habitats known to the reviewer.</p> <p>YES --&gt; NO; GO TO D</p>	<p>HIGH</p> <p>MODERATE</p>	

CLASS OF WETLAND FUNCTION (FROM EPA CORVALLIS WKSHT)	QUALITATIVE COMPONENTS OF WETLAND FUNCTION	SITE SPECIFIC IMPORTANCE OF FUNCTION	NOTES/SOURCE INFORMATION
	(D) Flow velocity was not reduced through wetland, sediment storage capacity was small, or few sources or potential sources of upstream sediment exist	LOW	
10. Flood storage/ desynchronization <u>FLOOD</u>	(A) The wetland occupied a position in the watershed that was important for dissipating or storing runoff, i.e. upper elevation riverine or palustrine		
	<u>OR</u>		
	Where the upslope areas had a low or reduced capacity to absorb or dissipate runoff i.e. steep slopes sparsely vegetated slopes slopes with low soil permeability		
	YES --> NO; GO TO B	HIGH	
	(B)		
	The wetland had a relatively large storage capacity relative to the size of the subwatershed. i.e. ° above ground storage °(seasonal flood plain et al. area x depth), subsurface or groundwater storage (dependent on depth to watertable, soil porosity, soil saturation et al.)		
	YES --> NO; GO TO C	HIGH	
	(C) The vegetative cover of the wetland offered a high degree of resistance to water flow reducing flow velocities i.e. consider type of vegetation, density of vegetation, type of flow, channel dimensions et al.		
	YES --> NO; GO TO D	HIGH	
	(D) Some degree of the aforementioned characteristics were evident but to a lesser degree than other similar habitats known to the reviewer.		
	YES --> NO; GO TO E	MODERATE	
	(E) Wetlands in that were in relatively small subwatersheds, wetlands with small storage capacity, wetlands that were groundwater discharge areas during wet seasons, wetlands with upslope areas that had large capacity for absorbing/dissipating runoff	LOW	
11. Groundwater Modification <u>GRWT</u>	(A) Freshwater wetlands with high soil porosity/permeability or known areas of groundwater discharge/recharge		

CLASS OF WETLAND FUNCTION (FROM EPA CORVALLIS WKSHT)	QUALITATIVE COMPONENTS OF WETLAND FUNCTION	SITE SPECIFIC IMPORTANCE OF FUNCTION	NOTES/SOURCE INFORMATION
	<u>OR</u>		
	(B) Wetlands were connected to a sole source aquifer.		
	YES --> NO; GO TO C	HIGH	
	(C) Freshwater wetlands that were large and were strongly linked to other freshwater systems		
	YES --> NO; GO TO D	HIGH	
	(D) Freshwater wetlands that exhibited some degree of the above characteristics, but to a lesser degree than other similar wetland habitats known to the reviewer.		
	YES --> NO; GO TO E	MODERATE	
	(E) Salt or brackish wetlands, wetlands that were part of relatively small subwatersheds, relatively small or isolated wetlands surrounded by area with small water demand/supply ratio		
		LOW	

12. Shoreline Stabilization

- (A) The surrounding upland/adjacent wetland is vulnerable to erosion, littoral drift  
i.e. steep banks, banks with sparse vegetation, valuable upland/adjacent wetland

AND

Wetland characteristics provided relatively high degree of frictional resistance thereby slowing flow velocities i.e. wetland was relatively wide, vegetation was permanent, large, rigid, or has effective root depth

YES -->  
NO; GO TO B

HIGH

- (B) Some degree of the above characteristics were evident

YES -->  
NO; GO TO C

MODERATE

- (C) There is a low probability that the wetland performed the function. i.e., isolated wetlands in areas not subjected to significant erosion (areas with little or no surface water).

LOW

**APPENDIX D**

**NATURAL RESOURCE FIELD DATA INDEX: WETLAND/WATER RESOURCES**

**WETLAND DATA SHEETS**

**WETLANDS INVENTORY :**  
**WETLAND FUNCTIONS**  
**ASSESSMENT**

UNIT NO. W-1.	LOCATION Boonesferry R&R	ACRES	
OBSERVER: CG		DATE: 9-10-91	NWI CLASSIFICATION:
COMMENTS:			

(circle the appropriate rating)

				<u>comments</u>
1. ACTIVE RECREATION	H	M	(L)	
2. PASSIVE RECREATION	H	M	(L)	<i>access limited</i>
3. ENDANGERED SPECIES	H	M	(L)	
4. "UNIQUENESS/RARENESS"	H	(M)	L	<i>wetland</i>
5. WILDLIFE HABITAT	H	(M)	L	
6. FISHERIES HABITAT	H	M	(L)	
7. FOOD CHAIN SUPPORT	H	M	(L)	<i>isolated pond</i>
8. NUTRIENT RETENTION/REMOVAL	H	(M)	L	
9. SEDIMENT TRAPPING	(H)	M	L	
10. FLOOD STORAGE/DESYNCH.	(H)	M	L	<i>Storage capacity</i>
11. GROUNDWATER MODIFICATION	H	M	(L)	
12. SHORELINE STABILIZATION	H	M	(L)	



WILLOW LANE WETLAND WILDLIFE HABITAT ASSESSMENT

SITE NUMBER	LOCATION	ACRES	PHOTO #	SEC MAP NO	SCORE		
W-1	Boonesterry + RXR	1	F20+21	18	61/89		
Observer: JB + CG		Date: 9/10/91		Habitat Class: Pond			
Comments: Submersed veg. 80%: 20% water; Numerous birds throughout (Nutria) High food storage, High Sed trapping							
Enhancement recommendations: Remove Himalayan Blackberry & replace w/ native shrubs & trees							
Component	Degree			Existing Score	Restored Score	Comments	
WATER	Quantity & Seasonality	none 0	seasonal 4	perennial 8	8	8	Water 2-2.5'
	Quality	stagnant 0	seasonal flushed 3	contin. flushed 6	3?	3?	Potential degradation from RXR + Road
	Proximity to Cover	none 0	nearby 4	imm. adjacent 8	6	8	
	Diversity (Streams, Ponds & Wetlands)	(1) present 0	(2) present 4	(3) present 8	4	4	
FOOD	Variety	low 0	medium 5	high 10	7	10	submersed veg, insect seeds
	Quantity & Seasonality	none 0	limited 4	year-round 8	6	8	
	Proximity to Cover	none 0	nearby 4	imm. adjacent 8	6	8	
COVER	Structural Diversity	low 0	medium 5	high 10	5	10	
	Variety (Nesting, Denning)	low 0	medium 4	high 8	4	8	
	Seasonality	none 0	limited 2	year-round 4	2	4	No evergreens - dense thickets
	Escape (Density)	low 0	medium 2	high 4	2	4	
ADDITIONAL VALUES							
DISTURBANCE	Biological	high 0	medium 2	low 4	0	4	RCG + HBB very dense
	Human	high 0	medium 2	low 4	4	4	
HABITAT LINKAGE	low 0	medium 3	high 6	0	0	sandwiched between RXR + Boonesterry	
UNIQUE FEATURES (0-4 points each)	Wildlife <input checked="" type="checkbox"/> Flora _____ Nesting <input checked="" type="checkbox"/>				4	4	
	Educ. potential _____ Hab. stability _____						
	Rarity of habitat type _____ Scenic _____						

# I. SITE FEATURES

Topography: Flat, open

Water Features: Pond;

Major Structures or Roads: Adjacent to R/R + Boonesferry

Garbage: 0

# II. VEGETATION (\* = Dominate Species > 20%)

<u>TREE SPECIES</u>	<u>SHRUB SPECIES</u>	<u>HERB SPECIES</u>	<u>WETLAND</u>
Willow - 2sp Black Cottonwood	Spiraea Hazel	* RCG * Himalayan BB JA EF	* duckweed Scirpus (soft bulrush?) * RCG Sparganium emersum (simplex) * potamogeton natans * Elodea densa * Hydrocotyle ranuncul marsh pennywort Lemna minor
SNAGS: 4 BCottonwood - clustered together - Kingfisher perch ~10 stumps - used by ducks for perching 1 dog			

# III. WILDLIFE Species/Sign Observed

<u>BIRDS</u>	<u>MAMMALS</u>	<u>HERPTILES</u>	<u>OTHER</u>
2 little green herons great blue heron 3 mallards Kingfisher Am Goldfinch Song Sparrow BC chickadee	Nutriae good forage		Gambusia (numerous) (Heron food) No frogs, tadpoles observed.

# IV. MANAGEMENT RECOMMENDATIONS

Runoff contaminants - reduce water qual.  
No spraying along tracks - alternatives to spraying  
Carwash - pre-treatment Flail chopping  
before entering ditch.



8 SEP 94 8:42

-STATE LANDS- Janet

DEPARTMENT OF PLANNING AND DEVELOPMENT

MEMORANDUM

To: Lake Oswego Planning Commission Members  
From: Catherine Clark, Associate Planner  
Date: August 31, 1994  
Subject: ESEE Study - Progress Report

**BACKGROUND:**

On March 15, 1994 the City Council authorized the Planning Department to hire a consultant to conduct an inventory and ESEE (Economic, Social, Environmental, and Energy) analysis of 83 wetlands and tree groves within the Urban Services Boundary. Winterrowd Planning Services (WPS) and Salix Associates were hired to conduct the study. On July 19, 1994 the City Council added stream corridors to the WPS contract. There are approximately 95 stream corridor sites that need to be evaluated. The field inventory work for wetlands and tree groves is 63% complete at this time (52 of the 83 sites have been field inspected). The entire project is to be completed by February 15, 1994.<sup>52</sup>

The inventory and ESEE study are being conducted because Lake Oswego's development standards that regulate wetlands and streams are out of date and somewhat difficult to interpret. Development standards for tree groves and Distinctive Natural Areas (DNAs) do not exist as separate sections of the Development Ordinance. Before these development standards can be modified and adopted, a site-specific inventory and ESEE study must be conducted as required by Statewide Planning Goal 5.

The products to be provided by the consultant will include:

- Inventory field sheets and maps of each resource site.
- An ESEE analysis for each resource site.
- Draft tree grove protection standards.
- Recommendations for other development standards

**HOW THE INFORMATION WILL BE USED**

The inventory information being gathered in the field includes the location, quality, and quantity (acreage) of resources and their areas of impact. The consultants will note the zoning and surrounding land uses, including "conflicting uses" which may negatively impact the resource. They will also note how the resource area may impact surrounding land uses. The resources will be compared and scored to ascertain relative values or significance. This information will be used

to form recommendations on the appropriate level of protection or regulation for each resource site. The range of protections may vary between fully allowing the conflicting use to preserving the resource site in its original character.

Property owners and the general public will be notified throughout the inventory and ESEE process, and will have a chance to comment on consultant recommendations and to participate in public meetings and hearings.

### **REVIEW PROCESS**

Exhibit A shows how the overall review process will work for the inventory and ESEE study. Beginning in March of 1994, property owners and interested parties were notified that the study had begun, and permission was requested for WPS/Salix to conduct site inspections. The first public meeting was held in May for wetland and tree grove properties, and three more public meetings will be scheduled between November and January, prior to the first public hearing before the Planning Commission. It is proposed that the Commission hold a work session in December, and two public hearings in January, 1995. The first hearing will be to consider ESEE recommendations on wetlands, streams, and tree groves. The second hearing will be to consider the adoption of new and revised development standards and to forward a recommendation to the Council. The City Council will hold a single hearing on the ESEE and development standards in February, 1995 (see Exhibit B).

Draft development standards will be prepared concurrent with the inventory, for wetlands, stream corridors, and DNAs. The standards will be presented to the Natural Resources Advisory Board and to the public prior to the Planning Commission hearings. It is proposed that the City Council will review and adopt the standards in February, 1995. [The Department of Land Conservation and Development (DLCD) will be kept apprised of the ESEE and development standards changes throughout the process, and will be notified before and after the public hearings are held.]

### **NEXT STEPS**

Inventory and ESEE work will be ongoing from September through December of 1994, and several public meetings will be held during this period as well. The Planning Commission will continue to receive periodic progress reports during this time.

### **EXHIBITS**

1. Chart - Lake Oswego Goal 5 Inventory and ESEE Process
2. ESEE 6 Month Timeline

c: DLCD (Jim Sitzman, Frank Flynn)  
City Council c/o City Manager  
NRAB, PRAB  
DSL  
Neighborhood Associations

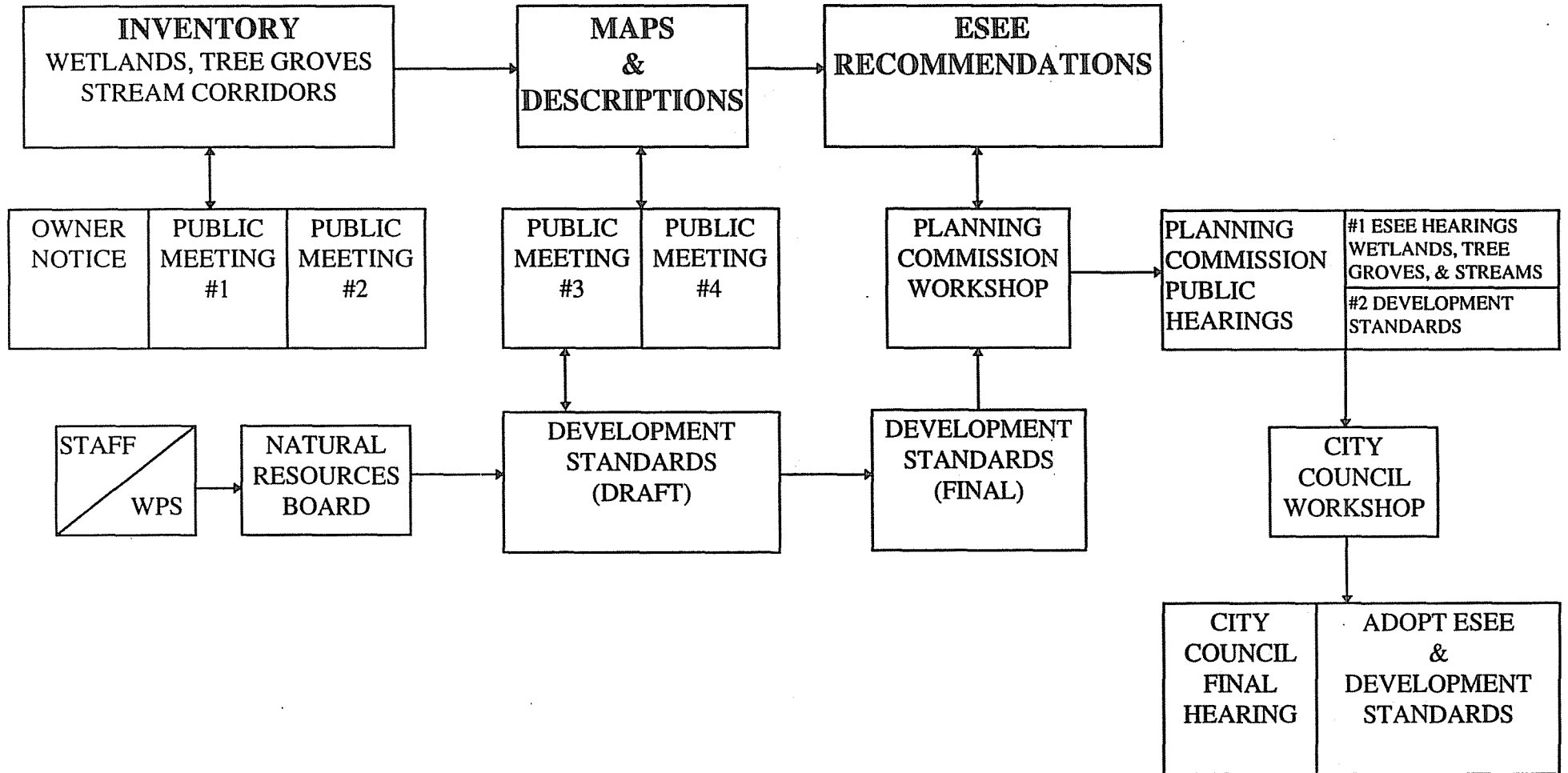
c:\eseezprog2.rpt

Exhibit 1

LAKE OSWEGO GOAL 5 INVENTORY & ESEE PROCESS

8/22/94

Begin  
March, 1994



Complete  
February, 1995



Done  
Prior to our rules  
**LWI CHECKLIST FOR DSL APPROVAL**

Comparison w/ rules → general acceptability for Goals

AREA: Lake Oswego

Conducted By: Fishman / for Goals 5 in 1992 Date Draft Rcvd: \_\_\_\_\_

Date Final Rcvd: \_\_\_\_\_

NWI Quad(s): Lake Oswego

**Final Acceptance:**

Date LWI Accepted by DSL: \_\_\_\_\_ By: \_\_\_\_\_

Date LWI Adopted by Local Government: \_\_\_\_\_

0 = needed to meet rules

**A) Required Information Sources**

- NWI 2
- Soils survey 2
- SCS wetland determinations (if available) —
- FEMA maps (if applicable) —
- Other wetlands inventories or habitat maps as available 1976 Physical Resources Inventory
- Resource agencies: \_\_\_\_\_
- DSL WETDET database —
- Airphotos — metro infrareds

**B) Optional Information Sources**

- ASCS slides
- Local knowledge
- Natural Heritage maps
- Other: mailings to citizens; public mtgs; chance encounter

**C) Field Work**

- no — likely; no data sheets provided but they do exist; may be more a survey than full data collection (yes)
- 1989 Manual procedure followed for onsite wetland determinations
- Onsite Option:
  - All Wetlands verified (unless access denied) but only visually
- Offsite Option:
  - All wetland types groundtruthed
  - Sites with conflicting info checked
- Minimum Wetland Size of 0.5 acres met
- How substantiated: \_\_\_\_\_
- Wetlands Classified to Class level with special modifiers no but likely in sit summary
  - Water Regime Modifiers (optional)
- Adjacent classifications resolved to 0.1 acre
  - How substantiated: \_\_\_\_\_
- Comments/Needs: \_\_\_\_\_

**D) Final Maps -- Required Elements**

- Map Name handwritten
  - Roads & Railroads
  - Legend handwritten
  - Minimum scale of 1" = 800'
  - Property Boundaries (Onsite Option Only)
  - Watershed Boundaries (if any)
  - Months/year of Field Determinations in summary sheets
  - Symbology for Wetlands not Field Verified (if any) (one w/ no permission to enter)
  - Wetlands clearly drawn and individually coded
  - Geographical Reference: \_\_\_\_\_
- Scale Bar
  - Watercourses
  - Airphoto date & scale
  - Disclaimer

Comments/Needs: SA boundary clearly indicated - disclaimer

**E) Process Documentation**

- Procedures described in sufficient detail *N (close; would need more for a LWZ)*
- Dates and scales of source maps and airphotos used *N*
- Technical staff members & qualifications *✓*
- Field data sheets (w/code) for all field-verified wetlands?
- Description of mapping procedures used *# 4*
- Info needed: \_\_\_\_\_

**F) Wetland Summary Sheets**

- Wetland Code
  - PLS location
  - Classification(s)
  - Hydrologic basin *Table gives info*
  - Other: Photos; General description; Resource value ass't (BPJ); impacts/disturb. mgt. recommendations
  - Comments/Needs: \_\_\_\_\_
- Address or location
  - Size in Acres
  - Soil Type

**G) Study Area Summary Report**

- Total Acreage in Study Area (SA): \_\_\_\_\_
- Total Acreage of Wetlands in SA: \_\_\_\_\_
- Total Number of Wetlands in SA: \_\_\_\_\_
- Comments/Needs: \_\_\_\_\_

**H) Final Maps Provided to DSL**

- Stable Base
- Paper
- Diskette

**I) Landowner Notification**

Date Notified: \_\_\_\_\_

12/28/93

# Lake Oswego Inventory

- Includes WLS  $\approx$  deepwater habitats (ponds, lakes, streams)
- city notes 49 WLS sites; fishman report notes/mapped 93 sites (city dealing with all WLS  $\approx$  ponds  $\approx$  lake except stream-assoc. WLS)
- entire UGB
- Sites located via:
  - 1) 1976 Physical Resources Inventory (LORRZ) (most sites) - DNA's (distinctive natural areas) (37 of 93 wetland/waterbody sites were DNA's in the LORRZ)
  - 2) citizens via mailings, public mtgs
  - 3) "discovered" by field team

## - fieldwork Sept.-Dec. 1991 (fall-winter)

- each site "surveyed on foot" to determine veg., land features, water resources & condition; to rate existing values
- unclear if used 1989 WL data sheets or did any soil pits or veg sampling

- wildlife habitat Ass't (modified)

- WL sites also evaluated standard functions = 12 functions

- "not as rigorous" as WET 2

- BPJ ~~think~~ Info in Appendix A

Assessment

# of sites or wetlands =

Report = 27 ponds, 7 PEM, 14 PFO, 51 stream corridors = 100

but only 93 separate sites

w/o streams = 48 WLS

Stream corridors sometimes include associated wetlands

Q for Catherine = Which are the 49 WL sites  $\approx$  how selected (see 48 # above) all lake 49 all except stream-associated? must be.

Q for fishman = any (WL ID data) Noted in Appen. D (which I don't have) Any attempt by city to "collect" subsequent WL info not on map?

Overview =

> Pretty decent inventory for a Goal 5 inventory (1991)

> Unclear how attempted to find all WLS; i.e., NWI? Soil survey used?

> Good site descriptions etc. on summaries

> 49 WL sites do not include stream-assoc. WLS

> All WL ID are via observation w/ no soils data, veg sampling etc. - wasn't given data sheets (Appen. D) so don't know if are ID data or F/V data

> Ass't by BPJ but looks reasonable; didn't use WET or anything but more than just wildlife habitat; they are experienced

DIVISION OF  
STATE LANDS

Nov 1 9 35 AM '93



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DEPARTMENT OF PLANNING AND DEVELOPMENT

---

October 28, 1993

Janet Moreland  
Wetlands Inventory Specialist  
Oregon Division of State Lands  
775 Summer Street NE  
Salem, Oregon 97310

Dear Janet:

Please find enclosed a review copy of the 1992 Natural Resources Inventory prepared for the City of Lake Oswego by Fishman Environmental Services. My supervisor, Ron Bunch spoke with you earlier this week about reviewing this document, and it is my understanding that you can provide a response by December, 1993. The City is starting an ESEE analysis of wetlands identified in the Fishman data, and we need to find out from your office if the methodology used is acceptable as soon as possible. The City Council authorized funding for the ESEE study, and we are now in the process of defining the scope of work and hiring a consultant.

The inventory report prepared by Fishman is included to assist you in evaluating the methodology used. You may wish to speak with me about the methodology if you have any questions about it. The inventory included wetlands, stream corridors, tree groves and individual trees. The City is requesting that you limit your review only to the wetlands and lake sites inventoried for a total of 49 sites, including Oswego Lake. A map of the sites is enclosed, and individual maps of each site are included with each project description. More detailed topographic maps of each site are also available, should you need them.

The Planning Department is eager to get started with the ESEE study, and your prompt review would be greatly appreciated. Please give me a call after you have received the materials, and let me know if there is anything I can do to assist with your review (697-6576).

Sincerely,

Catherine Clark, AICP 697-6576  
Associate Planner

enclosures: Natural Resources Inventory Report and Map  
Appendix A- Inventory Data for Water Resources

c: Coffee, Bunch

ECONOMIC, SOCIAL, ENVIRONMENTAL AND ENERGY (ESEE)  
ANALYSIS OF INVENTORIED WETLANDS AND TREE GROVES  
LAKE OSWEGO, OREGON

DIVISION  
DEC 27 9 20 AM '93

**REQUEST FOR PROPOSALS**

**I. PROJECT SUMMARY AND PRODUCTS**

The City of Lake Oswego is seeking a qualified consulting team to:

1. Conduct an Economic, Social, Environmental, and Energy (ESEE) analysis of wetland sites and tree groves pursuant to Statewide Planning Goal 5 requirements, Oregon Revised Statutes and Administrative Rules. To date, the City has completed a Natural Resources Inventory (NRI) which has identified 83 wetland and tree grove sites. There are 49 wetlands and 34 tree groves within the study area shown on the attached map. Once an ESEE analysis is performed for the inventory, the City can proceed to adopt a draft wetland protection standard that was developed in 1992, and develop standards to protect tree grove sites.

Under Statewide Planning Goal 5, the City is required to conduct an ESEE consequences analysis of each inventoried site, including the identification of potential conflicting uses. The public and individual landowners must be afforded opportunities to participate in the analysis and designation of sites proposed for resource protection. Draft tree grove protection standards will be needed from the consultant, to be adopted after the ESEE process is completed.

2. Provide the following products and services:

a) Ensure completeness, adequacy and accuracy of Inventory data according to Goal 5 Administrative rules (OAR 16-000 through 16-020). This will require that the consultant:

- Verify the accuracy of existing tax map descriptions.
- Perform field checks to identify Areas of Impact for the 49 wetland sites and 34 tree groves, as required by OAR 660-16-000(2).
- Provide a map showing resource sites inventoried, their areas of impact, and their characteristics (forested wetland, emergent wetland, oak/madrone tree grove, etc.)
- Identify resources that should be considered ecologically and scientifically significant.
- Document potential resource sites that may have been missed for future study.

b) Conduct an ESEE and a Conflicting Use Analysis for each wetland and tree grove included in the Natural Resources Inventory. This will require that the consultant:

- Add the zone, Comprehensive Plan data sheet in the NRI, including the re
- Identify potential conflicting uses and development plans are known.
- Identify negative impacts that may occur protection program, using the ESEE n
- Recommend the level of protection that each site should have, based on the findings of the ESEE analysis.
- List all sites that "fall out" from consideration based on the ESEE.

So they've already decided  
all sites are significant<sup>2</sup> to each  
t.  
ses, where  
a  
005.

c) Produce a draft tree grove protection standard as an "implementing measure" of the Goal 5 program. Staff work necessary to propose the standard for public review and adoption will be a City responsibility.

d) Implement a Citizen Involvement Program as part of the Goal 5 process. This will require that the consultant:

- Provide participation opportunities both for citizens interested in general resource issues and individual land owners of potentially affected properties. The general public needs to have input on the completeness of the inventories done for the various sites. They also should have input on the levels of protection proposed, and protection programs, especially for tree groves.

Land owners need to be notified that the ESEE is being conducted. They need to assist in identifying conflicting uses, reviewing draft ESEE commentary, identifying impact areas, and verifying the precise boundaries of a resource.

- Conduct up to 3 workshops for the general public and affected parties; conduct up to 2 work sessions for the Planning Commission and/or Council, and participate in up to 3 public hearings at the Planning Commission and City Council levels. The consultant will make presentations at meetings and provide presentation graphics and handouts, as appropriate.
- For the Planning Commission and City Council public hearings, the consultant will prepare the notice for individual landowners, write the required staff reports, including findings on the ESEE analysis for each site; and prepare site plan sketches. The City will mail the notices to individual property owners, provide facilities for meetings; and prepare and mail general public notices.

3. An emphasis of the project will be to move the most threatened wetlands (as identified by the City) through the ESEE analysis and the public process first. Tree groves will be processed next, and then the remaining wetland sites will be completed. There are a number of resources on City-owned land in open spaces and parks - these are less threatened than sites on privately owned property. The analysis of these sites may be abbreviated to some extent in order to focus more on more threatened, privately owned sites. The order of the hearings will be:

- a) wetlands identified as the most threatened by the City
- b) tree groves
- c) other wetlands included in the Natural Resources Inventory

4. Final Products

- a) A final ESEE report will be required. The report will:
  - i. Describe the sites, including a list of all tax lots potentially impacted.
  - ii. Summarize the process of public involvement and issue resolution.
  - iii. Recommend levels of protection for each site.
  - iv. Include Goal 5 Findings, showing how the ESEE process will be implemented through Plan policies and standards.

The original report and 40 copies will be provided to the City of Lake Oswego. This material shall be also provided in Microsoft Word or Word Perfect 5.1 on 3 1/2" disks.

- b) High quality map products are essential. At a minimum, tree groves and wetlands should each be mapped as follows:
  - i. Two reproducible mylar maps showing inventoried sites, their characteristics, and their areas of impact at a 1:800 scale.
  - ii. Reduced pmts of the above maps at 11" by 17".
  - iii. 6 full sized prints of the 1:800 scale maps.
  - iv. A reproducible map of each individual site at a 1:200 scale showing the specific location of the resource and its Impact Area. The final report is to include a map of each individual site which accompanies the analysis and findings.
- c) A draft tree grove protection standard is to be submitted in addition to the above-listed materials.

5. Schedule

Time is of the essence. This project shall be completed within nine and a half months of signing of the implementing contract.

6. Coordination and Positive Communication with the City is a Requirement

The consultant will be expected to maintain an open dialogue with the City and will meet or otherwise communicate with the City's representative at least once a week regarding the project.

II. REQUIRED EXPERIENCE

Proposals shall be submitted by persons or groups with knowledge and experience of:

- Oregon Statewide Planning Goal 5, Oregon land use laws, administrative rules, and local governmental planning. A thorough understanding of Goal 5 ESEE procedures and administrative rules is essential.
- Conduct of public meetings, dispute resolution, and consensus building.
- Natural resource site analysis principles and techniques.
- State agencies involved in Goal 5 programs and in natural resource management and protection.

The consultant shall have demonstrated success in similar projects including:

- Writing local government staff reports and findings.
- Preparing public notices and participating in quasi-judicial and legislative land use hearings.
- Document production capabilities.
- Presentation, graphic, and mapping skills.
- Maintaining effective working relationships with the public, diverse interest groups and local government staff.

III. PRE-SUBMITTAL CONFERENCE REQUIRED

Prior to submitting a proposal, those firms interested in this project shall participate in a pre-submittal meeting with the city. Attendance by a representative of the consulting team is required for a proposal to be considered. The pre-submittal conference shall be on January 14, 1994 at 10:00 a.m. at Lake Oswego City Hall, 380 A Ave, in the Council Chambers. Any specific questions for the City's representative shall be raised by interested firms at this meeting.

IV. PROPOSAL REQUIREMENTS

Proposals shall be submitted by January 24, 1994 and work is to commence immediately upon the signing of a contract between the consultant and the City. Work shall conclude by no later than October 15, 1994.

At a minimum, the proposal shall include the following:

- a) An overall strategy to achieve the City's objectives including but not limited to:
  - A citizen involvement program for the general public, various interest groups, and affected property owners.
  - ESEE analysis methodology.
  - A Project Schedule necessary to complete the project within the City's time-frame.
- b) General information regarding all team members, including firm sizes, and overall capabilities considered relevant to this project.
- c) The consultant shall identify by name each person, including those employed by subcontractors, assigned to the project, including position, role, level of responsibility, and the percentage of time each will be involved in the project. Project team consistency and leadership is very important to the City and, therefore the contract will have provisions to maintain consistent team membership. The City reserves the right to reject any proposed team member or subcontractor.
- d) The consultant shall provide a personnel hour estimate for each of the tasks identified in Section I: Project Summary and Products. The contractor shall also identify those services which will be provided by the firm and those that will be provided by subcontractors.
- e) The consultant shall submit at least three examples of similar projects which the firm has completed. In addition, names, addresses and telephone numbers of the clients associated with each of these projects shall be provided.
- f) The consultant shall provide a professional services rate for each team member including subcontractors and a cost estimate for the project based on the City's stated objectives.
- g) The consultant may submit other information as appropriate to supplement the information requested above.

The purpose of these submittals is to allow the City to evaluate the quality of the consulting team's work and verify that the team has the required experience. Submitted materials will be returned if requested upon selection of a consulting team. The consultant shall also provide information on recent projects illustrating a relevant breadth of experience and the ability to complete this project within the time specified. A list of references with name, address, phone number, and contact persons is required.

**V. PROPOSAL SELECTION CRITERIA**

Selection of the consultant will be based upon the team's experience; the approach taken to accomplish the City's objectives; the thoroughness and quality of the oral and written presentation of the proposal; a proven ability to complete similar projects within the identified deadlines; availability and accessibility of individuals assigned to the project; and references from past and present clients. The City has the right to accept or reject all proposals at its option.

Based on evaluation of the proposals, the City may elect to short-list firms to participate in an interview process. Oral interviews may be required before final selection of the successful consultant.

**VI. RECEIPT OF PROPOSALS**

Five copies of sealed proposals for consulting services will be received at the Lake Oswego Planning Department located at City Hall, 380 "A" Avenue until 4:00 p.m., January 24, 1994 and shall be addressed to:

Catherine Clark, Associate Planner  
City of Lake Oswego  
380 A. Avenue  
P.O. Box 369  
Lake Oswego, OR 97034

**ATTACHMENTS:**

- A. Lake Oswego Study Area Map
- B. Sample Summary Sheets of Inventoried Wetlands and Tree Groves

rfp.doc

City of  
Lake Oswego

Study Area  
(Shaded Areas Excluded)

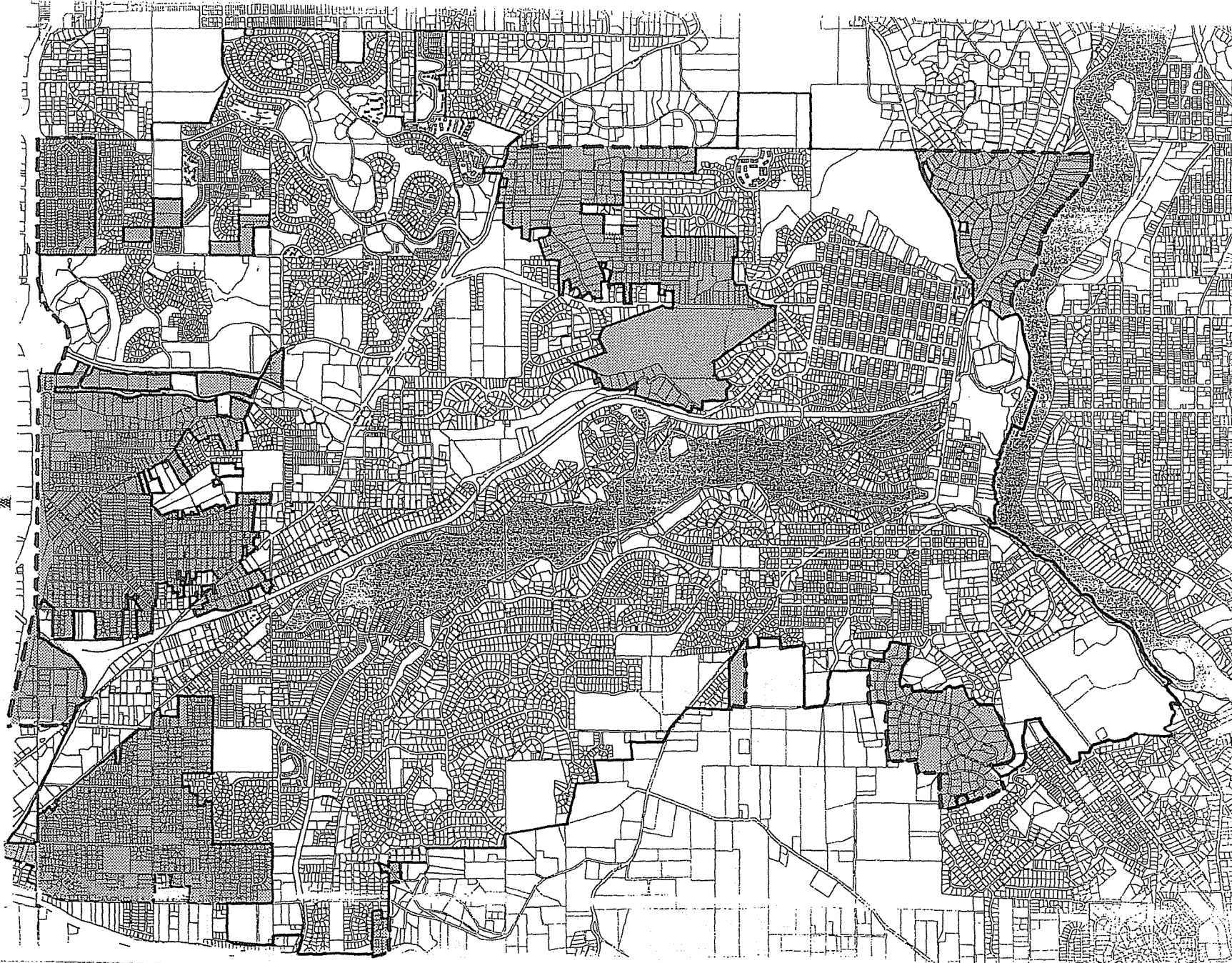
A

Urban Service Boundary

City Limits

THIS PLEDGE/STUDY AREA MAP  
INFORMATION SOURCE:  
PLACES MAP  
City of Beaverton, Multnomah County and Clatsop  
County, OR, 1981  
This study area and general services  
area of about 500 sq. mi. in  
the Willamette Valley, 1980  
Metropolitan Council of Clatsop  
County, Multnomah County, 1981  
Map boundary based on zoning jurisdiction. Line  
not shown where boundary absent.  
Boundary of map  
based on Oregon State and local laws, 1980.  
This study area and general services  
area of about 500 sq. mi. in  
the Willamette Valley, 1980.  
RESPONSIBILITY OF LOCAL GOVERNMENTS FOR STUDY  
area and its management will be...

Metropolitan Council Study  
1982 by the Council  
Map No. 10-100-100



Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W16 SIZE: ≈ 5 acres

HABITAT CLASS: Forested Wetland

LOCATION: Waluga Park

SEC. MAP NO.: 7 DNA #: 8

DATE OF INVENTORY: 9/27/91

21E-7AD 3000; 21E-7DB 800; 21E-7DA 600, 700

Habitat Assessment Score: 61

Range for Forested Wetlands: 30 - 78

Resource Value Assessment \*

Stormwater Storage	<u>H</u>	Undisturbed Condition	<u>M</u>
Sediment Trapping	<u>M</u>	Vegetation Diversity	<u>L</u>
Nutrient Retention	<u>M</u>	Wildlife Habitat	<u>M</u>
Educational Potential	<u>H</u>	Size/Connectivity	<u>M</u>
Groundwater Recharge	<u>L</u>	Recreation	<u>L</u>

GENERAL DESCRIPTION

This site is the wetland portion of Waluga Park now supporting a dense willow stand west of the ballfields. A distinct stream channel meanders through the site that has water during the rainy season but is dry in late summer/fall. The site is a nearly homogenous stand of willows and appears to be second growth. Taller trees are black cottonwood, aspen, Oregon ash, and cascara. Slough sedge dominates the groundcover with small-fruited bulrush, and smartweed. Clumps of reed canarygrass also occur throughout and is most dense in the opening near Waluga Rd. Hazel, spirea, and blackberry make up a shorter layer under the willows. Originally this wetland extended farther east, but the ballfields were constructed on some of the wetlands.

NATURAL RESOURCE VALUES

Although not a diverse vegetation community, the denseness and seasonal water gives greater wildlife values. Flood storage was rated high because of the large size of the area and the extensive network of low spots that can slow the overflow from the channel that meanders through the site.

IMPACTS/DISTURBANCES

The area appears to be fairly recent second growth and may have been cleared for pasture some years ago. The eastern edge of the wetland was filled to construct the ballfields.

MANAGEMENT RECOMMENDATIONS

Leave this area natural for wildlife use and birdwatching from the trail along the north edge.

\* Based on best professional judgment and field assessment methods

Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: TG-22 SIZE: ≈ 11.5 acres

HABITAT CLASS: Upland Forest

LOCATION: Hallinan School

SEC. MAP NO.: 10 DNA #: 37

DATE OF INVENTORY: 10-29-91

ZE10DD 100-500, 100-1300

Habitat Assessment Score: 58		Range for Upland Forests: 12 - 76	
Resource Value Assessment*			
Education Potential	<u>H</u>	Undisturbed Condition	<u>L</u>
Slope Stability	<u>M</u>	Vegetation Diversity	<u>H</u>
Scenic	<u>L</u>	Wildlife Habitat	<u>M-H</u>
Recreation	<u>M</u>	Size/Connectivity	<u>H</u>

**GENERAL DESCRIPTION** This large diverse woodland is located northeast of Hallinan Elementary School. The canopy consists of a mixture of deciduous and evergreen tree species including Oregon ash, big leaf maple, white oak, Western red cedar, Douglas fir, and grand fir. The shrub understory is equally diverse, and contains a variety of seed- and berry-bearing bushes. Ground cover is dominated by English ivy and clematis, but also includes typical native species such as sword fern and Oregon grape. A small stream corridor (W47) bisects the site. Yard debris has been dumped in the forest from adjacent back yards. A paved trail is used by hikers, neighbors, and school children for recreation and as a travel route.

**NATURAL RESOURCE VALUES** The diversity of vegetation provides food, cover, and nesting and perching sites for a variety of wildlife species. The stream corridor provides year-round water for forest species and enhances wildlife habitat.

The proximity of the site to Hallinan School provides excellent educational opportunities for natural history studies.

**IMPACTS/DISTURBANCES** Site vegetation is severely impacted by English ivy and clematis. These invasive vines cover native vegetation, reducing food and cover for wildlife.

**MANAGEMENT RECOMMENDATIONS** Remove ivy and clematis, and restore native vegetation. Neighborhood volunteers and/or Hallinan students who frequent the trail may be recruited for labor.

\* Based on best professional judgment and field assessment methods

Received from/Made to

Catherine Clark / Lake Oswego

Subject \_\_\_\_\_

- Beginning ESEF now
- Inventory - Frank Flynn said need to check sites to determine impact area -
- used at Metro infrareds; NWS; - Engin-dept-hydrology map that's pretty good
- Data sheets → she thinks they are f/v - Res. No WL sampling -
- 49 sites issue = stream data not as good as other - quicker survey
- she felt they (fishman) did less than city wanted or had in contract -
- Told her it's pretty good as Goal 5 inventories go; it's DCD's call, of course.

141-92-01-78

Signature \_\_\_\_\_

Date 12-29-93

Received from/Made to

Ron Bunch / 677-7421 Lake Oswego

Subject

Wetlands Inventory - NR inventory done last year

- Wetlands ≠ tree groves
- want to use it for the ESEF
- fishman did it / used wildlife habitat assessment only
- have some \$ to dedicate this budget year; need to get esp.
- city ca. 80% built out; so many of the WLS are now in public ownership / Greenway etc - Make things easier!
- Told him to contact Frank Flynn re = what's acceptable for Goal 5 - said inventory likely is but may need to do more quality ass't beyond wildlife

141-92-01-78

Tom

Signature \_\_\_\_\_

Date 10-25-93

Ken B  
Janet m

DIVISION OF  
STATE LANDS  
SEP 11 11 13 AM '91

KAMPE ASSOCIATES, INC.  
CIVIL ENGINEERS  
LAND SURVEYORS  
3681 S.W. CARMAN DRIVE  
LAKE OSWEGO, OREGON 97035  
(503) 635-6291

September 6, 1991

MS. CATHERINE CLARK  
City of Lake Oswego  
P.O. Box 369  
Lake Oswego, OR 97034

Re: Wetland Inventory

Dear Catherine:

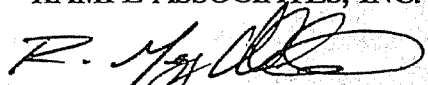
As a resident and business owner in the City of Lake Oswego we are very interested in the current inventory of natural areas that was publicized in the City newsletter. The article requested input from citizens regarding the location of wetlands within the City. We have watched the development of a wetland located within City park land since 1983. This area is designated as River Run Park in the City's Comprehensive Park and Recreation Plan, dated 1990. We have located the site on the enclosed map for your information.

Each year the City mows this park area as a precaution against brush fires, which impacts the wetland vegetation after its normal growing season; however the expanse of this wetland appears to expand each year. If you are interested, we have photographs of this area during winter months at which time a lake develops. In the spring this area serves as a haven for several species of ducks that normally nest along the Tualatin River.

Thank you for the opportunity to provide input on this important inventory process. We look forward to the protection of the limited natural areas remaining within the City as the development of private property continues within the guidelines of the Comprehensive Plan. If we can be of further service, please contact our office.

Very truly yours,

KAMPE ASSOCIATES, INC.

  
R. Gregg Weston, P.E.  
Vice President

*Put info in wetdet*

RGW:jf

Enclosure

cc: Mr. William Parks, Division of State Lands

WP18/91-OSWEG.LET

(CUG) ✓  
Lake Oswego, OR  
(Clackamas Co.) *Kear* ✓  
Review *Earle* ✓  
(Cir. W. 8:520) *Janet M.* ✓  
AUG 29 1991

Illinois P. C. R. 1/2 1888

# City getting inventory, condition of natural resources

By JOHN M. GRUND  
Staff Reporter

With a practiced eye, biologist Christie Galen looked over a spring under a forest canopy near the intersection of Lakeview Boulevard and Bryant Road Friday, and then made some notes on a map.

"Maybe this could be replanted," she said of the trampled dirt around the spring. "Maybe."

Lake Oswego still has a lot of such natural features, both large and small — but no one knows exactly how many or what condition they are in.

That's one reason the city is embarking on a new inventory of its natural resources, according to city planner Catherine Clark. It is the first major survey of forests, tree groves, streams, wetlands and other features since a study done in 1975. "It will definitely be more sophisticated than the last time," Clark said.

The City Council July 8 approved a \$27,000 contract with Fishman Environmental Services of Portland to do the work, and employees of Fishman started the survey last week.

The goal is to search out, map and describe all the significant

natural resources in the city, Clark said. The inventory will be the basis for plans to protect natural areas, she said.

Clark said she expects both bad news and good news from the inventory.

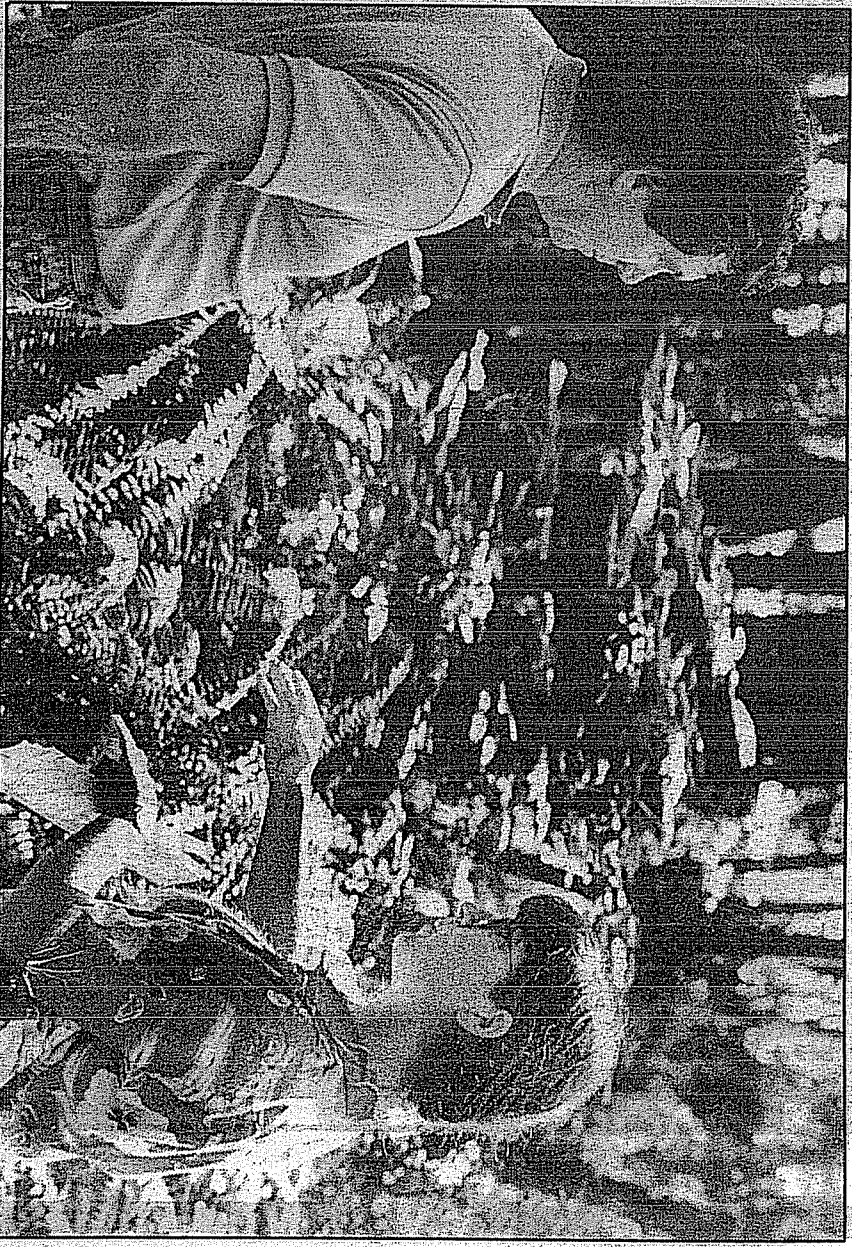
The bad news will be that many natural areas have been lost to development or neglect since 1975, she said. The good news may be that there still are valuable areas left that haven't been included on previous maps.

"I think there are some hidden jewels out there we don't really know about," she said.

City officials will try to find out about some of those hidden jewels at a public meeting set for 7 p.m. Wednesday, Sept. 11, in council chambers at City Hall, 380 A Ave. Citizens are invited to attend to review the first results of the inventory and make sure important natural sites are not left out, Clark said.

By then, Fishman should have finished reviewing the city's existing documents and begun looking at aerial photos to seek out sites, she said.

See INVENTORY, page A11



ANDY HARRIS and biologist Christie Galen discuss plants and trees near the Mormon Temple Friday. Galen, an employee of Fishman Environmental Services, will be helping with a citywide inventory of natural resources. The city is trying to

get an accurate count of its natural resources and an assessment of their condition. It is the first such study in the city since 1975. (Staff photo by John M. Grund)

## Inventory/ from page A1

Then Fishman workers will do field work in depth, she said. Fishman's deadline to complete the inventory is Dec. 31.

The survey will cover not only the city limits, but a larger area where the city has planning responsibilities. "We're particularly interested in involving people who are within our planning boundary but not within our city limits," Clark said.

The study is being supervised by the city's new Natural Resources Commission. Clark said the NRC is already looking at how to draft an "action plan" to protect natural resources once the survey is done, and how to protect property through options other than outright purchase by the city, including easements.

Of \$12.2 million in park bonds approved by the voters in September 1990, about \$2 million is budgeted for acquisition of open space land — land to be left in its natural state.

Andy Harris, the city's in-house natural resources expert, said an accurate inventory would help protect natural areas right away by keeping them from being inadvertently developed.

Clark said city planners and building officials need better documents at the permit counter in City

Hall so they can immediately spot sensitive areas before a building permit is issued.

The 1975 inventory, called the Lake Oswego Physical Resources Inventory, is notoriously vague, Harris said. It identifies areas only with circles on a map, and includes only sketchy descriptions.

The 1975 inventory was folded into the city's comprehensive land-use plan, and is responsible for many of the plan's failings in protecting natural areas, Clark said.

As Harris and Clark led Galen on a tour of local natural areas Friday, Harris pointed out some of the city's successes and failures.

He listed these issues:

- Stream corridors often need more protection than the city provides. The city should enforce buffer strips in addition to protection of the stream corridor itself, he said.

- Natural areas that can support wildlife need to be linked to other areas so wildlife can move from one to another.

- People who live next to natural areas set aside for protection need to be informed about them. Too many people unknowingly extend their back yards into the areas or put down barkdust in a wildlife area, he said.

5025

**CITY OF LAKE OSWEGO  
INVENTORY OF NATURAL RESOURCES**

**DRAFT  
#2**

**Prepared for:**

**City of Lake Oswego  
Department of Planning and Development  
P.O. Box 369  
Lake Oswego, Oregon 97034**

**Prepared by:**

**FISHMAN ENVIRONMENTAL SERVICES**

**Christie Galen  
Janet Burcham  
Paul Fishman**

**April 1992**

**FES Project #407**



**EXPLANATION OF FUNCTIONS IN BOXES ON SUMMARY SHEETS**

**Education Potential:** Wetlands located near a school or which are in or near a park have the greatest potential of being an educational resource.

**Fish Habitat:** This function was rated when fish were observed or known to be present. Ponds or streams that had self-sustaining fish populations also had cover and food resources for those species.

**Groundwater Recharge:** Evaluating this function is difficult without specific knowledge of the hydrogeology of an area. Some areas are obvious sinks for water that moves into the groundwater table.

**Nutrient Retention:** This function increases in importance when a wetland is densely vegetated and of large size relative to the watershed and is downstream from significant sources of nutrient input from agriculture, sewer, hard surfaces, and other sources.

**Recreation:** Sites were evaluated for their accessibility and attractiveness to people for recreational activities that included walking, wildlife watching, other passive activities, or boating if the site was open water.

**Scenic:** A scenic value of a site reflects its location in a view space or a high elevation site with a view.

**Sediment Trapping:** Wetlands that receive large quantities of sediments from upstream sources and have relatively dense vegetation that are capable of storing these sediments and have the highest rating for this function.

**Sensitive Species:** Some wetlands are known to be inhabited by wildlife species that are already listed or are candidates for listing by the state as species of particular concern for conservation measures.

**Size/Connectivity:** Both the degree of connection of a site to other habitats or its individual size if it is not are included in this feature.

**Slope Stability:** Accurate assessments of slope stability involve measurements of soil strength, underlying impermeable layers, and determination of subsurface water movement. This survey did not include that level of analysis, but slope stability was subjectively rated based on obvious surface soil features (i.e. very crumbly and erodible soil) and integrity of riparian vegetation along the banks.

Stormwater Storage: This is a function of a wetland that is capable of dissipating or storing runoff from upslope areas due to its size, vegetative cover or position below steep terrain that had limited capacity for storing runoff. Flat terraces adjacent to a stream channel can also provide some storage at high flows. This capability can prevent minor floods or reduce the severity of major floods in downstream areas.

Undisturbed Condition: This describes the degree of human-caused disturbance which includes physical disturbances such as excavation and mowing and biological disturbances such as dominance of exotic plant species.

Vegetation Diversity: Greater diversity is a characteristic of sites with little or no disturbance. Presence of all three vegetative layers--tree, shrub, and groundcover--and many species within each layer indicates more natural conditions and provides greater wildlife habitat value.

Wildlife Habitat: Food, cover, nesting habitat, and availability of water are variables used to assess this feature of a site. The degree to which these are met for the largest number of animal species is reflected in the scores.

Wildlife Travel Corridor: Riparian buffers along streams function as hiding cover for wildlife moving from one area to another. The effectiveness of this travel corridor varies with the degree of disturbance to the vegetation.

**TABLE 1**

**NUMBER OF WETLAND/WATER RESOURCES  
INVENTORIED BY HABITAT CLASS**

<b>HABITAT CLASS</b>	<b>NUMBER OF SITES</b>
Emergent	7
Forested Wetland	14
Pond	27
Lake	1
Stream	51
<b>TOTAL NUMBER OF SITES</b>	<b>100</b>

**TABLE 3: WETLAND/WATER RESOURCES;  
LISTING BY NRI NUMBER**

NRI #	COMMON NAME	HABITAT	LOCATION
W-1	WILLOW LANE	POND	N. OF BOONESFERRY/JEAN RDS.
W-2	RXR TRIANGLE 1	FOREST	N. OF BOONESFERRY/JEAN RDS.
W-3	RXR CRESCENT	FOREST	N. OF BOONESFERRY/JEAN RDS.
W-4	RXR TRIANGLE 2	POND	N. OF BOONESFERRY/JEAN RDS.
W-5	63RD AVE.	STREAM	N. OF BOONESFERRY/JEAN RDS.
W-6	TUALATIN ST. NORTH	FOREST	WEST OF TUALATIN STREET
W-7	TUALATIN ST. SOUTH	STREAM	WEST OF TUALATIN STREET
W-8	LOST DOG	STREAM	BETWEEN PATTON & STAFFORD
W-9	BERGIS RD.	FOREST	BERGIS RD.
W-10	BRYANT WOODS	MOSAIC	CHILDS RD.
W-11	OSWEGO CANAL	STREAM	CHILDS RD.
W-12	INDIAN SPRING	POND	CHILDS RD.
W-13	VIRGINIA MITCHELL	FOREST	CHILDS RD.
W-14	E. OSWEGO CANAL	FOREST	EAST OF OSWEGO CANAL
W-15	WEST WALUGA PARK	FOREST	WALUGA DRIVE
W-16	EAST WALUGA PARK	FOREST	WALUGA DRIVE
W-17	CARMAN CREEK	STREAM	MERCANTILE VILLAGE
W-18	MERCANTILE VILLAGE	POND	MERCANTILE VILLAGE
W-19	CARTER CREEK 1	POND	BANGY LANE
W-20	CARTER CREEK 2	POND	SOUTH OF MEADOWS ROAD
W-21	WESTWOOD	POND	SUNCREEK DRIVE
W-22	PARKVIEW DR.	POND	PARKVIEW DR.
W-23	TOWNSQUARE	POND	TOWNSQUARE
W-24	RAINBOW LAKE	POND	RAINBOW DRIVE
W-25	DOLPH COURT	POND	DOLPH CT.
W-26	FROG POND	POND	BOONESFERRY RD. (LILY BAY)
W-27	BETH RYAN	POND	SUMMIT DRIVE
W-28	HUNT CLUB	POND	BOONESFERRY ROAD
W-29	LOWER OSWEGO CR.	STREAM	GEORGE ROGERS PARK
W-30	GOODALL	EMERGENT	EAST OF GOODALL RD.
W-31	UPPER GOODALL CR.	STREAM	GOODALL RD.
W-32	KNAUS RD. EAST	FOREST	N. OF KNAUS/COUNTRY CLUB RD.
W-33	UNITED CHURCH	STREAM	KNAUS RD/CHURCH OF CHRIST
W-34	KRUSE OAKS	FOREST	KRUSE WAY
W-35	LOWER GOODALL CR.	STREAM	GOODALL/COUNTRY CLUB RD.
W-36	LAMONT ST.	STREAM	BRYANT RD./LAKEVIEW BLVD.
W-37	BLUE HERON CR.	STREAM	BLUE HERON COURT
W-38	PALISADES LAKE	POND	PALISADES LAKE DRIVE
W-39	LOST DOG CREEK	STREAM	SOUTH SHORE BLVD.
W-40	FIELDING CREEK	POND	FIELDING RD. N. OF BRIARWOOD
W-41	MOUTH OF TRYON CR.	STREAM	NORTH STATE STREET

TABLE 3 (CONTINUED)

W-42	ROEHR PARK	STREAM	OSWEGO POINTE ROAD
W-43	WILL. GREENWAY	STREAM	WILLAMETTE RIVER
W-44	LAKWOOD BAY	POND	THIRD STREET
W-45	LAKEBAY COURT	STREAM	LAKE FOREST DRIVE
W-46	LAKE GARDEN CT.	POND	LAKE GARDEN COURT
W-47	HALLINAN CREEK	STREAM	HALLINAN STREET
W-48	UPPER OSWEGO CR.	STREAM	MAPLE STREET
W-49	W. LOST DOG CR.	STREAM	14TH HOLE GOLF COURSE
W-50	RIVER RUN	EMERGENT	RIVER RUN DRIVE
W-51	DEERBRUSH	FOREST	DEERBRUSH AVE.
W-52	DANIEL WAY WEST	EMERGENT	DANIEL WAY
W-53	CARMAN	STREAM	CARMAN DRIVE
W-54	DANIEL WAY EAST	EMERGENT	DANIEL WAY
W-55	ALDERWOOD	FOREST	N.&S. OF MCNARY/KERR PKWAY
W-56	UPPER IRON MT. CR.	STREAM	COUNTRY CLUB RD.
W-57	COUNTRY CLUB	POND	LO COUNTRY CLUB
W-58	BAYBERRY	FOREST	IRON MT BLVD/COUNTRY C. RD.
W-59	OUR SAVIOR'S	POND	WEMPLY PK/COUNTRY C. RD.
W-60	ATWATER	EMERGENT	ATWATER LANE
W-61	ATWATER CREEK	STREAM	ATWATER RD.
W-62	CENTERPOINTE CR.	STREAM	CENTERPOINTE DRIVE
W-63	LOWER BALL CR.	STREAM	KRUSE OAKS BLVD.
W-64	LOWER SUNCREEK	STREAM	KRUSE OAKS BLVD.
W-65	UPPER SUNCREEK	STREAM	SUNCREEK DR.
W-66	BAYCREEK 1	POND	ROGERS RD.
W-67	KRUSE CREEK	STREAM	TWIN CREEK LANE
W-68	OAK CREEK	STREAM	MELROSE STREET
W-69	BAYCREEK 5	POND	FOSBERG RD.
W-70	MT. VIEW ESTATES	STREAM	JEFFERSON PARKWAY
W-70	MT. VIEW ESTATES	POND	JEFFERSON PARKWAY
W-71	CIRQUE STREET	EMERGENT	CIRQUE STREET
W-72A	UPPER SPRINGBROOK	STREAM	KERR PARKWAY
W-72B	SPRINGBROOK CR-NE	STREAM	MONROE PARKWAY
W-72C	SPRINGBROOK CR-E	STREAM	UPPER DRIVE
W-73	LOWER IRON MT CR	STREAM	KNAUS RD
W-74	SISTERS OF HOLY NAME	POND	STONEBRIDGE WAY
W-75	SIS. OF HOLY NAME CR	STREAM	OLD RIVER ROAD
W-76	MARYLHURST CR.	STREAM	OLD RIVER ROAD
W-77	OLD RIVER RD. CR.	STREAM	OLD RIVER ROAD
W-78	LOWER ARBOR DR. CR.	STREAM	HIGHWAY 43
W-79	UPPER ARBOR DR. CR.	STREAM	HILLSIDE COURT
W-80	SHADY HOLLOW CREEK	STREAM	ARBOR DRIVE
W-81	TRILLIUM CREEK	STREAM	TRILLIUM DRIVE

TABLE 3 (CONTINUED)

W-82	TIMBERLINE CREEK	STREAM	TIMBERLINE DR.
W-83	FOREST MEADOWS CR.	STREAM	ENGLEWOOD DR.
W-84	SOUTH SHORE POND	POND	SOUTH SHORE RD.
W-85	PECAN CR.	STREAM	SW OF CHILDS/STAFFORD RDS.
W-86	W. LOST DOG CR.	STREAM	SUNNYHILL RD.
W-87	MAPLELEAF CREEK	STREAM	MAPLELEAF ROAD
W-88	CARTER CREEK	STREAM	BANGY LANE
W-89	LOWER SPRINGBROOK	STREAM	LAKEVIEW BLVD.
W-90	UPLANDS CREEK	STREAM	WEMBLEY PARK RD.
W-91	ALDERSPRINGS CR.	STREAM	GREAT BLUE HERON/S.SHORE RD
W-92	WESTVIEW CREEK	STREAM	BLUE HERON RD.
W-93	OSWEGO LAKE	LAKE	OSWEGO LAKE

**TABLE 4: WETLAND/WATER RESOURCES;  
LISTING BY COMMON NAME**

COMMON NAME	NRI#	HABITAT	LOCATION
ALDERSPRINGS CR.	W-91	STREAM	GREAT BLUE HERON/S.SHORE RD
ALDERWOOD	W-55	FOREST	N.&S. OF MCNARY/KERR PKWAY
ATWATER	W-60	EMERGENT	ATWATER LANE
ATWATER CREEK	W-61	STREAM	ATWATER RD.
BAYBERRY	W-58	FOREST	IRON MT BLVD/COUNTRY C. RD.
BAYCREEK 1	W-66	POND	ROGERS RD.
BAYCREEK 5	W-69	POND	FOSBERG RD.
BERGIS RD.	W-9	FOREST	BERGIS RD.
BETH RYAN	W-27	POND	SUMMIT DRIVE
BLUE HERON CR.	W-37	STREAM	BLUE HERON COURT
BRYANT WOODS	W-10	MOSAIC	CHILDS RD.
CARMAN	W-53	STREAM	CARMAN DRIVE
CARMAN CREEK	W-17	STREAM	MERCANTILE VILLAGE
CARTER CREEK	W-88	STREAM	BANGY LANE
CARTER CREEK 1	W-19	POND	BANGY LANE
CARTER CREEK 2	W-20	POND	SOUTH OF MEADOWS ROAD
CENTERPOINTE CR.	W-62	STREAM	CENTERPOINTE DRIVE
CIRQUE STREET	W-71	EMERGENT	CIRQUE STREET
COUNTRY CLUB	W-57	POND	LO COUNTRY CLUB
DANIEL WAY EAST	W-54	EMERGENT	DANIEL WAY
DANIEL WAY WEST	W-52	EMERGENT	DANIEL WAY
DEERBRUSH	W-51.	FOREST	DEERBRUSH AVE.
DOLPH COURT	W-25	POND	DOLPH CT.
E. OSWEGO CANAL	W-14	FOREST	EAST OF OSWEGO CANAL
EAST WALUGA PARK	W-16	FOREST	WALUGA DRIVE
FIELDING CREEK	W-40	POND	FIELDING RD. N. OF BRIARWOOD
FOREST MEADOWS CR.	W-83	STREAM	ENGLEWOOD DR.
FROG POND	W-26	POND	BOONESFERRY RD. (LILY BAY)
GOODALL	W-30	EMERGENT	EAST OF GOODALL RD.
HALLINAN CREEK	W-47	STREAM	HALLINAN STREET
HUNT CLUB	W-28	POND	BOONESFERRY ROAD
INDIAN SPRING	W-12	POND	CHILDS RD.
KNAUS RD. EAST	W-32	FOREST	N. OF KNAUS/COUNTRY CLUB RD.
KRUSE CREEK	W-67	STREAM	TWIN CREEK LANE
KRUSE OAKS	W-34	FOREST	KRUSE WAY
LAKE GARDEN CT.	W-46	POND	LAKE GARDEN COURT
LAKEBAY COURT	W-45	STREAM	LAKE FOREST DRIVE
LAKWOOD BAY	W-44	POND	THIRD STREET
LAMONT ST.	W-36	STREAM	BRYANT RD./LAKEVIEW BLVD.
LOST DOG	W-8	STREAM	BETWEEN PATTON & STAFFORD
LOST DOG CREEK	W-39	STREAM	SOUTH SHORE BLVD.

TABLE 4 (CONTINUED)

COMMON NAME	NRI#	HABITAT	LOCATION
LOWER ARBOR DR. CR.	W-78	STREAM	HIGHWAY 43
LOWER BALL CR.	W-63	STREAM	KRUSE OAKS BLVD.
LOWER GOODALL CR.	W-35	STREAM	GOODALL/COUNTRY CLUB RD.
LOWER IRON MT CR	W-73	STREAM	KNAUS RD
LOWER OSWEGO CR.	W-29	STREAM	GEORGE ROGERS PARK
LOWER SPRINGBROOK	W-89	STREAM	LAKEVIEW BLVD.
LOWER SUNCREEK	W-64	STREAM	KRUSE OAKS BLVD.
MAPLELEAF CREEK	W-87	STREAM	MAPLELEAF ROAD
MARYLHURST CR.	W-76	STREAM	OLD RIVER ROAD
MERCANTILE VILLAGE	W-18	POND	MERCANTILE VILLAGE
MOUTH OF TRYON CR.	W-41	STREAM	NORTH STATE STREET
MT. VIEW ESTATES	W-70	STREAM	JEFFERSON PARKWAY
MT. VIEW ESTATES	W-70	POND	JEFFERSON PARKWAY
OAK CREEK	W-68	STREAM	MELROSE STREET
OLD RIVER RD. CR.	W-77	STREAM	OLD RIVER ROAD
OSWEGO CANAL	W-11	STREAM	CHILDS RD.
OSWEGO LAKE	W-93	LAKE	OSWEGO LAKE
OUR SAVIOR'S	W-59	POND	WEMBLY PK/COUNTRY C. RD.
PALISADES LAKE	W-38	POND	PALISADES LAKE DRIVE
PARKVIEW DR.	W-22	POND	PARKVIEW DR.
PECAN CR.	W-85	STREAM	SW OF CHILDS/STAFFORD RDS.
RAINBOW LAKE	W-24	POND	RAINBOW DRIVE
RIVER RUN	W-50	EMERGENT	RIVER RUN DRIVE
ROEHR PARK	W-42	STREAM	OSWEGO POINTE ROAD
RXR CRESCENT	W-3	FOREST	N. OF BOONESFERRY/JEAN RDS.
RXR TRIANGLE 1	W-2	FOREST	N. OF BOONESFERRY/JEAN RDS.
RXR TRIANGLE 2	W-4	POND	N. OF BOONESFERRY/JEAN RDS.
SHADY HOLLOW CREEK	W-80	STREAM	ARBOR DRIVE
SIS. OF HOLY NAME CR	W-75	STREAM	OLD RIVER ROAD
SISTERS OF HOLY NAME	W-74	POND	STONEBRIDGE WAY
SOUTH SHORE POND	W-84	POND	SOUTH SHORE RD.
SPRINGBROOK CR-E	W-72C	STREAM	UPPER DRIVE
SPRINGBROOK CR-NE	W-72B	STREAM	MONROE PARKWAY
TIMBERLINE CREEK	W-82	STREAM	TIMBERLINE DR.
TOWNSQUARE	W-23	POND	TOWNSQUARE
TRILLIUM CREEK	W-81	STREAM	TRILLIUM DRIVE
TUALATIN ST. NORTH	W-6	FOREST	WEST OF TUALATIN STREET
TUALATIN ST. SOUTH	W-7	STREAM	WEST OF TUALATIN STREET
UNITED CHURCH	W-33	STREAM	KNAUS RD/CHURCH OF CHRIST
UPLANDS CREEK	W-90	STREAM	WEMBLEY PARK RD.
UPPER ARBOR DR. CR.	W-79	STREAM	HILLSIDE COURT

TABLE 4 (CONTINUED)

COMMON NAME	NRI#	HABITAT	LOCATION
UPPER GOODALL CR.	W-31	STREAM	GOODALL RD.
UPPER IRON MT. CR.	W-56	STREAM	COUNTRY CLUB RD.
UPPER OSWEGO CR.	W-48	STREAM	MAPLE STREET
UPPER SPRINGBROOK	W-72A	STREAM	KERR PARKWAY
UPPER SUNCREEK	W-65	STREAM	SUNCREEK DR.
VIRGINIA MITCHELL	W-13	FOREST	CHILDS RD.
W. LOST DOG CR.	W-49	STREAM	14TH HOLE GOLF COURSE
W. LOST DOG CR.	W-86	STREAM	SUNNYHILL RD.
WEST WALUGA PARK	W-15	FOREST	WALUGA DRIVE
WESTVIEW CREEK	W-92	STREAM	BLUE HERON RD.
WESTWOOD	W-21	POND	SUNCREEK DRIVE
WILL. GREENWAY	W-43	STREAM	WILLAMETTE RIVER
WILLOW LANE	W-1	POND	N. OF BOONESFERRY/JEAN RDS.
63RD AVE.	W-5	DITCH	N. OF BOONESFERRY/JEAN RDS.

**TABLE 5: WETLAND/WATER RESOURCES;  
LISTING BY SECTION NUMBER**

SEC.#	NRI #	COMMON NAME	LOCATION	HABITAT
2	W-40	FIELDING CREEK	FIELDING RD. N. OF BRIARWOOD	POND
2	W-41	MOUTH OF TRYON CR.	NORTH STATE STREET	STREAM
3	W-46	LAKE GARDEN CT.	LAKE GARDEN COURT	POND
3	W-58	BAYBERRY	IRON MT BLVD/COUNTRY C. RD.	FOREST
3	W-57	COUNTRY CLUB	LO COUNTRY CLUB	POND
4	W-25	DOLPH COURT	DOLPH CT.	POND
4	W-30	GOODALL	EAST OF GOODALL RD.	EMERGENT
4	W-31	UPPER GOODALL CR.	GOODALL RD.	STREAM
4	W-32	KNAUS RD. EAST	N. OF KNAUS/COUNTRY CLUB RD.	FOREST
4	W-33	UNITED CHURCH	KNAUS RD/CHURCH OF CHRIST	STREAM
4	W-35	LOWER GOODALL CR.	GOODALL/COUNTRY CLUB RD.	STREAM
4	W-56	UPPER IRON MT. CR.	COUNTRY CLUB RD.	STREAM
4	W-59	OUR SAVIOR'S	WEMBLY PK/COUNTRY C. RD.	POND
4	W-60	ATWATER	ATWATER LANE	EMERGENT
4	W-61	ATWATER CREEK	ATWATER RD.	STREAM
4	W-73	LOWER IRON MT CR	KNAUS RD	STREAM
4	W-82	TIMBERLINE CREEK	TIMBERLINE DR.	STREAM
4	W-90	UPLANDS CREEK	WEMBLEY PARK RD.	STREAM
4	W-57	COUNTRY CLUB	LO COUNTRY CLUB	POND
4	W-83	FOREST MEADOWS CR.	ENGLEWOOD DR.	STREAM
5	W-23	TOWNSQUARE	TOWNSQUARE	POND
5	W-24	RAINBOW LAKE	RAINBOW DRIVE	POND
5	W-52	DANIEL WAY WEST	DANIEL WAY	EMERGENT
5	W-53	CARMAN	CARMAN DRIVE	STREAM
5	W-54	DANIEL WAY EAST	DANIEL WAY	EMERGENT
5	W-71	CIRQUE STREET	CIRQUE STREET	EMERGENT
5	W-72A	UPPER SPRINGBROOK	KERR PARKWAY	STREAM
5	W-72B	SPRINGBROOK CR-NE	MONROE PARKWAY	STREAM
6	W-21	WESTWOOD	SUNCREEK DRIVE	POND
6	W-22	PARKVIEW DR.	PARKVIEW DR.	POND
6	W-34	KRUSE OAKS	KRUSE WAY	FOREST
6	W-62	CENTERPOINTE CR.	CENTERPOINTE DRIVE	STREAM
6	W-63	LOWER BALL CR.	KRUSE OAKS BLVD.	STREAM
6	W-64	LOWER SUNCREEK	KRUSE OAKS BLVD.	STREAM
6	W-65	UPPER SUNCREEK	SUNCREEK DR.	STREAM
6	W-66	BAYCREEK 1	ROGERS RD.	POND
6	W-67	KRUSE CREEK	TWIN CREEK LANE	STREAM
6	W-68	OAK CREEK	MELROSE STREET	STREAM
6	W-69	BAYCREEK 5	FOSBERG RD.	POND
7	W-15	WEST WALUGA PARK	WALUGA DRIVE	FOREST
7	W-16	EAST WALUGA PARK	WALUGA DRIVE	FOREST

TABLE 5 (CONTINUED)

SEC.#	NRI #	COMMON NAME	LOCATION	HABITAT
7	W-19	CARTER CREEK 1	BANGY LANE	POND
7	W-20	CARTER CREEK 2	SOUTH OF MEADOWS ROAD	POND
7	W-88	CARTER CREEK	BANGY LANE	STREAM
8	W-17	CARMAN CREEK	MERCANTILE VILLAGE	STREAM
8	W-18	MERCANTILE VILLAGE	MERCANTILE VILLAGE	POND
8	W-28	HUNT CLUB	BOONESFERRY ROAD	POND
8	W-72C	SPRINGBROOK CR-E	UPPER DRIVE	STREAM
8	W-89	LOWER SPRINGBROOK	LAKEVIEW BLVD.	STREAM
8	W-93	OSWEGO LAKE	OSWEGO LAKE	LAKE
9	W-26	FROG POND	BOONESFERRY RD. (LILY BAY)	POND
9	W-27	BETH RYAN	SUMMIT DRIVE	POND
9	W-93	OSWEGO LAKE	OSWEGO LAKE	LAKE
10	W-8	LOST DOG	BETWEEN PATTON & STAFFORD	STREAM
10	W-38	PALISADES LAKE	PALISADES LAKE DRIVE	POND
10	W-39	LOST DOG CREEK	SOUTH SHORE BLVD.	STREAM
10	W-44	LAKEWOOD BAY	THIRD STREET	POND
10	W-45	LAKEBAY COURT	LAKE FOREST DRIVE	STREAM
10	W-47	HALLINAN CREEK	HALLINAN STREET	STREAM
10	W-48	UPPER OSWEGO CR.	MAPLE STREET	STREAM
10	W-93	OSWEGO LAKE	OSWEGO LAKE	LAKE
10	W-29	LOWER OSWEGO CR.	GEORGE ROGERS PARK	STREAM
11	W-29	LOWER OSWEGO CR.	GEORGE ROGERS PARK	STREAM
11	W-42	ROEHR PARK	OSWEGO POINTE ROAD	STREAM
11	W-43	WILL. GREENWAY	WILLAMETTE RIVER	STREAM
13	W-81	TRILLIUM CREEK	TRILLIUM DRIVE	STREAM
14	W-74	SISTERS OF HOLY NAME	STONEBRIDGE WAY	POND
14	W-75	SIS. OF HOLY NAME CR	OLD RIVER ROAD	STREAM
14	W-76	MARYLHURST CR.	OLD RIVER ROAD	STREAM
14	W-77	OLD RIVER RD. CR.	OLD RIVER ROAD	STREAM
14	W-78	LOWER ARBOR DR. CR.	HIGHWAY 43	STREAM
14	W-79	UPPER ARBOR DR. CR.	HILLSIDE COURT	STREAM
14	W-80	SHADY HOLLOW CREEK	ARBOR DRIVE	STREAM
15	W-9	BERGIS RD.	BERGIS RD.	FOREST
16	W-49	W. LOST DOG CR.	14TH HOLE GOLF COURSE	STREAM
16	W-86	W. LOST DOG CR.	SUNNYHILL RD.	STREAM
16	W-87	MAPLELEAF CREEK	MAPLELEAF ROAD	STREAM
17	W-37	BLUE HERON CR.	BLUE HERON COURT	STREAM
17	W-51	DEERBRUSH	DEERBRUSH AVE.	FOREST
17	W-84	SOUTH SHORE POND	SOUTH SHORE RD.	POND
17	W-91	ALDERSPRINGS CR.	GREAT BLUE HERON/S.SHORE RD	STREAM
17	W-92	WESTVIEW CREEK	BLUE HERON RD.	STREAM

TABLE 5 (CONTINUED)

SEC.#	NRI #	COMMON NAME	LOCATION	HABITAT
17	W-10	BRYANT WOODS	CHILDS RD.	MOSAIC
17	W-11	OSWEGO CANAL	CHILDS RD.	STREAM
17	W-14	E. OSWEGO CANAL	EAST OF OSWEGO CANAL	FOREST
18	W-1	WILLOW LANE	N. OF BOONESFERRY/JEAN RDS.	POND
18	W-2	RXR TRIANGLE 1	N. OF BOONESFERRY/JEAN RDS.	FOREST
18	W-3	RXR CRESCENT	N. OF BOONESFERRY/JEAN RDS.	FOREST
18	W-4	RXR TRIANGLE 2	N. OF BOONESFERRY/JEAN RDS.	POND
18	W-5	63RD AVE.	N. OF BOONESFERRY/JEAN RDS.	DITCH
18	W-6	TUALATIN ST. NORTH	WEST OF TUALATIN STREET	FOREST
18	W-7	TUALATIN ST. SOUTH	WEST OF TUALATIN STREET	STREAM
18	W-36	LAMONT ST.	BRYANT RD./LAKEVIEW BLVD.	STREAM
19	W-12	INDIAN SPRING	CHILDS RD.	POND
19	W-13	VIRGINIA MITCHELL	CHILDS RD.	FOREST
20	W-50	RIVER RUN	RIVER RUN DRIVE	EMERGENT
20	W-10	BRYANT WOODS	CHILDS RD.	MOSAIC
20	W-11	OSWEGO CANAL	CHILDS RD.	STREAM
20	W-14	E. OSWEGO CANAL	EAST OF OSWEGO CANAL	FOREST
20	W-13	VIRGINIA MITCHELL	CHILDS RD.	FOREST
21	W-85	PECAN CR.	SW OF CHILDS/STAFFORD RDS.	STREAM
31	W-70	MT. VIEW ESTATES	JEFFERSON PARKWAY	STREAM
31	W-70	MT. VIEW ESTATES	JEFFERSON PARKWAY	POND
32	W-55	ALDERWOOD	N.&S. OF MCNARY/KERR PKWAY	FOREST
33	W-83	FOREST MEADOWS CR.	ENGLEWOOD DR.	STREAM

**TABLE 6: WETLAND/WATER RESOURCES;  
LISTING BY DRAINAGE BASIN**

DRAINAGE BASIN	SEC.#	COMMON NAME	NRI #	HABITAT	ACRES
BALL CREEK	7	CARTER CREEK 1	W-19	POND	<0.5
BALL CREEK	7	CARTER CREEK 2	W-20	POND	<0.5
BALL CREEK	6	WESTWOOD	W-21	POND	<0.5
BALL CREEK	6	PARKVIEW DR.	W-22	POND	<0.5
BALL CREEK	6	KRUSE OAKS	W-34	FOREST	3+
BALL CREEK	32	ALDERWOOD	W-55	FOREST	0.5
BALL CREEK	6	CENTERPOINTE CR.	W-62	STREAM	4
BALL CREEK	6	LOWER BALL CR.	W-63	STREAM	9
BALL CREEK	6	LOWER SUNCREEK	W-64	STREAM	7
BALL CREEK	6	UPPER SUNCREEK	W-65	STREAM	1
BALL CREEK	6	BAYCREEK 1	W-66	POND	0.5
BALL CREEK	6	KRUSE CREEK	W-67	STREAM	4
BALL CREEK	6	OAK CREEK	W-68	STREAM	2.5
BALL CREEK	6	BAYCREEK 5	W-69	POND	0.25
BALL CREEK	31	MT. VIEW ESTATES	W-70	STREAM	1
BALL CREEK	31	MT. VIEW ESTATES	W-70	POND	1
BALL CREEK	7	CARTER CREEK	W-88	STREAM	3.5
BLUE HERON CREEK	17	BLUE HERON CR.	W-37	STREAM	3.5
CANAL	17, 20	BRYANT WOODS	W-10	MOSAIC	18
CANAL	17, 20	OSWEGO CANAL	W-11	STREAM	10
CANAL	19	INDIAN SPRING	W-12	POND	1
CANAL	19, 20	VIRGINIA MITCHELL	W-13	FOREST	8
CANAL	17, 20	E. OSWEGO CANAL	W-14	FOREST	2.5
CANAL	17	DEERBRUSH	W-51	FOREST	1
CANAL	17	SOUTH SHORE POND	W-84	POND	0.5
CANAL	17	ALDERSPRINGS CR.	W-91	STREAM	1
CANAL	17	WESTVIEW CREEK	W-92	STREAM	1
COUNTRY CLUB	9	FROG POND	W-26	POND	5.5
COUNTRY CLUB	3, 4	COUNTRY CLUB	W-57	POND	2
COUNTRY CLUB	3	BAYBERRY	W-58	FOREST	0.5
COUNTRY CLUB	3	LAKE GARDEN CT.	W-46	POND	0.5
JEAN ROAD	18	LAMONT ST.	W-36	STREAM	3
LAKWOOD BAY	11	ROEHR PARK	W-42	STREAM	1.5
LAKWOOD BAY	11	WILL. GREENWAY	W-43	STREAM	4+
LAKWOOD BAY	10	LAKWOOD BAY	W-44	POND	<0.5
LAKWOOD BAY	10	LAKEBAY COURT	W-45	STREAM	1
LOST DOG CREEK	10	LOST DOG	W-8	STREAM	0.5
LOST DOG CREEK	15	BERGIS RD.	W-9	FOREST	1
LOST DOG CREEK	10	PALISADES LAKE	W-38	POND	1
LOST DOG CREEK	10	LOST DOG CREEK	W-39	STREAM	3
LOST DOG CREEK	16	W. LOST DOG CR.	W-49	STREAM	0.5

TABLE 6 (CONTINUED)

DRAINAGE BASIN	SEC.#	COMMON NAME	NRI #	HABITAT	ACRES
LOST DOG CREEK	16	W. LOST DOG CR.	W-86	STREAM	2
LOWER BOONESFERRY	18	WILLOW LANE	W-1	POND	1
LOWER BOONESFERRY	18	RXR TRIANGLE 1	W-2	FOREST	0.5
LOWER BOONESFERRY	18	RXR CRESCENT	W-3	FOREST	3
LOWER BOONESFERRY	18	RXR TRIANGLE 2	W-4	POND	1
LOWER BOONESFERRY	18	63RD AVE.	W-5	DITCH	0.5
LOWER BOONESFERRY	18	TUALATIN ST. NORTH	W-6	FOREST	1.5
LOWER BOONESFERRY	18	TUALATIN ST. SOUTH	W-7	STREAM	0.5
OSWEGO LAKE	8,9,10	OSWEGO LAKE	W-93	LAKE	
PALISADES	16	MAPLELEAF CREEK	W-87	STREAM	1
PECAN CREEK	21	PECAN CR.	W-85	STREAM	20
RIVER RUN	20	RIVER RUN	W-50	EMERGENT	0.5
SKYLANDS/GLENMORRIE	10, 11	LOWER OSWEGO CR.	W-29	STREAM	5
SKYLANDS/GLENMORRIE	10	HALLINAN CREEK	W-47	STREAM	1
SKYLANDS/GLENMORRIE	10	UPPER OSWEGO CR.	W-48	STREAM	3
SKYLANDS/GLENMORRIE	14	SISTERS OF HOLY NAME	W-74	POND	<0.5
SKYLANDS/GLENMORRIE	14	SIS. OF HOLY NAME CR	W-75	STREAM	4.5
SKYLANDS/GLENMORRIE	14	MARYLHURST CR.	W-76	STREAM	3.5
SKYLANDS/GLENMORRIE	14	OLD RIVER RD. CR.	W-77	STREAM	10
SKYLANDS/GLENMORRIE	14	LOWER ARBOR DR. CR.	W-78	STREAM	2.5
SKYLANDS/GLENMORRIE	14	UPPER ARBOR DR. CR.	W-79	STREAM	1
SKYLANDS/GLENMORRIE	14	SHADY HOLLOW CREEK	W-80	STREAM	5
SKYLANDS/GLENMORRIE	13	TRILLIUM CREEK	W-81	STREAM	?
SPRINGBROOK CREEK	7	WEST WALUGA PARK	W-15	FOREST	13.5
SPRINGBROOK CREEK	7	EAST WALUGA PARK	W-16	FOREST	5
SPRINGBROOK CREEK	8	CARMAN CREEK	W-17	STREAM	<0.5
SPRINGBROOK CREEK	8	MERCANTILE VILLAGE	W-18	POND	<0.5
SPRINGBROOK CREEK	5	TOWNSQUARE	W-23	POND	1
SPRINGBROOK CREEK	5	RAINBOW LAKE	W-24	POND	1
SPRINGBROOK CREEK	9	BETH RYAN	W-27	POND	1
SPRINGBROOK CREEK	8	HUNT CLUB	W-28	POND	2
SPRINGBROOK CREEK	5	DANIEL WAY WEST	W-52	EMERGENT	1
SPRINGBROOK CREEK	5	CARMAN	W-53	STREAM	1.5
SPRINGBROOK CREEK	5	DANIEL WAY EAST	W-54	EMERGENT	0.5
SPRINGBROOK CREEK	5	CIRQUE STREET	W-71	EMERGENT	<0.5
SPRINGBROOK CREEK	5	UPPER SPRINGBROOK	W-72A	STREAM	10
SPRINGBROOK CREEK	5	SPRINGBROOK CR-NE	W-72B	STREAM	2
SPRINGBROOK CREEK	8	SPRINGBROOK CR-E	W-72C	STREAM	7
SPRINGBROOK CREEK	8	LOWER SPRINGBROOK	W-89	STREAM	<1
TRYON CREEK	4	DOLPH COURT	W-25	POND	0.25
TRYON CREEK	4	GOODALL	W-30	EMERGENT	1

TABLE 6 (CONTINUED)

DRAINAGE BASIN	SEC.#	COMMON NAME	NRI #	HABITAT	ACRES
TRYON CREEK	4	UPPER GOODALL CR.	W-31	STREAM	7.5
TRYON CREEK	4	KNAUS RD. EAST	W-32	FOREST	1
TRYON CREEK	4	UNITED CHURCH	W-33	STREAM	<1
TRYON CREEK	4	LOWER GOODALL CR.	W-35	STREAM	6.5
TRYON CREEK	2	FIELDING CREEK	W-40	POND	3
TRYON CREEK	2	MOUTH OF TRYON CR.	W-41	STREAM	1
TRYON CREEK	4	UPPER IRON MT. CR.	W-56	STREAM	2
TRYON CREEK	4	OUR SAVIOR'S	W-59	POND	0.5
TRYON CREEK	4	ATWATER	W-60	EMERGENT	1
TRYON CREEK	4	ATWATER CREEK	W-61	STREAM	7.5
TRYON CREEK	4	LOWER IRON MT CR	W-73	STREAM	12
TRYON CREEK	4	TIMBERLINE CREEK	W-82	STREAM	6
TRYON CREEK	4, 33	FOREST MEADOWS CR.	W-83	STREAM	4
TRYON CREEK	4	UPLANDS CREEK	W-90	STREAM	1

**TABLE 7: WETLAND/WATER RESOURCES;  
LISTING BY DNA**

DNA #	NRI #	COMMON NAME	HABITAT	SCORE
1	W-10	BRYANT WOODS	MOSAIC	96
4	W-29	LOWER OSWEGO CR.	STREAM	82
5	W-42	ROEHR PARK	STREAM	52
8	W-16	EAST WALUGA PARK	FOREST	61
12	W-41	MOUTH OF TRYON CR.	STREAM	39
13	W-12	INDIAN SPRING	POND	74
14	W-72A	UPPER SPRINGBROOK	STREAM	73
14	W-72B	SPRINGBROOK CR-NE	STREAM	55
14	W-72C	SPRINGBROOK CR-E	STREAM	54
15	W-60	ATWATER	EMERGENT	10
16	W-74	SISTERS OF HOLY NAME	POND	24
16	W-75	SIS. OF HOLY NAME CR	STREAM	71
16	W-76	MARYLHURST CR.	STREAM	75
16	W-77	OLD RIVER RD. CR.	STREAM	63
16	W-78	LOWER ARBOR DR. CR.	STREAM	63
16	W-79	UPPER ARBOR DR. CR.	STREAM	36
16	W-80	SHADY HOLLOW CREEK	STREAM	61
16	W-81	TRILLIUM CREEK	STREAM	36
17	W-73	LOWER IRON MT CR	STREAM	68
18	W-39	LOST DOG CREEK	STREAM	53
19	W-26	FROG POND	POND	74
20	W-46	LAKE GARDEN CT.	POND	22
22	W-34	KRUSE OAKS	FOREST	65
23	W-23	TOWNSQUARE	POND	36
24	W-15	WEST WALUGA PARK	FOREST	78
26	W-36	LAMONT ST.	STREAM	42
28	W-35	LOWER GOODALL CR.	STREAM	62
30	W-8	LOST DOG	STREAM	38
35	W-91	ALDERSPRINGS CR.	STREAM	38
35	W-92	WESTVIEW CREEK	STREAM	62
37	W-47	HALLINAN CREEK	STREAM	84
46	W-37	BLUE HERON CR.	STREAM	67
47	W-89	LOWER SPRINGBROOK	STREAM	42
48	W-53	CARMAN	STREAM	54
54	W-93	OSWEGO LAKE	LAKE	NA
55	W-27	BETH RYAN	POND	70
9,10	W-43	WILL. GREENWAY	STREAM	59

**TABLE 8**  
**ACREAGE OF WETLAND/WATER RESOURCE SITES INVENTORIED**

NUMBER OF SITES

HABITAT CLASS	< 0.5 ACRE	0.5-1 ACRE	1-2 ACRES	2-5 ACRES	5-10 ACRES	10+ ACRES
Emergent	1	2	3	.	1	
Forested Wetland		3	4	3	3	1
Pond	9	4	9	4	1	
Lake						1
Stream	1	6	12	17	10	5
<b>TOTALS</b>	<b>11</b>	<b>15</b>	<b>28</b>	<b>24</b>	<b>15</b>	<b>7</b>

Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W1 SIZE: ≈ 1 acre HABITAT CLASS: Pond  
LOCATION: North of Boonesferry/Jean Road and South of Railroad  
SEC. MAP NO.: 18BD WL/DNA #: 18d DATE OF INVENTORY: 09-10-91  
21E-18BD 600

Habitat Assessment Score: 61	Range for Ponds: 10 - 77
<b>Resource Value Assessment *</b>	
Stormwater Storage <u>H</u>	Undisturbed Condition <u>L</u>
Sediment Trapping <u>H</u>	Fish Habitat <u>M</u>
Nutrient Retention <u>M</u>	Wildlife Habitat <u>M-H</u>
Education Potential <u>L</u>	Size/Connectivity <u>L</u>
Sensitive Species <u>L</u>	Recreation <u>L</u>

**GENERAL DESCRIPTION** This pond is located between Boonesferry Road and the railroad line. Water flows east into the site from W4, a pond located west of the railroad tracks, and from a ditch that flows north adjacent to the tracks. The pond supports abundant emergent and aquatic vegetation providing food for a variety of wildlife including mallards, nutria, and tadpoles. Mosquito fish are abundant and are eaten by Kingfishers and herons. Snags and stumps are common throughout the pond. They indicate that hydrologic conditions have become wetter since the trees were alive. The pond is surrounded by dense Himalayan blackberry thickets that limit access for wildlife and reduce food and cover for some wildlife species.

**NATURAL RESOURCE VALUES** This site provides waterfowl and associated wetland wildlife with year-round water and food. Snags provide perches for many bird species and potential nest sites for cavity nesters. Stumps provide nesting perches for waterfowl, frogs, and other small wildlife species. The diverse emergent and aquatic vegetation provides food and cover for aquatic wildlife. The wetland functions as a stormwater storage area. The dense submergent and emergent vegetation improves water quality by trapping sediments and nutrients from stormwater runoff.

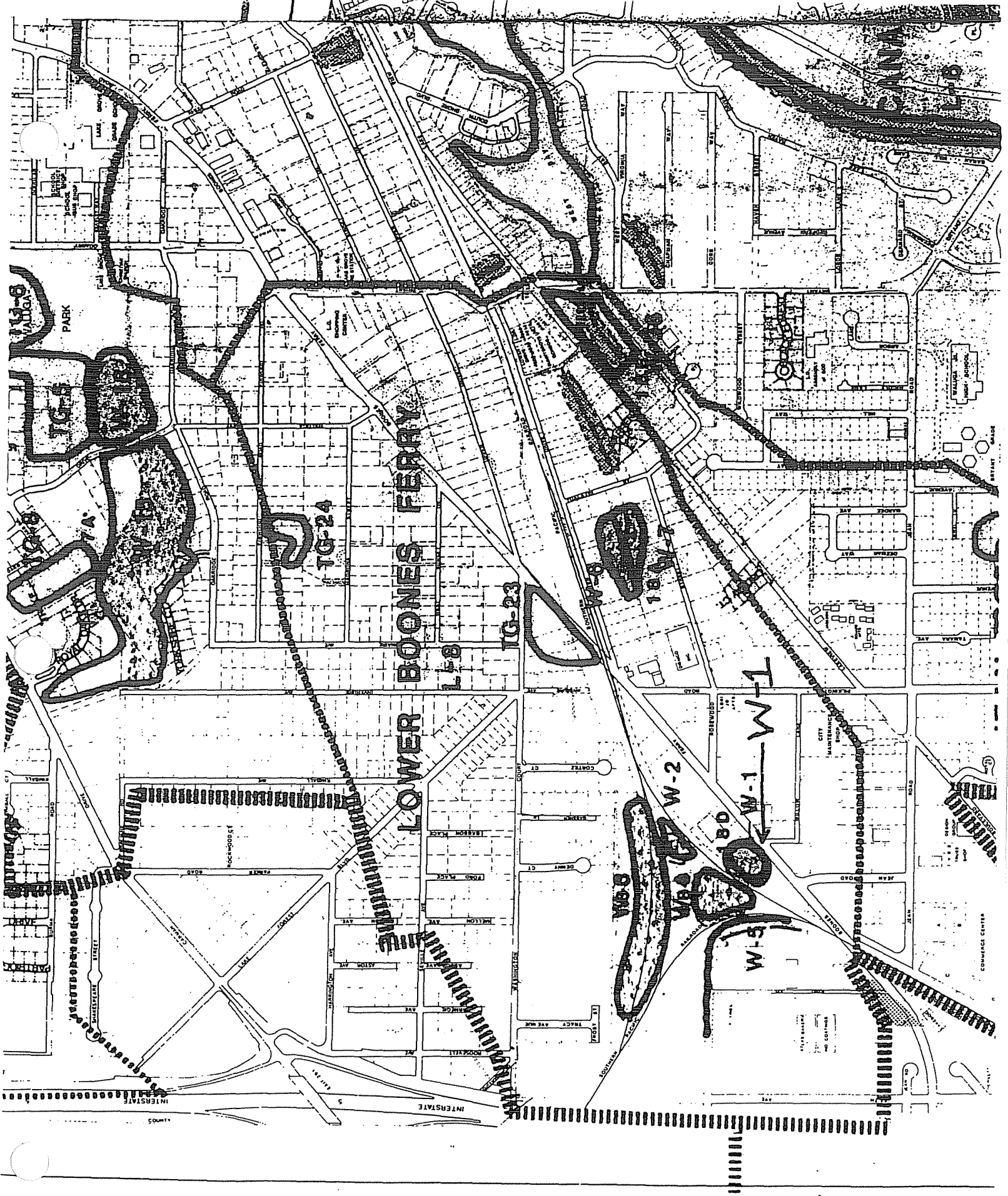
**IMPACTS/DISTURBANCES** Dense thickets of Himalayan blackberry surround the pond. Himalayan blackberry reduces vegetation diversity limiting food and cover for wildlife. Water quality may be contaminated from runoff and chemicals used for railroad maintenance.

**MANAGEMENT RECOMMENDATIONS** Remove blackberry and replace with a minimum buffer of twenty-five feet. Plant the buffer with a variety of native trees and shrubs that will provide food and cover for wildlife. Inquire about vegetation management practices of railroad to ensure water quality is not impacted.

\* Based on best professional judgment and field assessment methods

SITE W1





LOWER BOONES FERRY

LOWER BOONES FERRY

TG-24

TG-23

W-2

W-1

W-180

W-3

W-9

W-9

INTERSTATE

CITY MAINTENANCE SHOP

COMMERCE CENTER

**SITE SUMMARY**

SITE NO.: W2    SIZE: 0.5 acre    HABITAT CLASS: Wetland Forest  
 LOCATION: Northeast of Boonesferry / Jean Road  
 SEC. MAP NO.: 18 B WL/DNA #: N/A    DATE OF INVENTORY: 09-10-91  
21E-18B D 601

Habitat Assessment Score: 39		Range for Wetland Forests: 30 - 78	
<b>Resource Value Assessment *</b>			
Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>M</u>	Vegetation Diversity	<u>L</u>
Nutrient Retention	<u>M</u>	Wildlife Habitat	<u>L</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Groundwater Recharge	<u>L</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This forested wetland is located within a railroad triangle northeast of the intersection of Boonesferry Road and Jean Road. The canopy is dominated by black cottonwood and Pacific willow. The understory is dominated by ivy. Transients camp in the uplands adjacent to the site. Water enters the site from a culvert under the northern railroad tracks. Its source could be from groundwater off of the hill to the north as well as urban runoff.

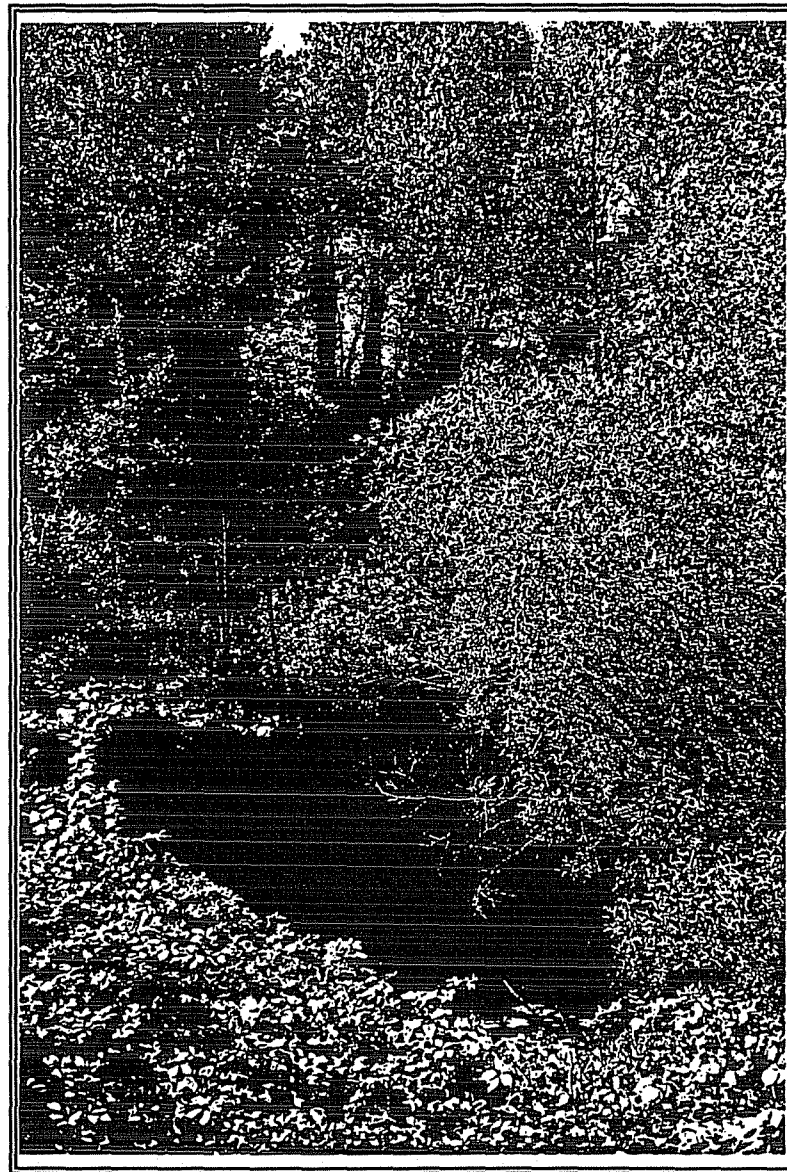
**NATURAL RESOURCE VALUES** Wildlife habitat is low due to impacts by transients and invasive species. The sites primary resource value is improving water quality. The site has the capacity to store stormwater, trap sediments, and retain nutrients.

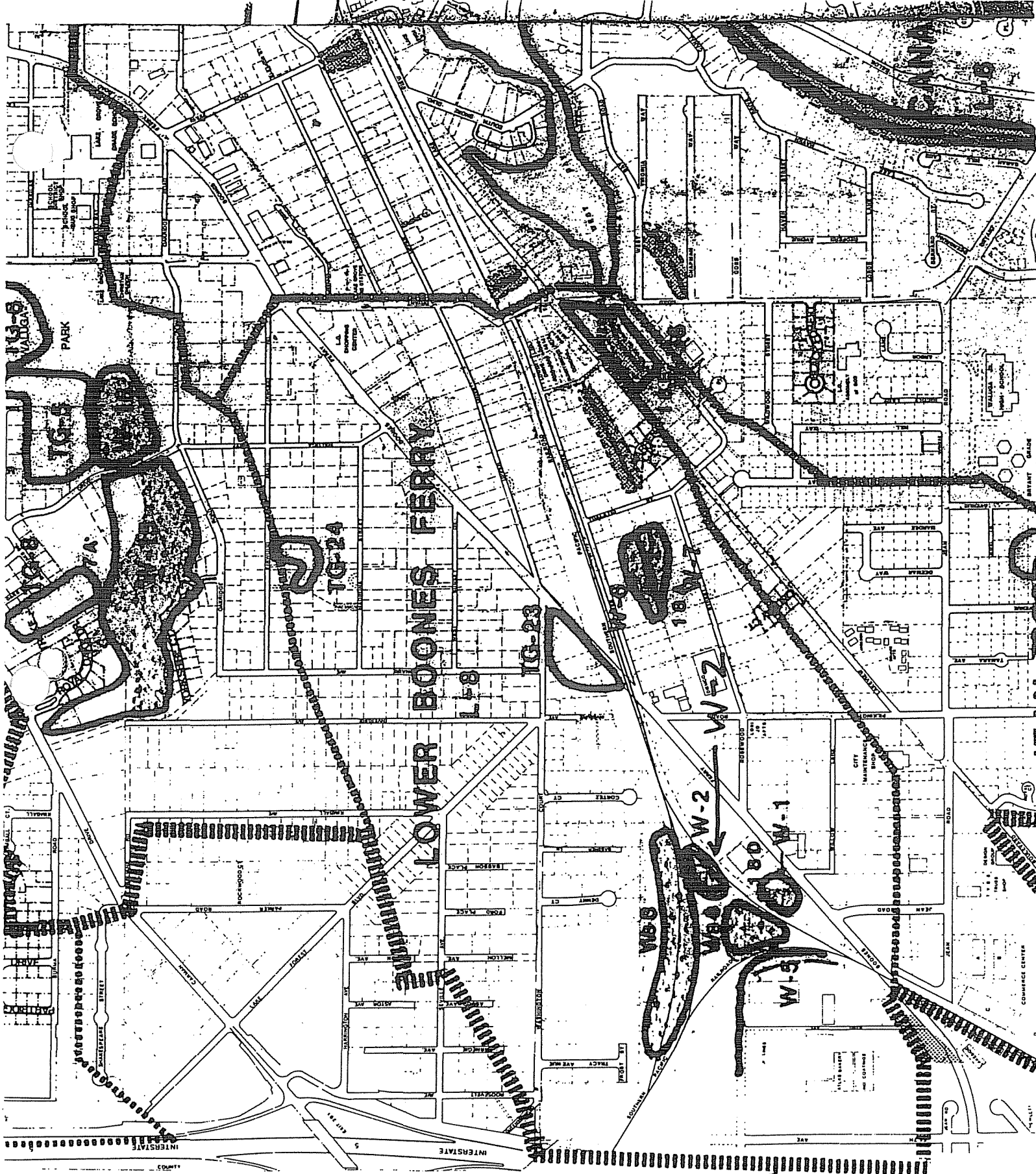
**IMPACTS/DISTURBANCES** The understory has been severely impacted by transients and the invasion of English ivy. Transients have denuded habitat by camping and creating access trails through the wetland and adjacent forest. English ivy has covered a significant portion of the understory inhibiting native plant growth and degrading food and cover resources for wildlife.

**MANAGEMENT RECOMMENDATIONS** Prohibit transient use and related garbage. Remove ivy and restore native vegetation.

\* Based on best professional judgment and field assessment methods

SITE W2





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W3 SIZE: ≈ 3 acres HABITAT CLASS: Wetland Forest  
LOCATION: North of Boonesferry / Jean Road  
SEC. MAP NO.: 18 WL/DNA #: 18c DATE OF INVENTORY: 09-10-91  
21E-18 BB 2500

Habitat Assessment Score: 75	Range for Wetland Forests: 30 - 78
Resource Value Assessment *	
Stormwater Storage <u>L</u>	Undisturbed Condition <u>H</u>
Sediment Trapping <u>H</u>	Vegetation Diversity <u>M-H</u>
Nutrient Retention <u>H</u>	Wildlife Habitat <u>M-H</u>
Educational Potential <u>L</u>	Size/Connectivity <u>L</u>
Groundwater Recharge <u>L</u>	Recreation <u>L</u>

**GENERAL DESCRIPTION** This forested wetland is located along the railroad tracks north of the intersection of Boonesferry and Jean Roads. It has been filled in places and isolated from other natural areas by the railroad. Even with this severe physical disturbance, vegetation remains diverse and dominated by native species. The canopy supports black cottonwood, Oregon ash, and Pacific willow. Three species of willow and spirea occur in the shrub layer. The emergent understory contains over twenty species. Numerous snags are also present on the site.

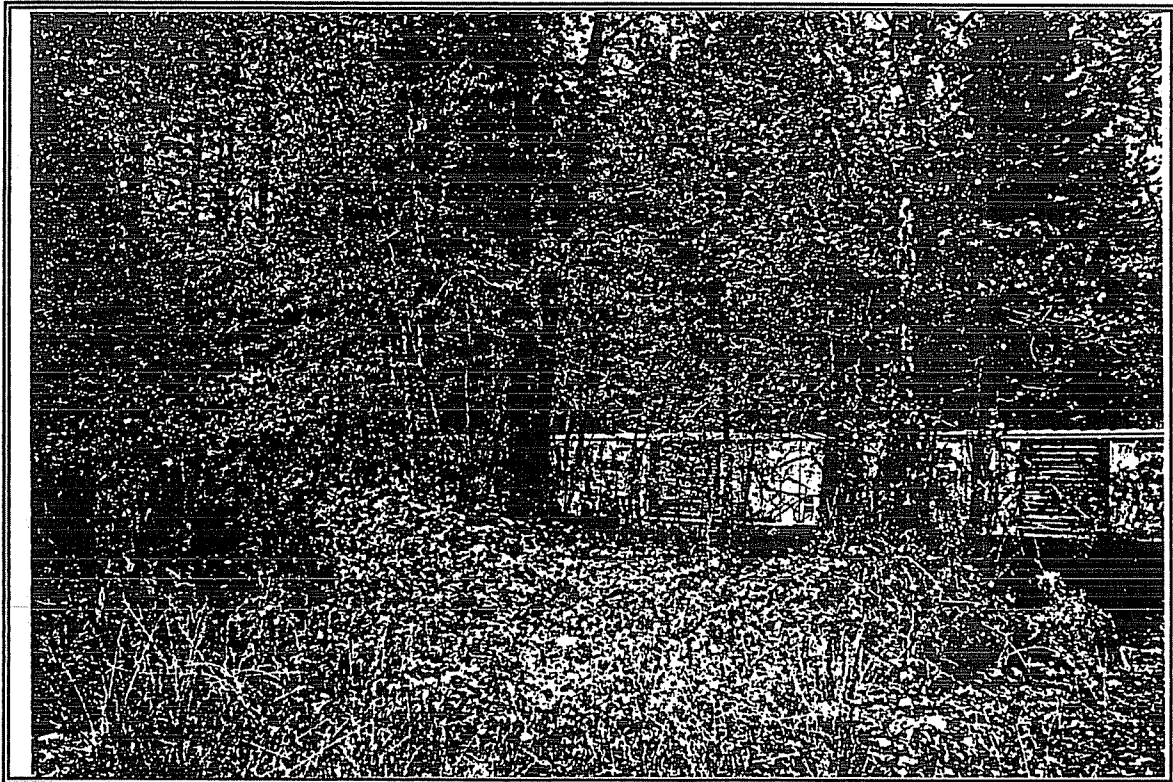
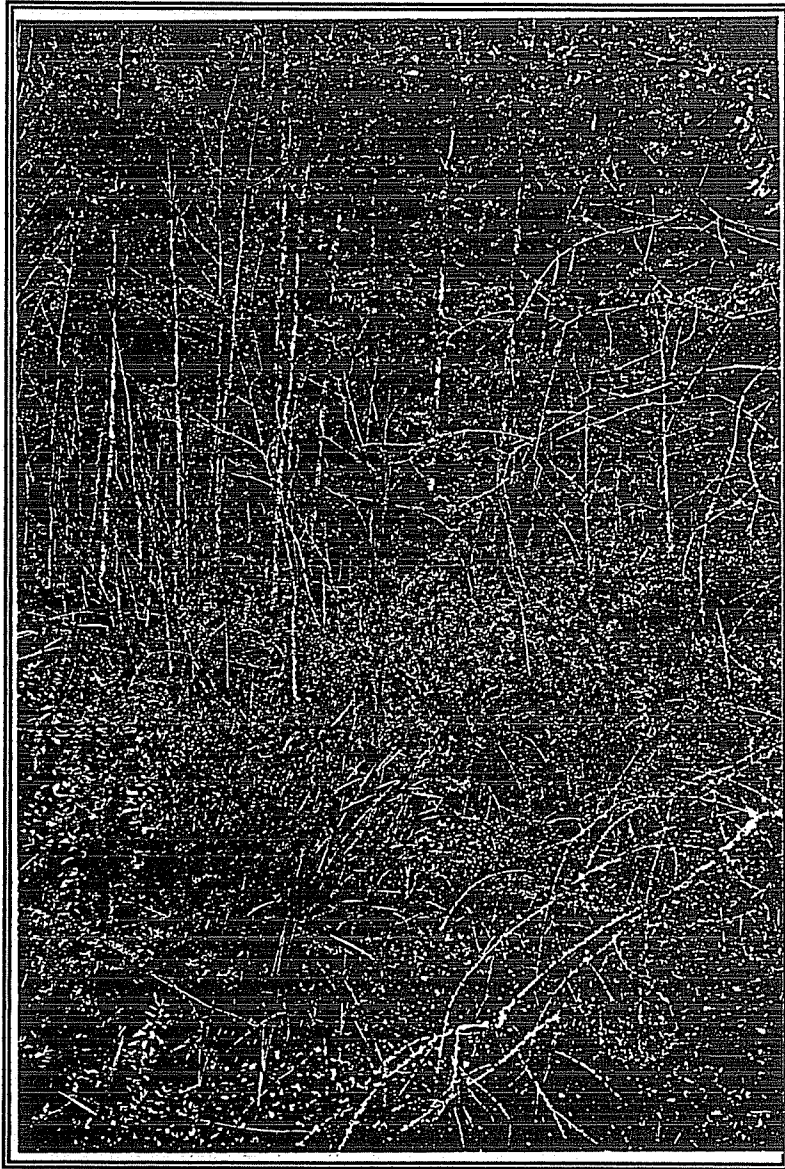
**NATURAL RESOURCE VALUES** The vegetative structure and species diversity provide habitat for numerous songbirds, woodpeckers, waterbirds, small raptors, small mammals, and reptiles. The dense and diverse emergent vegetation traps sediments and captures nutrients as water passes through the site. Abundant snags provide potential nest sites for cavity nesters.

**IMPACTS/DISTURBANCES** Water quality may be degraded by railroad maintenance of right-of-way vegetation. Hydrology has been altered. This is evident by the numerous snags present in the ponded area.

**MANAGEMENT RECOMMENDATIONS** Monitor railroad vegetative management to insure they are using best management practices to protect water quality on the site and downstream.

\* Based on best professional judgment and field assessment methods

SITE W3





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W4 SIZE: ≈ 1 acre HABITAT CLASS: Pond  
 LOCATION: North of Boonesferry / Jean Road  
 SEC. MAP NO.: 18 WL/DNA #: 18b DATE OF INVENTORY: 09-10-91  
21E-18 BD 600

Habitat Assessment Score: 77		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>M</u>
Sediment Trapping	<u>M</u>	Fish Habitat	<u>L-M</u>
Nutrient Retention	<u>H</u>	Wildlife Habitat	<u>H</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This pond is located within a railroad triangle north of the intersection of Boonesferry and Jean Road. It is potentially spring fed and water exits the site through a culvert under the railroad tracks to site W1. Water depth was approximately two and one half feet in September 1991. Emergent and aquatic vegetation is abundant and includes marsh pennywort, duckweed, reed canarygrass, cattail, smartweed, mannagrass, spikerush, and other grasses. The pond is surrounded by a multi-layered forest consisting of Oregon ash, black cottonwood, Pacific willow, cascara, Piper's willow, Scouler's willow, and Columbia River willow. Snags are also abundant. Mallards, nutria, and mosquito fish were observed in the water. Green-backed heron and a variety of songbirds were observed in trees and shrubs surrounding the pond.

**NATURAL RESOURCE VALUES** The emergent vegetation provides abundant food and cover resources for wintering and breeding waterfowl, nutria, and other aquatic species. The presence of year-round water and a multi-layered woodland buffer benefits a variety of resident and migrant wildlife; the trees and shrubs provide seeds, berries, perching and nesting sites, and shade. The snags in and surrounding the pond are potential nesting sites for woodpeckers, swallows and other cavity nesters. Floating logs provide perches and basking sites for waterfowl, waterbirds, and reptiles. The abundant emergent vegetation traps sediments and absorbs nutrients and pollutants.

**IMPACTS/DISTURBANCES** Traffic noise from Boonesferry Road may impact some wildlife species. The site is isolated from other natural areas by railroad tracks and roads. Water quality may be degraded by railroad maintenance.

**MANAGEMENT RECOMMENDATIONS** Maintain the site as it is. Monitor water quality to be sure railroad vegetation management practices are not degrading the water.

\* Based on best professional judgment and field assessment methods

SITE W4





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W6 SIZE: ≈ 1.5 acre HABITAT CLASS: Wetland Forest  
LOCATION: West of Tualatin Street Between Lower Drive and Rosewood Street  
SEC. MAP NO.: 18 WL #: 18a DATE OF INVENTORY: 09-10-91  
21E-18AB portions 2200, 2201, 2300, 2400

Habitat Assessment Score: 30		Range for Wetland Forests: 30 - 78	
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>L</u>	Vegetation Diversity	<u>L</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>L</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Groundwater Recharge	<u>M</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This forested wetland is dominated by Oregon ash, Himalayan blackberry, reed canary grass, and slough sedge. The site ponds water in small patches seasonally. It is surrounded by residential development with tall fencing. It's difficult for people and wildlife to access the site.

**NATURAL RESOURCE VALUES** It has low food and cover values for wildlife. Its primary wetland function is groundwater recharge.

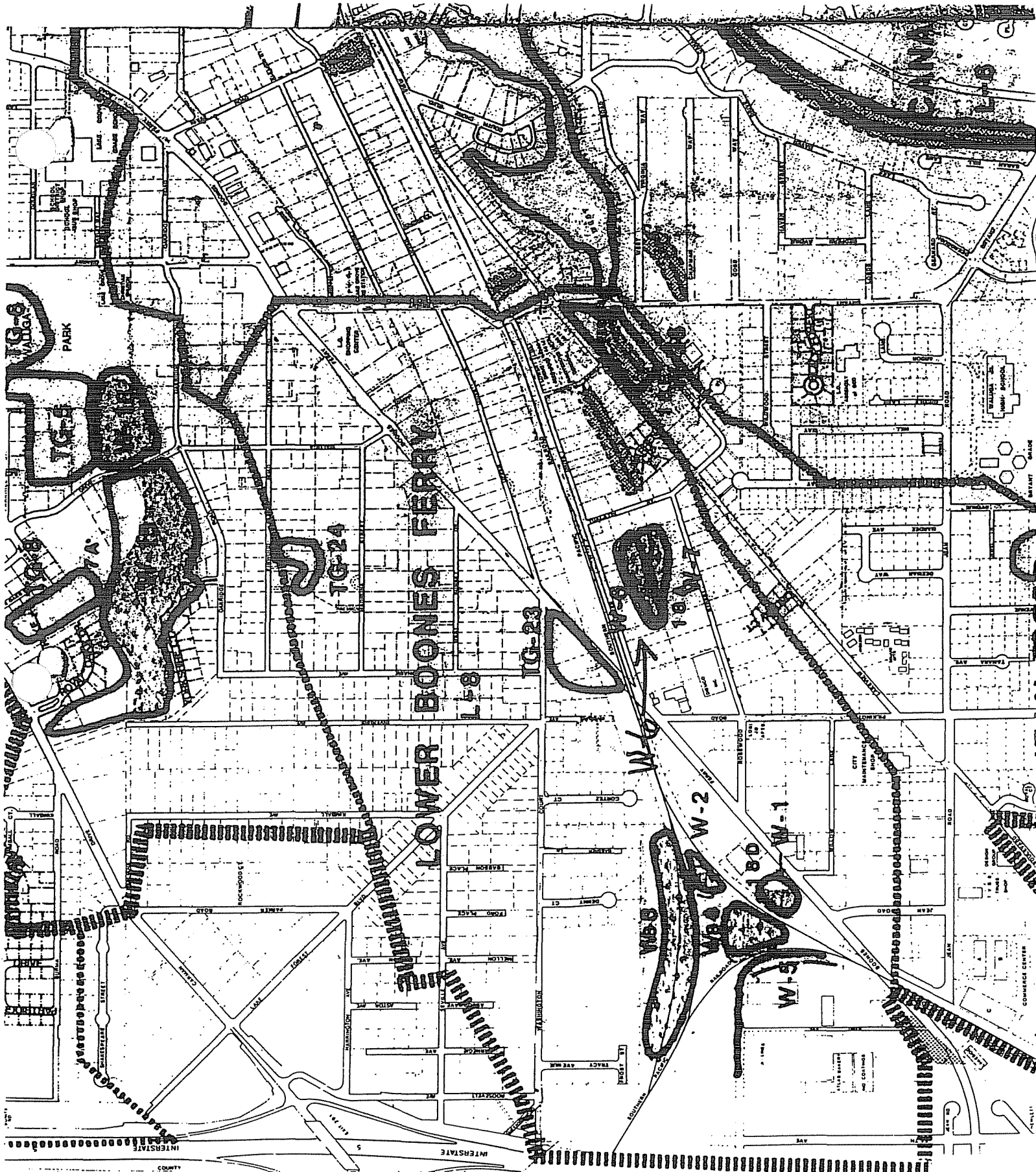
**IMPACTS/DISTURBANCES** There has been a recent fill for residential development north of the ash forest. This may impact the site hydrology. Himalayan blackberry is dominant in the understory. It covers dominant wetland plants such as slough sedge. The site is isolated due to development.

**MANAGEMENT RECOMMENDATIONS** Remove Himalayan blackberry to improve wildlife habitat. Identify whether the fill is a violation of the Clean Water Act.

\* Based on best professional judgment and field assessment methods

**SITE W6**





LOWER BOONES FERRY

TGE-24

L-8

W-6

W-2

W-1

W-8

W-9

W-10

W-11

W-12

W-13

W-14

W-15

W-16

W-17

W-18

W-19

W-20

W-21

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INTERSTATE

INTERSTATE

COMMERCE CENTER

CITY PARKING LOTS

Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W9 SIZE: ≈ 1 acre

HABITAT CLASS: Wetland Forest

LOCATION: South of Bergis Road

SEC. MAP NO.: 15 WL/DNA #: 15a

DATE OF INVENTORY: 09-20-91

21E-15 B 600

Habitat Assessment Score: 47

Range for Wetland Forests: 30 - 78

Resource Value Assessment \*

Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>L</u>	Vegetation Diversity	<u>M</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>M</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>M</u>
Groundwater Recharge	<u>H</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This wetland forest is located in the headwaters of Lost Dog Creek south of Bergis Road. It is surrounded by agricultural land. The forest canopy is dominated by Oregon ash. The east and south portions of the site support an upland understory including holly, hazelnut, red hawthorn, snowberry, sword fern, Himalayan blackberry, and ivy. The northwest corner supports wetland vegetation including red-osier dogwood, manna grass, avens, piggyback, and slough sedge. This portion of the site ponds water seasonally and drains to the north.

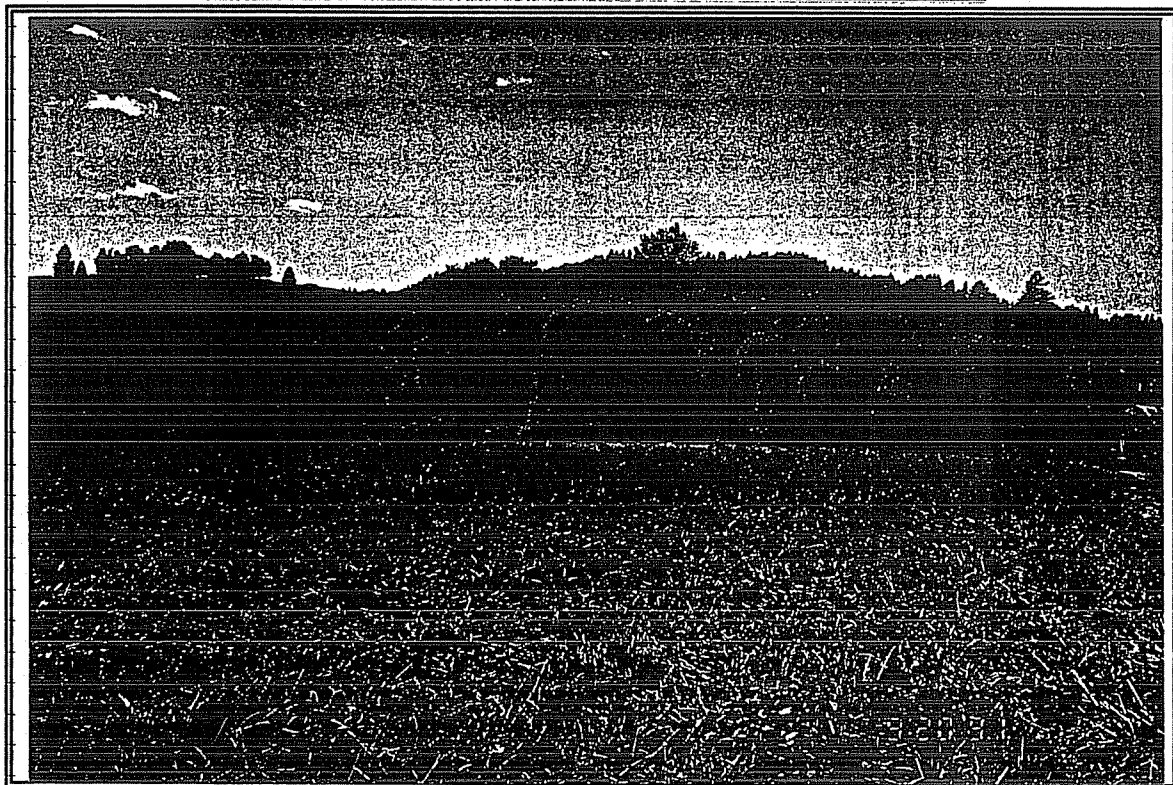
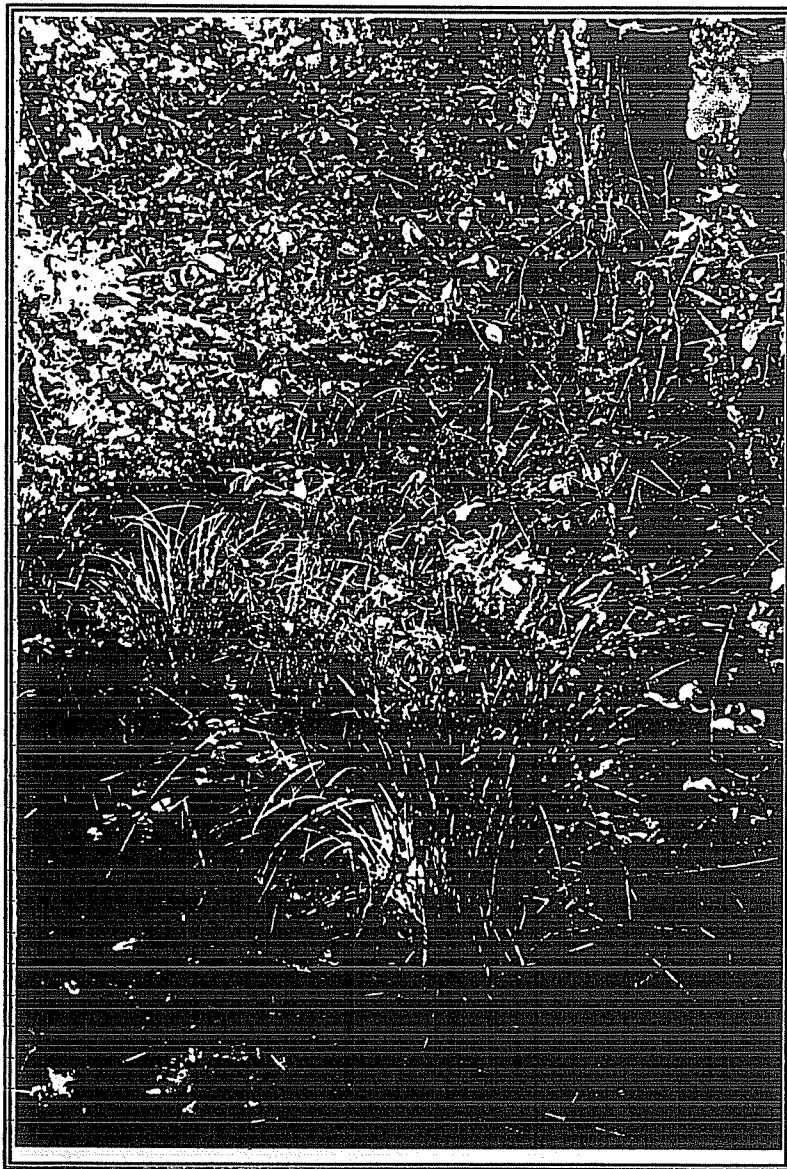
**NATURAL RESOURCE VALUES** Site W9 is a headwater area for Lost Dog Creek. It is culverted tiled, channelized, and interrupted by numerous roads before it drains into Lake Oswego. The variety of vegetative structure and species provide moderate food and cover resources for wildlife. Wildlife habitat value is reduced due to the dominance of Himalayan blackberry and ivy.

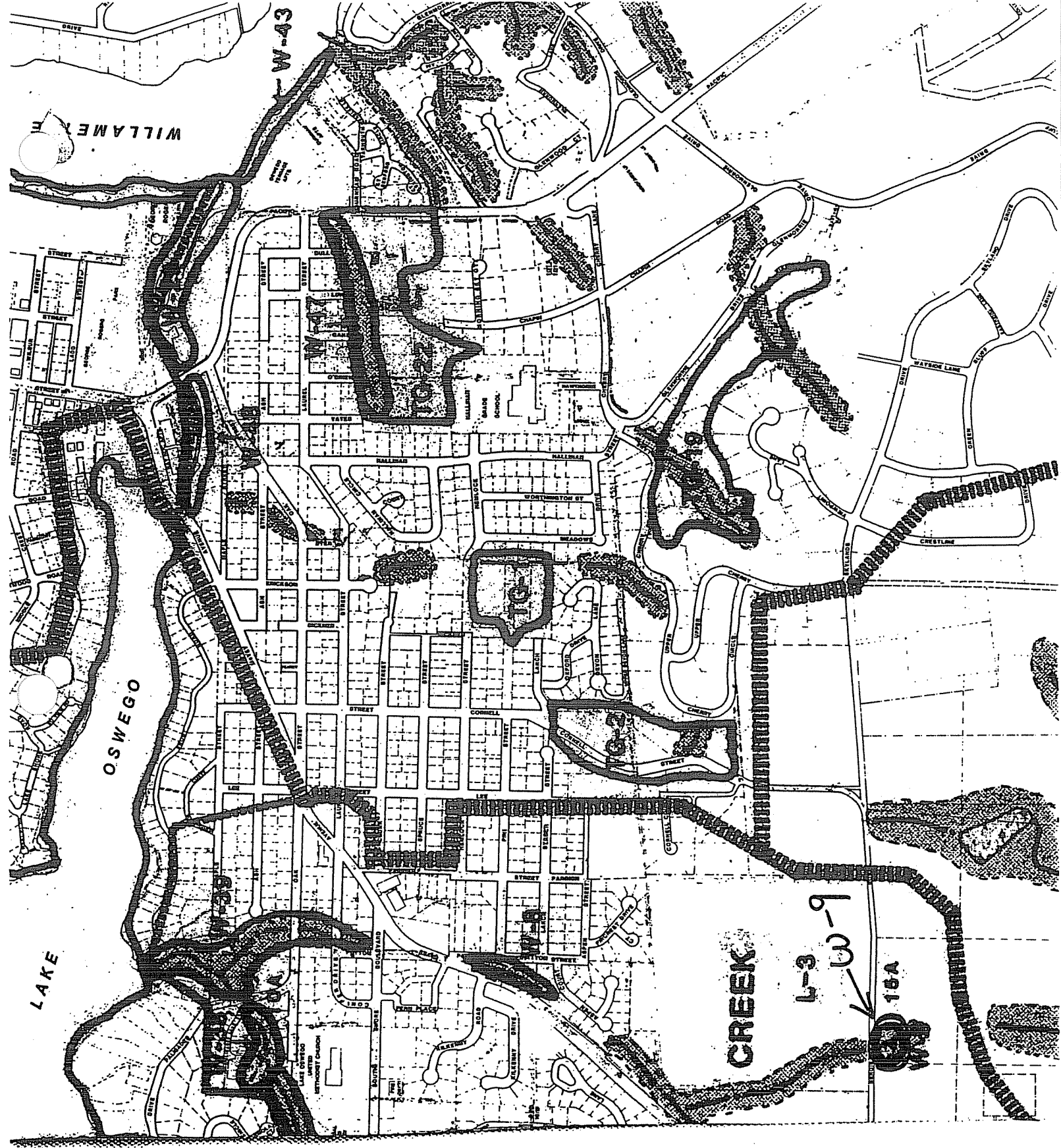
**IMPACTS/DISTURBANCES** Himalayan blackberry and English ivy are common on the site. They are especially dense on the perimeter of the forest. These invasive species inhibit native plant growth and plant diversity which limits food and cover resources for wildlife.

**MANAGEMENT RECOMMENDATIONS** Preserve upland ash forest as a buffer to protect the wetland.

\* Based on best professional judgment and field assessment methods

SITE W9





LAKE

OSWEGO

CREEK

L-3  
W-9

16A

16

W-43

WILLAMETTE

2

Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W10 SIZE: ≈ 18 acres HABITAT CLASS: Mosaic of wetlands and uplands  
LOCATION: Bryant Woods Park  
SEC. MAP NO.: 17,20 DNA #: 1 DATE OF INVENTORY: 09-24-91  
21E-17 CC 700 ; 21E-20 BB 1500, 1600, 1700, 1800, 1900, 2000

Habitat Assessment Score: 96			
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>M-H</u>
Sediment Trapping	<u>M</u>	Vegetation Diversity	<u>H</u>
Nutrient Retention	<u>M</u>	Wildlife Habitat	<u>H</u>
Sensitive Species	<u>H</u>	Connectivity	<u>H</u>
Education Potential	<u>H</u>	Recreation	<u>H</u>
		Wildlife Travel Corridor	<u>H</u>

**GENERAL DESCRIPTION** Bryant Woods Park is linked to other natural areas via Oswego Canal. Wildlife species can travel from the Tualatin River to Bryant Park via Oswego Canal. The diversity of vegetation and vegetative communities attracts diverse wildlife, and creates a dynamic system of wildlife movement between the communities. A sensitive species, the red-legged frog, breeds in the pond. Waterfowl winter in ponded areas. Bryant Woods Park, a mosaic of wetlands and uplands, contains the greatest diversity of all the inventoried sites. The wetlands include ponds, springs, emergent and forested vegetation. The uplands include deciduous and coniferous forest and meadowland. Bryant Woods is currently used by school groups, scouts, neighbors, and bird watchers. Trails have been built through the park. At present, human use of the site does not appear to conflict with wildlife habitat use.

**NATURAL RESOURCE VALUES** The open water and emergent wetland provide habitat for wintering and breeding water fowl, heron, beaver, nutria, and frogs. Water provides refreshment for all species. The upland forest provides food and cover, perching and nesting sites for raptors, woodpeckers, and a variety of song birds and small mammals. The meadows support small mammals and snakes. Water quality appears excellent; an important tributary spring is located on the south end of the site. The wetlands are important for groundwater recharge.

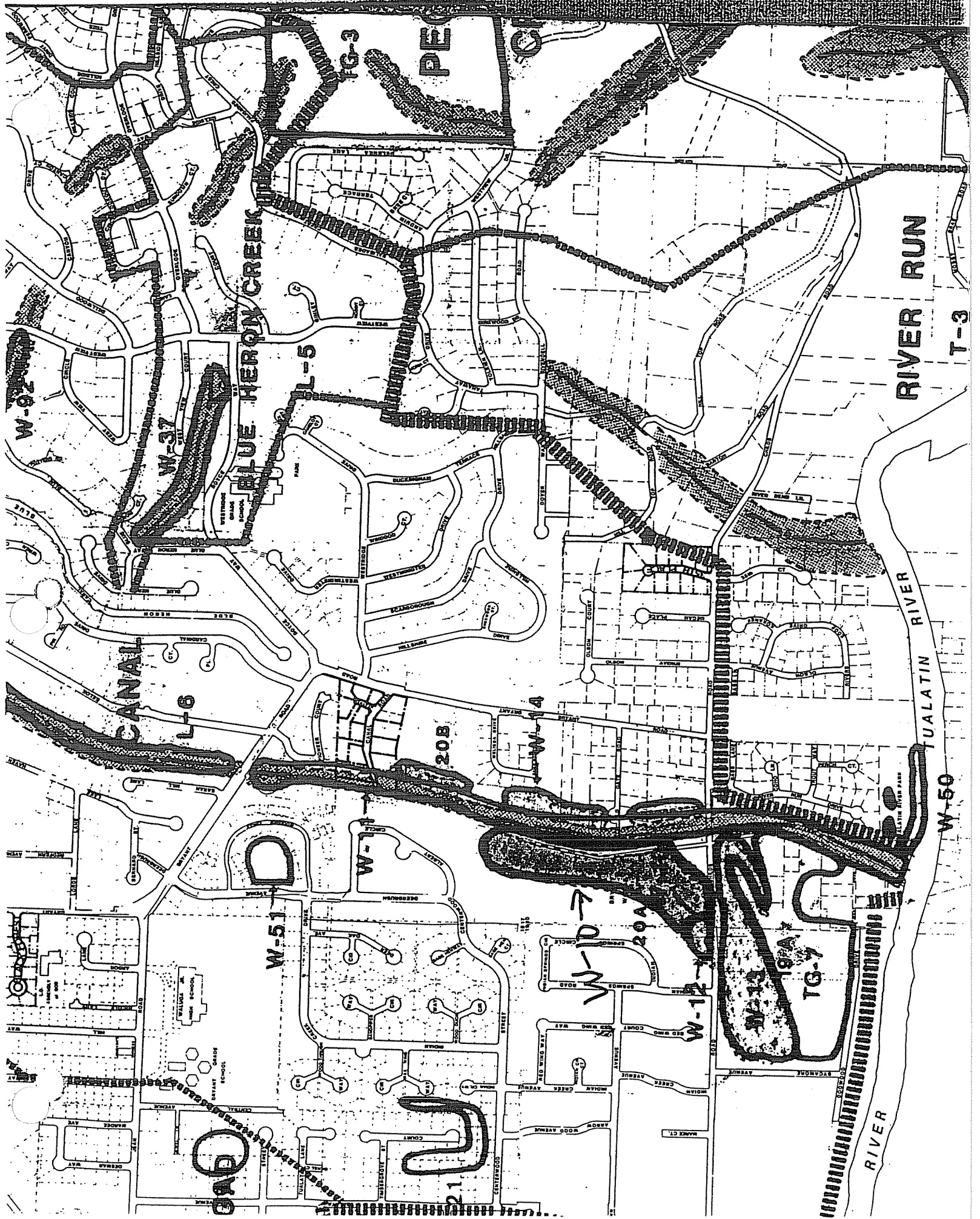
**IMPACTS/DISTURBANCES** Surrounding residents are discarding yard debris in the edge of the forest.

**MANAGEMENT RECOMMENDATIONS** Remove bullfrogs from area to maintain a viable population of the sensitive red-legged frog. Create deeper and larger ponds and channels in the reed canarygrass meadow to support greater numbers of wintering waterfowl. Plant a tree/shrub buffer around the margins of some of the ponds to enhance wildlife habitat and potentially eliminate some reed canarygrass. Install more nest boxes for cavity nesting species such as wood duck, swallows and chickadees.

\* Based on best professional judgment and field assessment methods

**SITE W10**





PE

BLUE HERON CREEK

W-02

W-37

L-5

L-6

20B

W-51

W-10

20A

W-12

TG-7

W-50

RIVER RUN

T-3

TUALATIN RIVER

W-13 19A

WALLACE M. HIGH SCHOOL

21

Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W12 SIZE: ≈ 1 acre

HABITAT CLASS: Pond

LOCATION: Indian Spring (Child's Road)

SEC. MAP NO.: 1920 WL/DNA #: 20a

DATE OF INVENTORY: 09-24-91

21E-19 AA 9800

Habitat Assessment Score: 74	Range for Ponds: 10 - 77		
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>M</u>
Sediment Trapping	<u>M</u>	Fish Habitat	<u>M</u>
Nutrient Retention	<u>M</u>	Wildlife Habitat	<u>H</u>
Education Potential	<u>M</u>	Size/Connectivity	<u>H</u>
Sensitive Species	<u>H</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** Indian Spring is located north of Child's Road and southwest of Bryant Park. It is bordered by forested wetlands and Child's Road which was built on the edge of the spring or partially encroached on the original spring area. The forested wetland is dominated by Oregon ash in the canopy and red-osier dogwood and rough horsetail in the understory. Aquatic and emergent vegetation growing in the spring includes water cress, American speedwell and water foxtail which provide food and cover for aquatic species. Three-spined sticklebacks were observed in the spring. Red-legged frogs also breed in the spring-fed water in Bryant Park.

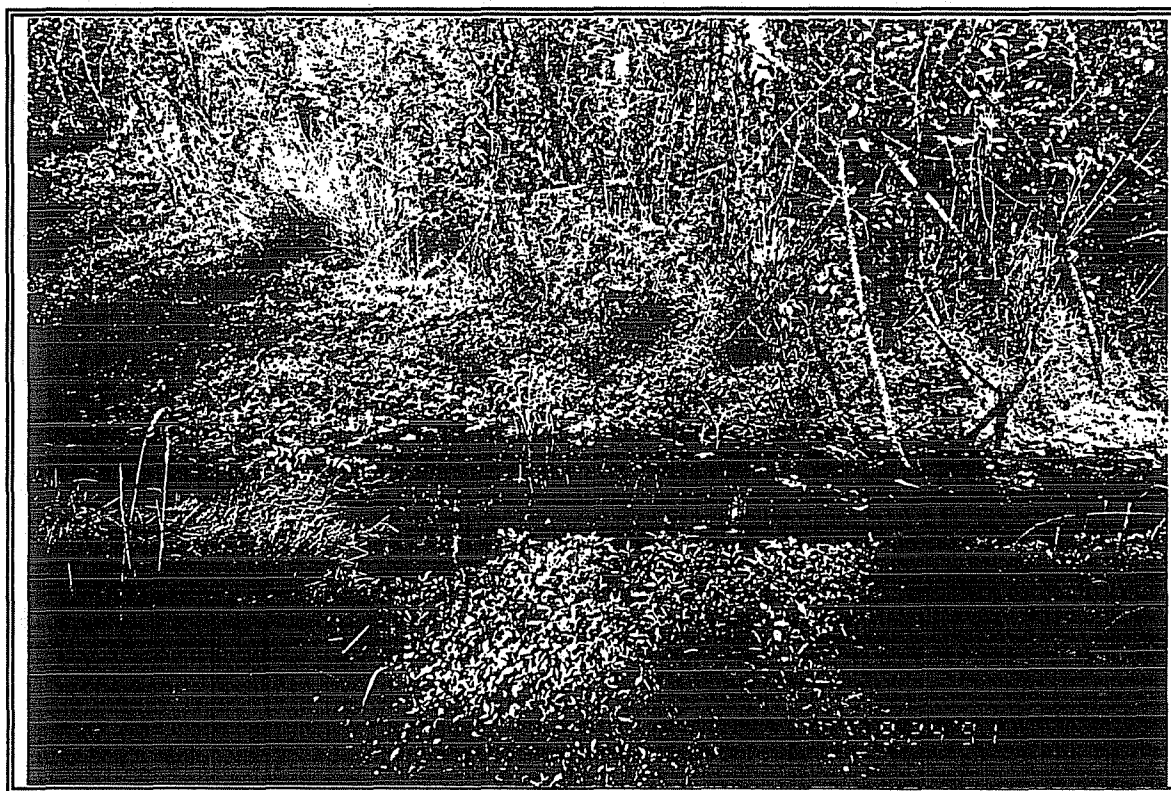
**NATURAL RESOURCE VALUES** Indian Spring is the main source of water for Bryant Woods Park. The water is cool and of apparent high quality. A sensitive species, the red-legged frog, breeds in the spring-fed water downstream in Bryant Woods Park. The diverse structure and moderately undisturbed condition of the surrounding forest provides good cover and nesting sites for wildlife species. Snags provide potential nest sites for cavity nesters. Downed woody debris, trees and branches, provide potential breeding sites for salamanders. The site's wildlife habitat value is enhanced by its linkage to other natural areas such as Bryant Woods Park, Oswego Canal, and a wooded area south of Child's Road.

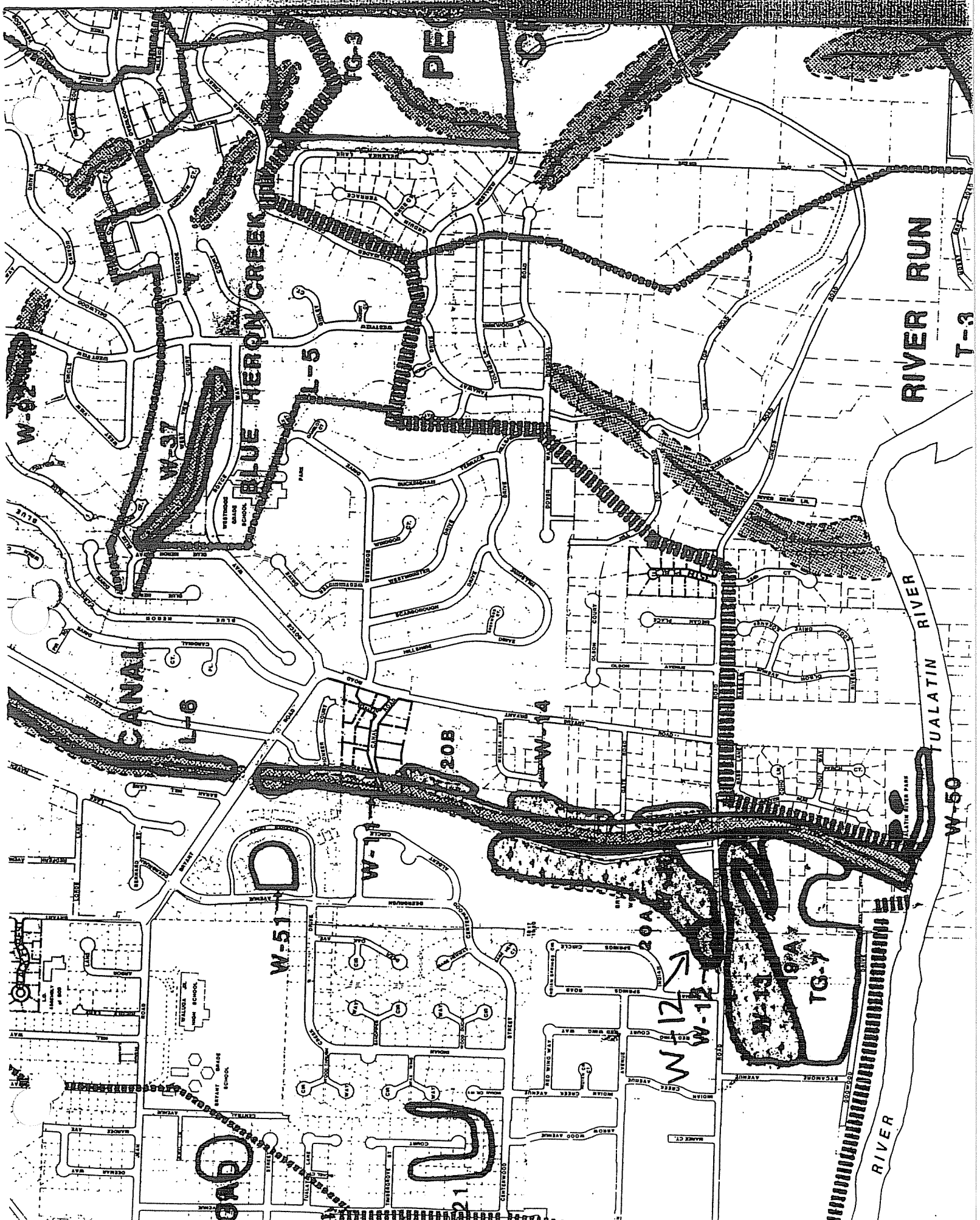
**IMPACTS/DISTURBANCES** Child's Road was constructed immediately adjacent to the spring leaving no buffer. The road is not curbed and stormwater runoff can directly enter the water. The traffic poses a threat to wildlife crossing the road to drink at the spring.

**MANAGEMENT RECOMMENDATIONS** Install curbs to protect the spring from roadside pollutants to preserve water quality.

\* Based on best professional judgment and field assessment methods

SITE W12





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T-3  
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W-50  
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Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W13    SIZE: ≈ 8 acres    HABITAT CLASS: Wetland Forest  
LOCATION: South of Childs Road  
SEC. MAP NO.: 19, 20 WL/DNA #: 19a    DATE OF INVENTORY: 09-24-91  
21E-19AD 100; 21E-20BC 400, 500, 600

Habitat Assessment Score: 61		Range for Wetland Forests: 30 - 78	
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>H</u>
Sediment Trapping	<u>L</u>	Vegetation Diversity	<u>M</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>M</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>H</u>
Groundwater Recharge	<u>H</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This forested wetland is located south of Childs Road adjacent to Bryant Woods Park. It is part of a forested link between the Tualatin River and Bryant Park. The forest canopy is dominated by Oregon ash. The shrub understory is dominated by spirea and red-osler dogwood. The understory is hummocky and is dominated by wetland species including avens, redtop, velvet grass, creeping buttercup, slough sedge, and other sedge species. Sword fern and Himalayan blackberry occur occasionally.

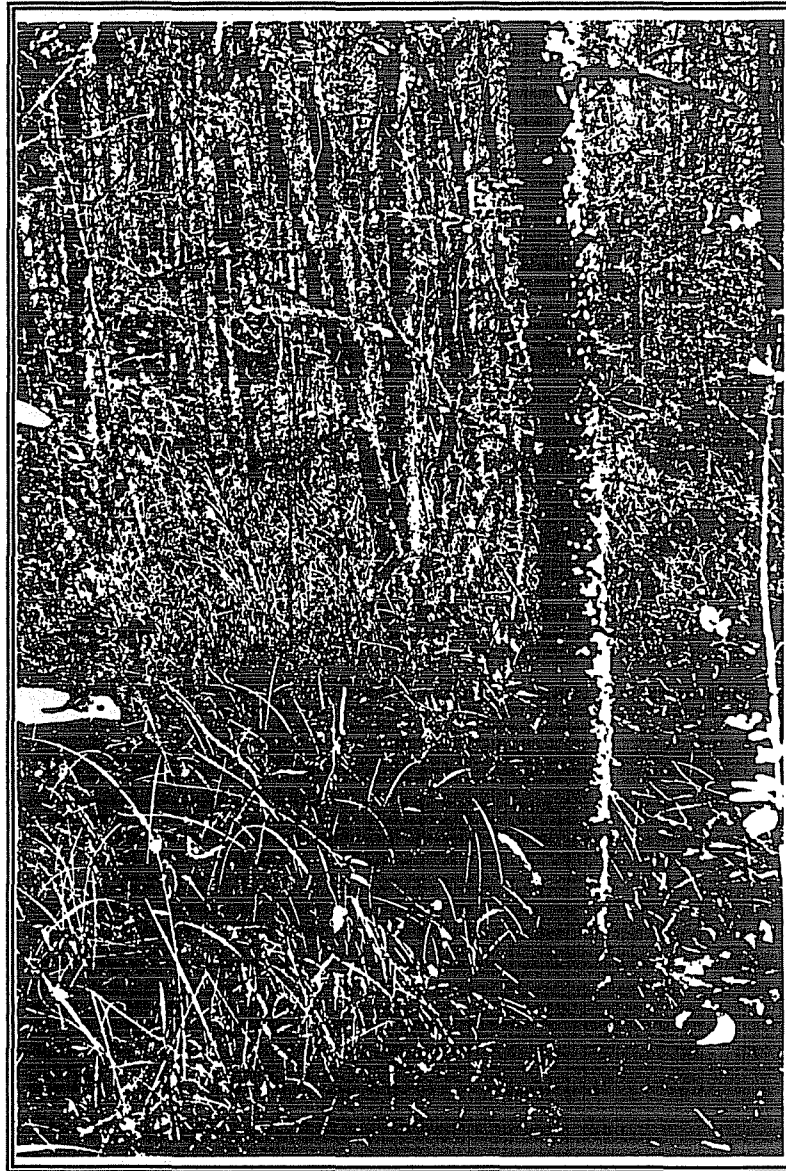
**NATURAL RESOURCE VALUES** This site may be the groundwater recharge area for Indian Spring which feeds Bryant Woods Park. Its location between the Tualatin River and the park is an important linkage. Wildlife travel through the site to access the park and the river. Vegetation on the site is in fairly good condition without invasive species dominating the site.

**IMPACTS/DISTURBANCES** None

**MANAGEMENT RECOMMENDATIONS** Preserve this wetland as an open space link between the Tualatin River and Bryant Woods Park. Determine the flow of water and the significance of the site as a groundwater recharge area for Indian Springs.

\* Based on best professional judgment and field assessment methods

SITE W13





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W14 SIZE: ≈ 2.5 acres HABITAT CLASS: Wetland Forest  
LOCATION: East of Oswego Canal; North of Childs Road  
SEC. MAP NO.: 17, 20 WL/DNA #:        DATE OF INVENTORY: 09-24-91

<sup>800</sup>  
<sup>1200</sup>  
<sup>1300</sup>  
21E-17CC ; 21E-20BB 100, 200, 301, 1200, 1300, 2103, 2200

Habitat Assessment Score: 49	Range for Wetland Forests: 30 - 78		
<b>Resource Value Assessment *</b>			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>L</u>	Vegetation Diversity	<u>M</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>M</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>H</u>
Groundwater Recharge	<u>M</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** These forested wetlands are located in a depression area east of Oswego Canal and west of residential development. The site consists of three wetland pockets that seasonally pond water. The canopy is dominated by Oregon ash. There are also a few mature black cottonwood trees that are at least six feet in diameter. The understory has a scattering of shrubs including ninebark and spirea. Blackberry is common. Slough sedge and water parsley occur in the water areas.

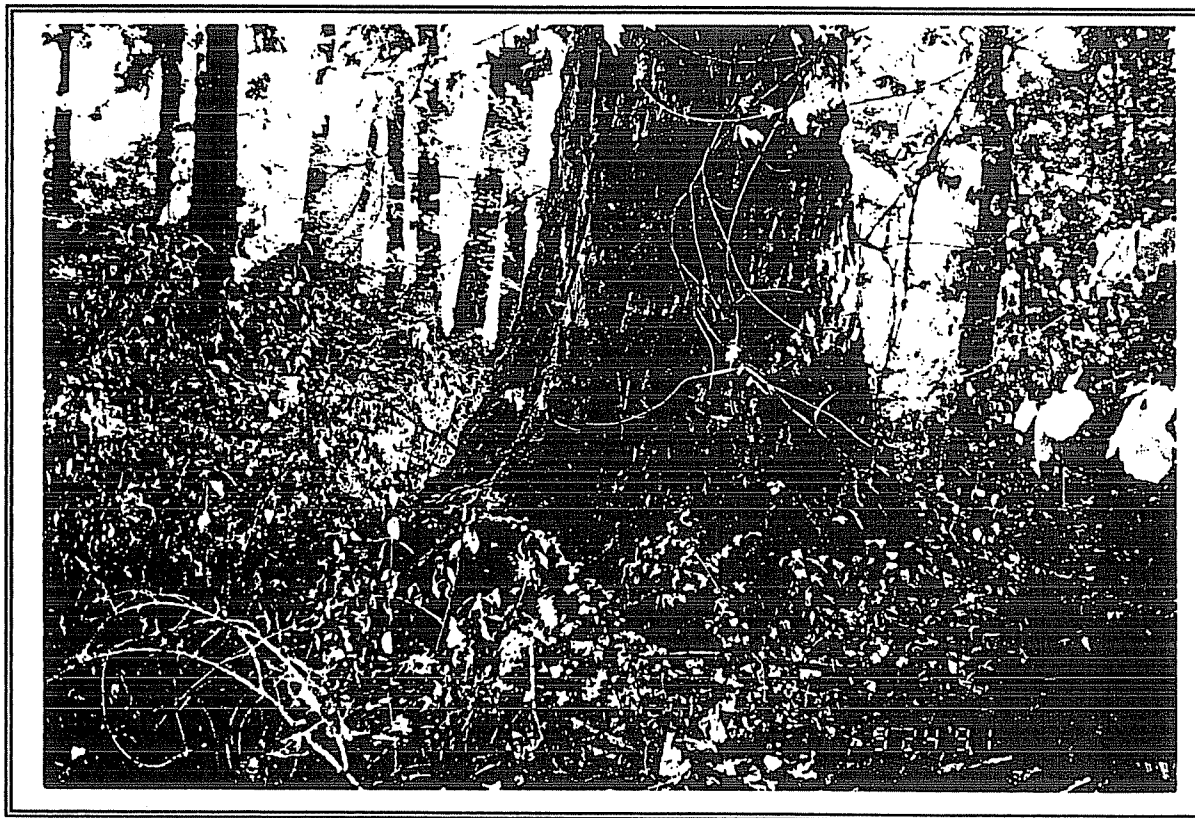
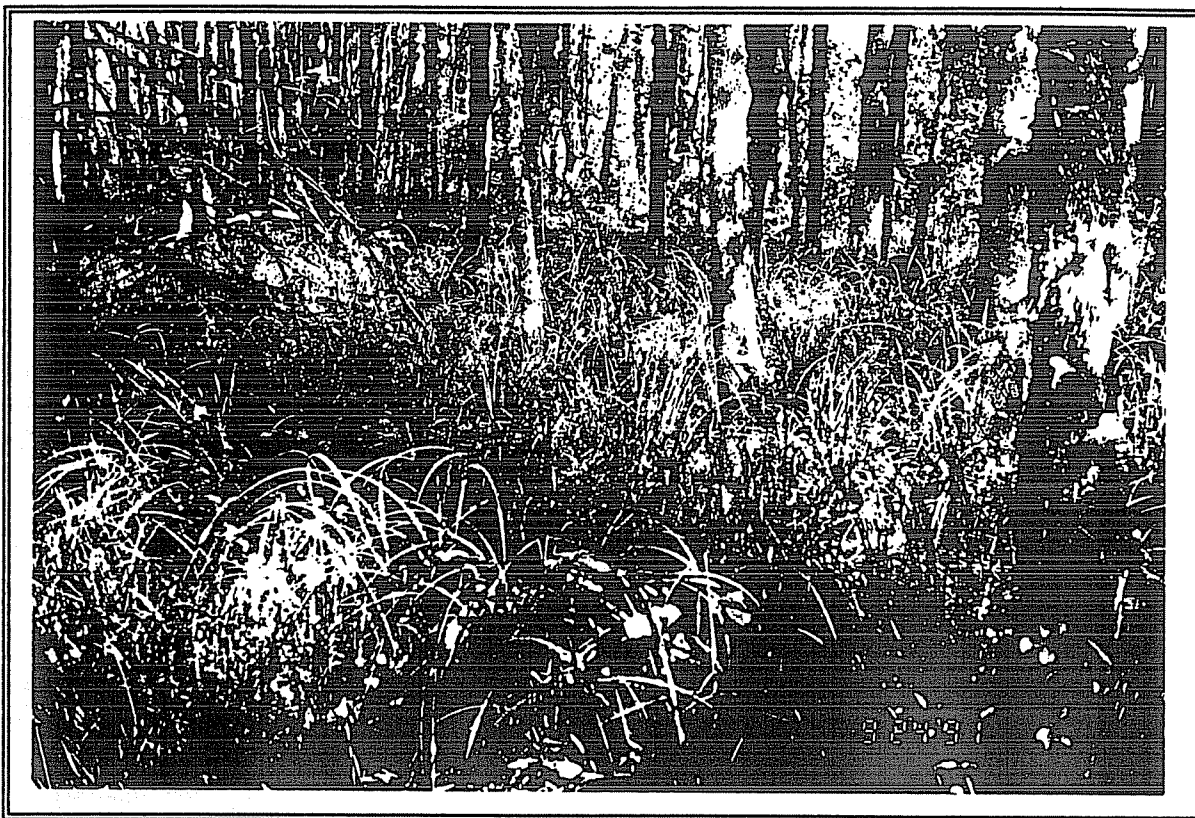
**NATURAL RESOURCE VALUES** Wildlife habitat is moderate. The site buffers Oswego Canal and is used as a travel corridor by small wildlife species. The site includes at least three spectacular black cottonwood trees. The trees are estimated to be about one hundred years old. Dead branches of the cottonwoods and snags provide potential nest sites for cavity nesters. Downed woody debris provides potential breeding sites for salamanders.

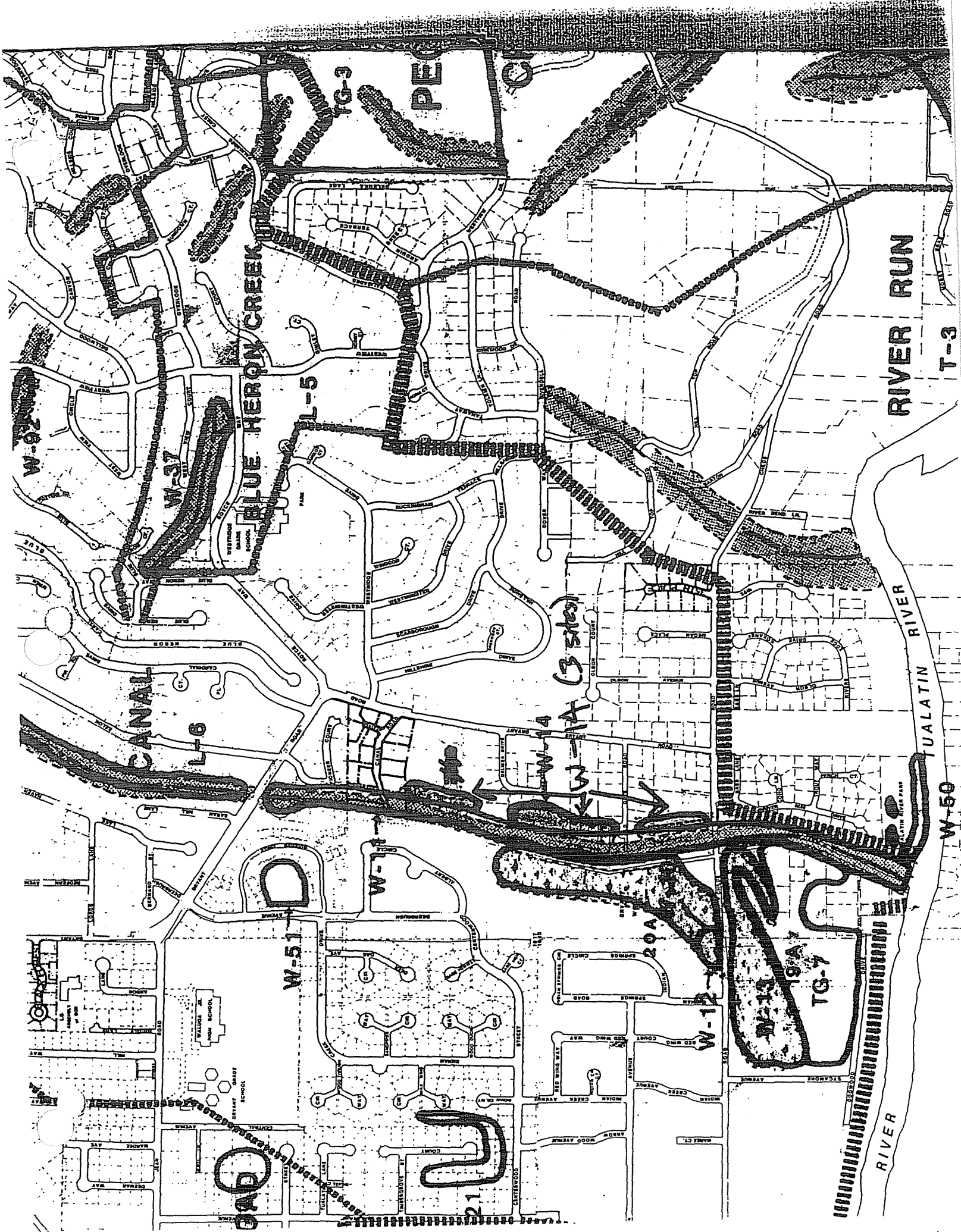
**IMPACTS/DISTURBANCES** The site has been disturbed by past filling and dumping of yard debris. The City of Lake Oswego has posted "No Dumping" signs which may alleviate the problem.

**MANAGEMENT RECOMMENDATIONS** Remove yard debris and garbage that has been dumped on-site. Preserve mature cottonwood trees and snags.

\* Based on best professional judgment and field assessment methods

SITE W14





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W15A SIZE: ≈ 13.5 acres HABITAT CLASS: Forested Wetland  
 LOCATION: West of Waluga Park and West of City's Fill/Dump Site  
 SEC. MAP NO.: 7 WL/DNA #: 7a/24 DATE OF INVENTORY: 09-27-91  
21E-7 AC 2300, 2400 ; 21E-7DB 302, 800, 1301, 2200, 2300, 2400

Habitat Assessment Score: 78		Range for Forested Wetlands: 30 - 78	
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>M-H</u>
Sediment Trapping	<u>L</u>	Vegetation Diversity	<u>H</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>H</u>
Educational Potential	<u>H</u>	Size/Connectivity	<u>H</u>
Groundwater Recharge	<u>L</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This portion of W15 is the less disturbed area west of the City's fill/dump site. It is a flat basin bordered on one side by a stream and is relatively large. Residential development is encroaching on three sides, and currently development is eliminating jurisdictional wetlands. The vegetation community is an uncommon mix of Oregon ash and Oregon white oak, a tree species not often found in wetlands, but known to occur or dominate some wetlands in western Oregon. The shrub layer is made up of willow, rose, hazel, and spiraea. Slough sedge occurs in clumps occasionally, and reed canarygrass forms large patches scattered about intermixed with himalayan and trailing blackberry.

The site W15B, approximately 6.5 acres in size, west of Waluga Park was not rated due to its highly disturbed condition. The City has used the site for years as a dump site for fill and debris. Only very small areas of wetland remain on this site along the southern edge where a drainage channel is located and along the northern edge where a sewer line has been placed. The sewer line may be leaking or have altered the groundwater movement. Water seeps to the surface and cattails are dense. The large oaks nearest the sewer line are dead or dying, probably due to the excessive saturation that is the present condition.

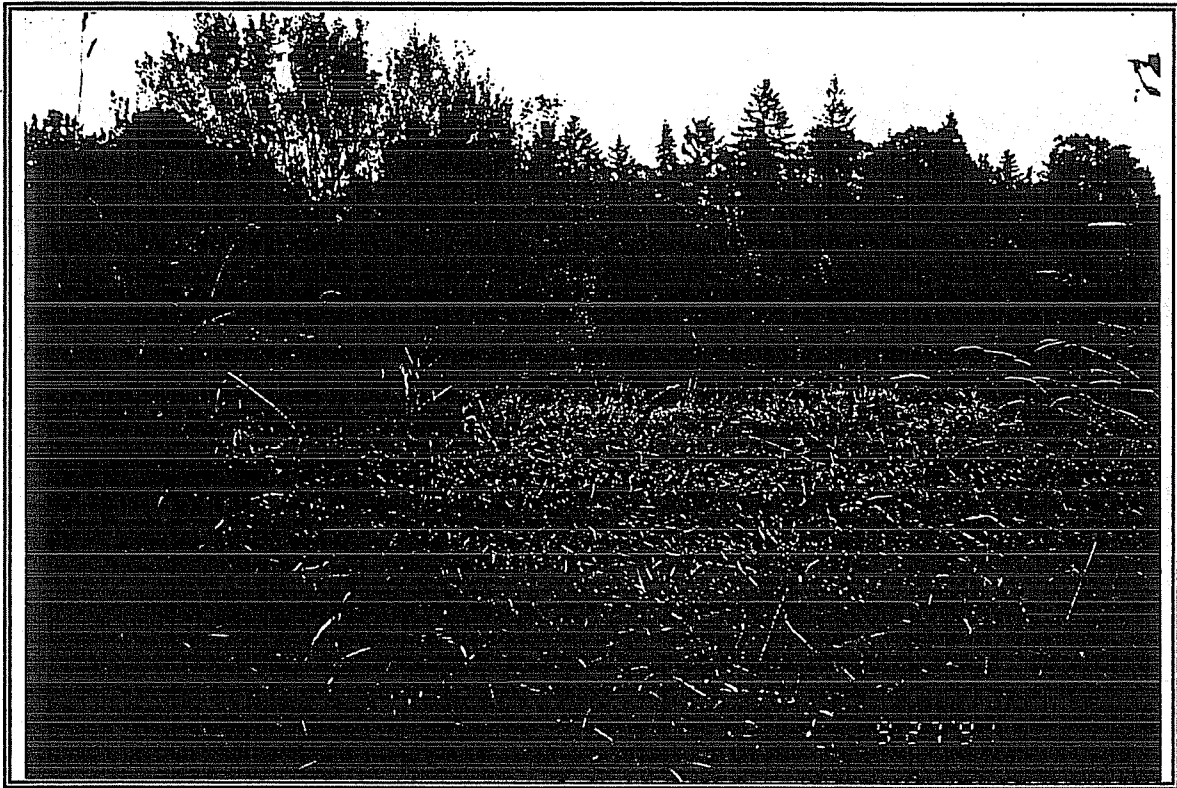
**NATURAL RESOURCE VALUES** The size of the area, size of the trees, and diversity in structure and species composition of the understory contribute to the high wildlife habitat rating. The "edge effect" is increased by the different plant communities and the large open space. The oak/ash type of wetland is not common and very few representatives of this type remain in urbanized areas.

**IMPACTS/DISTURBANCES** Residential development is encroaching on three sides. No buffers are being left between this jurisdictional wetland and development.

**MANAGEMENT RECOMMENDATIONS** This area west of the fill dump site should be protected unaltered as an open space and construction of residences to the edge prohibited. The hydrology that has maintained this wetland should not be altered by adjacent development, and water quality of the main drainage along the south side should be improved or maintained from further degradation.

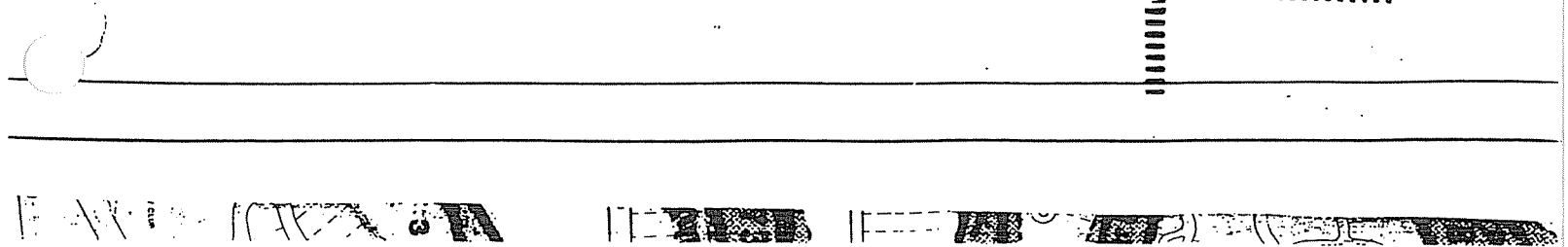
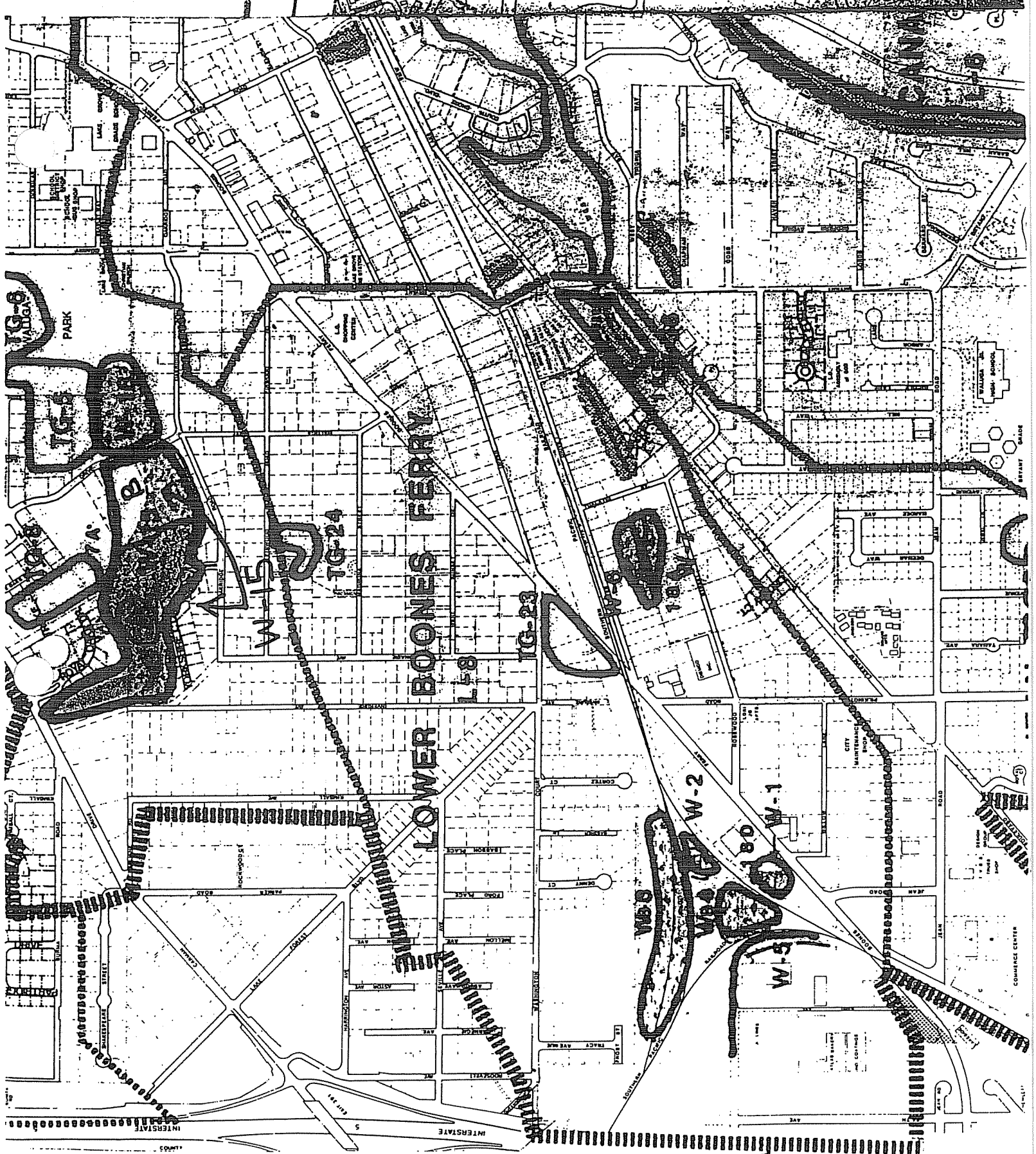
\* Based on best professional judgment and field assessment methods

**SITE W15A**



**SITE W15B**





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W16 SIZE: ≈ 5 acres HABITAT CLASS: Forested Wetland  
LOCATION: Waluga Park  
SEC. MAP NO.: 7 DNA #: 8 DATE OF INVENTORY: 9/27/91  
21E-7AD 3000; 21E-7DB 800; 21E-7DA 600, 700

Habitat Assessment Score: 61

Range for Forested Wetlands: 30 - 78

Resource Value Assessment \*

Stormwater Storage	<u>H</u>	Undisturbed Condition	<u>M</u>
Sediment Trapping	<u>M</u>	Vegetation Diversity	<u>L</u>
Nutrient Retention	<u>M</u>	Wildlife Habitat	<u>M</u>
Educational Potential	<u>H</u>	Size/Connectivity	<u>M</u>
Groundwater Recharge	<u>L</u>	Recreation	<u>L</u>

GENERAL DESCRIPTION

This site is the wetland portion of Waluga Park now supporting a dense willow stand west of the ballfields. A distinct stream channel meanders through the site that has water during the rainy season but is dry in late summer/fall. The site is a nearly homogenous stand of willows and appears to be second growth. Taller trees are black cottonwood, aspen, Oregon ash, and cascara. Slough sedge dominates the groundcover with small-fruited bulrush, and smartweed. Clumps of reed canarygrass also occur throughout and is most dense in the opening near Waluga Rd. Hazel, spirea, and blackberry make up a shorter layer under the willows. Originally this wetland extended farther east, but the ballfields were constructed on some of the wetlands.

NATURAL RESOURCE VALUES

Although not a diverse vegetation community, the denseness and seasonal water gives greater wildlife values. Flood storage was rated high because of the large size of the area and the extensive network of low spots that can slow the overflow from the channel that meanders through the site.

IMPACTS/DISTURBANCES

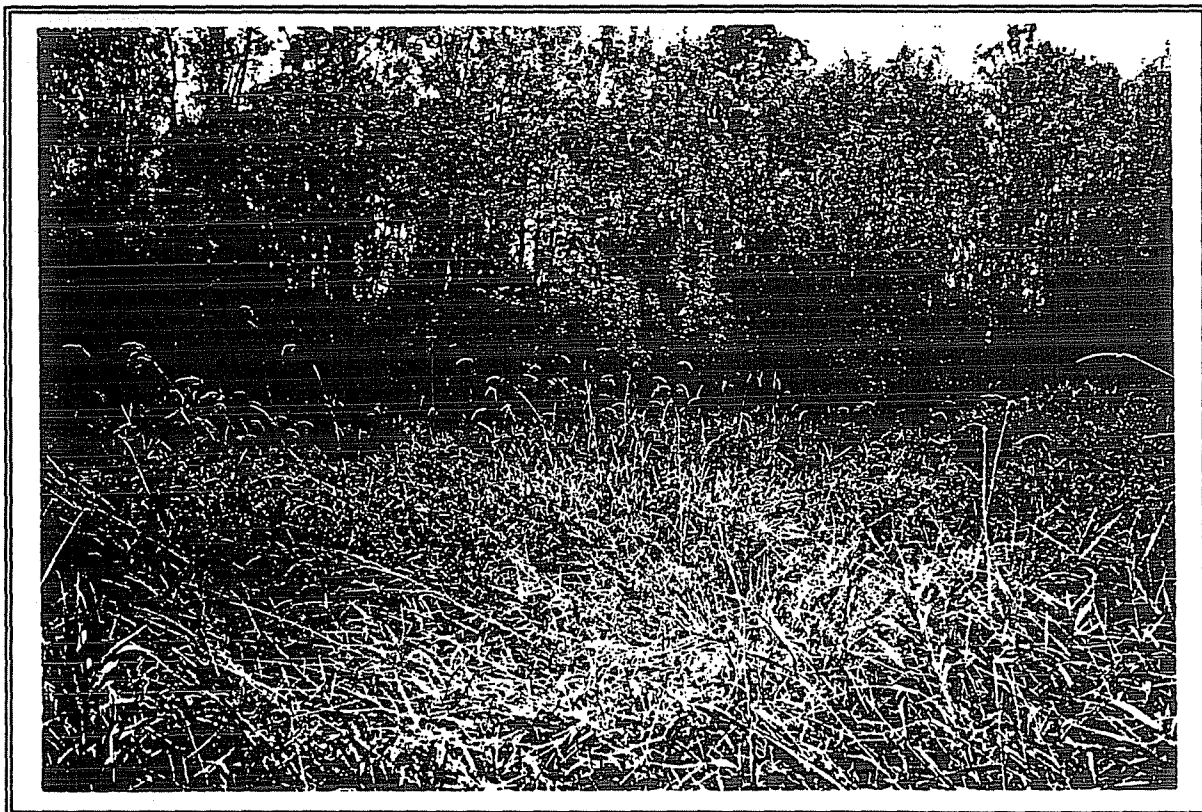
The area appears to be fairly recent second growth and may have been cleared for pasture some years ago. The eastern edge of the wetland was filled to construct the ballfields.

MANAGEMENT RECOMMENDATIONS

Leave this area natural for wildlife use and birdwatching from the trail along the north edge.

\* Based on best professional judgment and field assessment methods

SITE W16



Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W18 SIZE: < 0.5 acres HABITAT CLASS: Pond  
LOCATION: At Mercantile Village on Mercantile Dr.  
SEC. MAP NO.: 8 WL/DNA #: 8B DATE OF INVENTORY: 09-27-91  
21E-88C (Supplemental) 1000

Habitat Assessment Score: 20		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>M-H</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>L-M</u>	Wildlife Habitat	<u>L</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>L</u>

GENERAL DESCRIPTION

This small pond was created during the construction of the Mercantile Village roads and parking lots. Cattails and small-fruited bulrush grow along the edge. One duck was observed, but the pond is too small and too isolated by commercial and residential development and exposed to serve as wildlife habitat. Water quality looked very bad. Water was dark gray and bubbles rose to the surface periodically.

NATURAL RESOURCE VALUES

The artificial pond retains sediment carried in by the stream. Nutrient retention/removal capability was rated only moderate because the nutrient load appears to be greater than the capacity of the pond and associated biota to remove them.

IMPACTS/DISTURBANCES

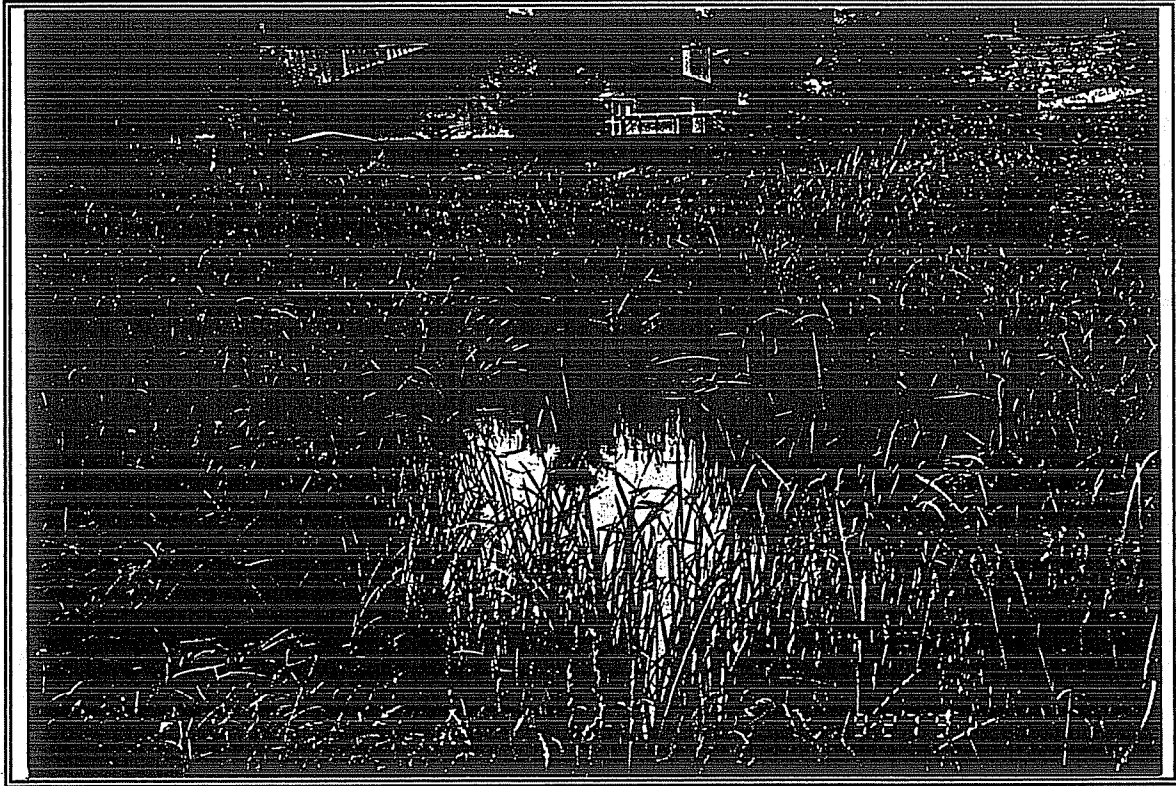
This is an artificially created pond on a former stream channel which has also been drastically altered from the natural condition. Water quality of inflowing water is visibly very poor.

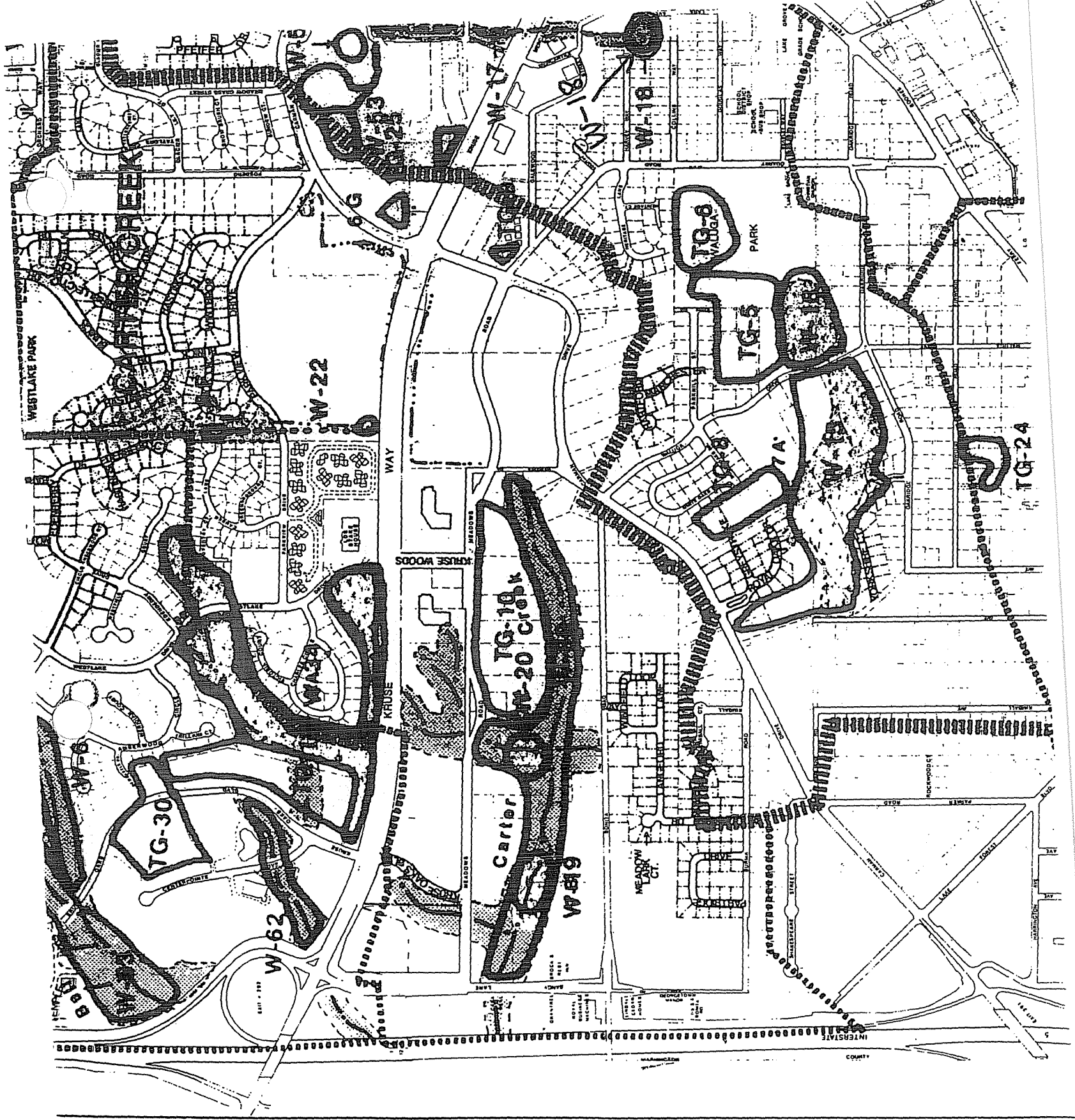
MANAGEMENT RECOMMENDATIONS

Planting additional buffer may provide some cover and forage for birds, but the proximity of streets and residential and commercial development will exclude most other small mammal species. Monitor water quality to determine sources of contamination and eliminate polluted effluents.

\* Based on best professional judgment and field assessment methods

**SITE W18**





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W19 SIZE: < 0.5 acre HABITAT CLASS: Pond  
LOCATION: At End of Carter Creek Before Creek is Culverted Under Bangy Lane  
SEC. MAP NO.: 7 WL/DNA #: 7B DATE OF INVENTORY: 10-02-91  
21E-7BB 400,500

Habitat Assessment Score: 33		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>L-M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>H</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>L</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>L</u>

GENERAL DESCRIPTION

The pond is a classic mitigation design on the lower end of Carter Creek before it is culverted under Bangy Lane. It offers limited wildlife habitat because of the monotypic growth of reed canarygrass and lack of riparian vegetation. There is no screening from the apartment complex on the south bank above the pond. The south bank is high and steep. The north bank is more gently sloping. Water quality appears very low in the pond and at the outflow. Water is grayish, and the pond is full of algae mats. Some improvement may occur when higher flows flush the channel during winter.

NATURAL RESOURCE VALUES

The excavation and low dam constructed to create this mitigation pond allows sediments to fall out from the stream flow. The water quality was visually poor at low flow in late fall and the nutrient load may exceed the capacity of the wetland to remove nutrients. Flood storage is moderate because the dam is low.

IMPACTS/DISTURBANCES

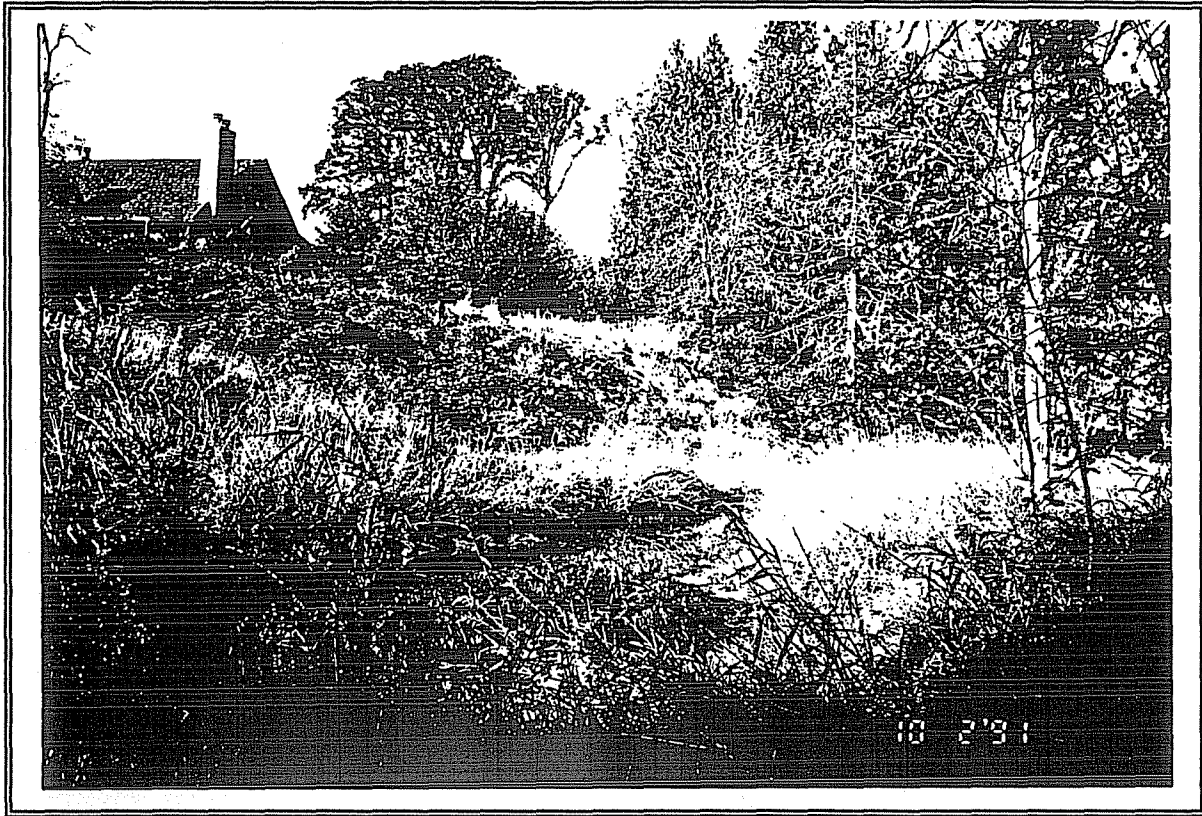
The site is artificially created. Reed canarygrass has invaded and dominates the groundcover. No riparian vegetation has regrown around the pond.

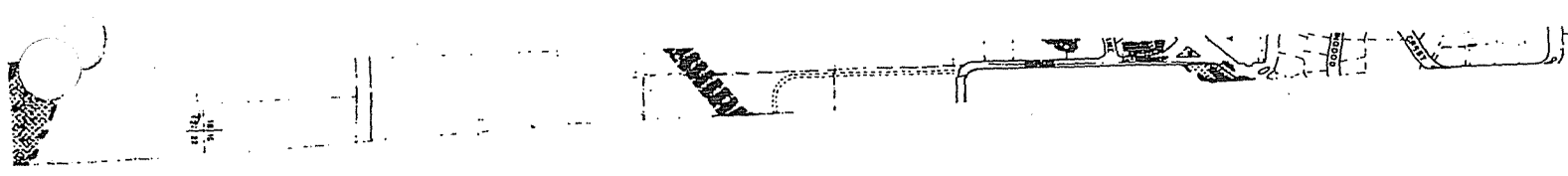
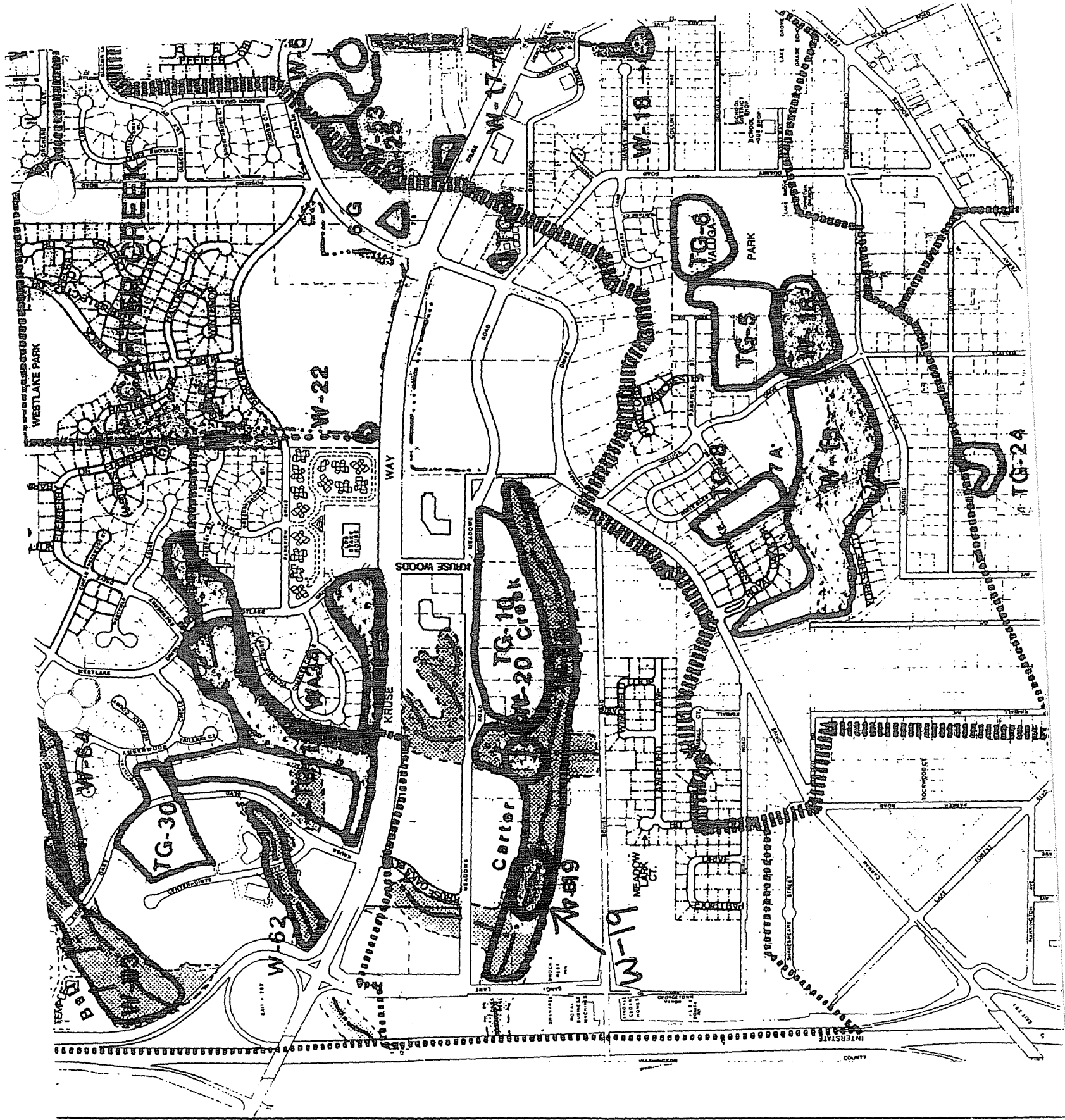
MANAGEMENT RECOMMENDATIONS

A dense, screening buffer should be planted on all sides. New development should not occur within 50 ft. of the water. Water quality should be monitored and sources of contamination identified and eliminated.

\* Based on best professional judgment and field assessment methods

SITE W19





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W20 SIZE: <0.5 acre HABITAT CLASS: Pond  
LOCATION: South of Meadows Road On Small Tributary to Carter Creek  
SEC. MAP NO.: 7 WL/DNA #: 7C DATE OF INVENTORY: 09-27-91  
21E-7BA,501

Habitat Assessment Score: 53		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>M-H</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>H</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>M-H</u>	Wildlife Habitat	<u>M</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>L</u>

GENERAL DESCRIPTION

The pond was constructed on a small tributary to Carter Creek south of Meadows Rd. It appears to have been originally built for stock watering. The outlet to Carter Creek has been modified and raised which has flooded a small island and subsequently killed an alder tree on it. There is no dense screening by vegetation around the pond, but a narrow strip of alders and a few nonnative willows grow near the water. Cattails grow around the edge and large mats of smartweed (Polygonum sp.) grow in the center of the pond. The surrounding land is abandoned pasture, and banks are gradually sloping.

NATURAL RESOURCE VALUES

Sediment trapping is rated high because of the elevated outflow structure and the dense growth of cattails and smartweed. The surrounding open space maintained as pasture rather than development enhances the site for wildlife use although the pond is small.

IMPACTS/DISTURBANCES

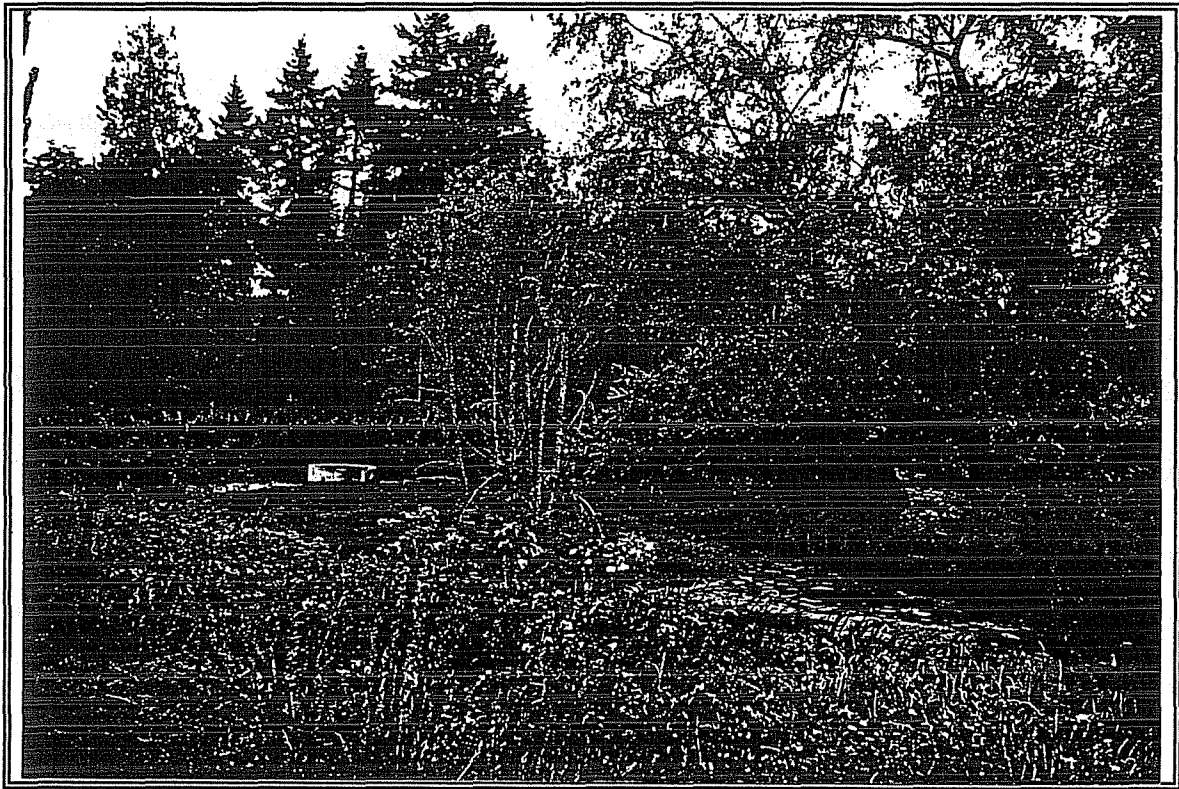
The pond was an artificial construction many years ago, and surrounding vegetation has been modified by grazing.

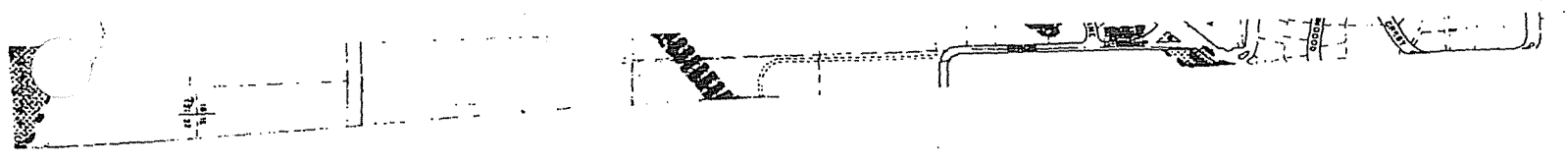
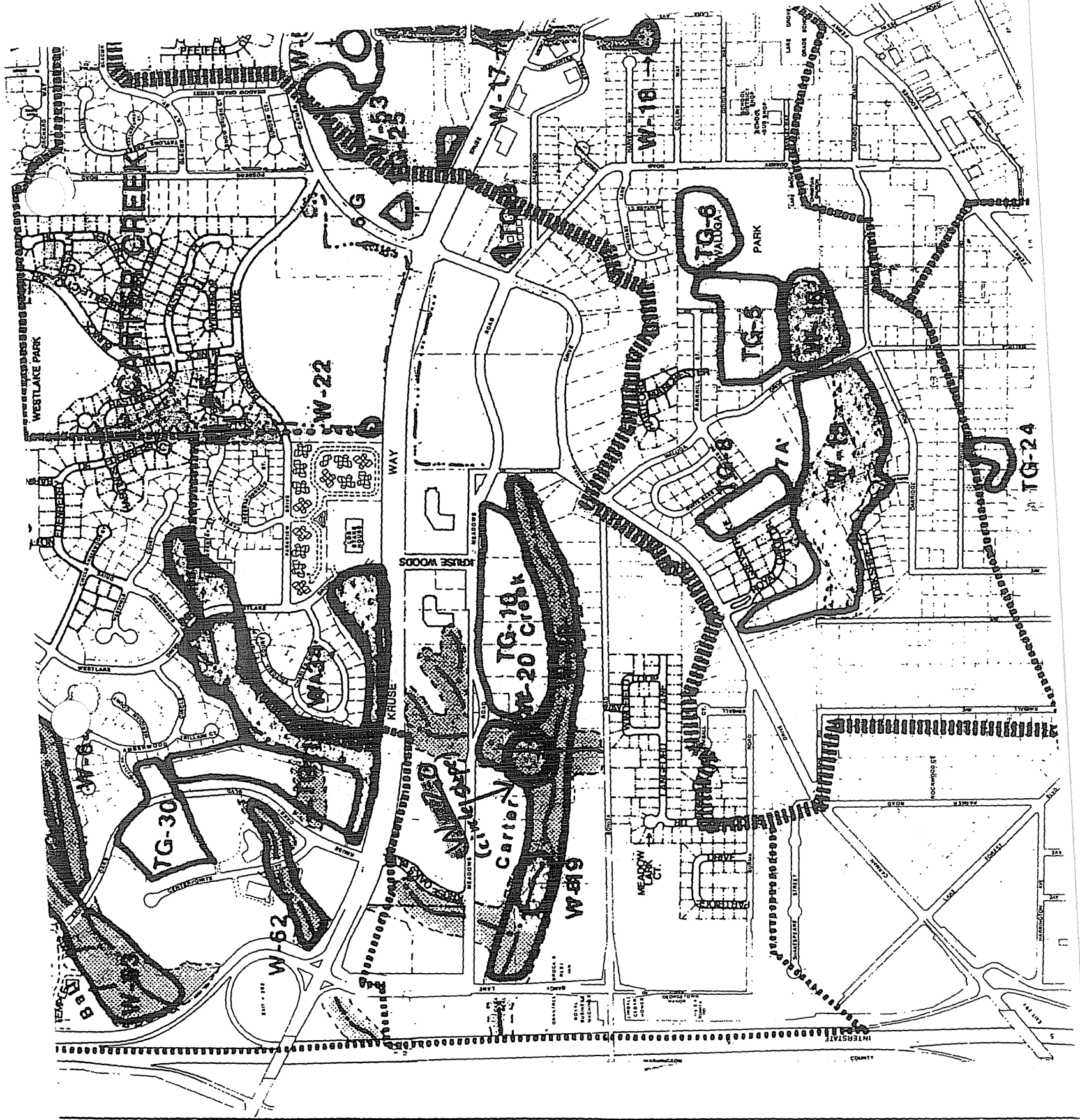
MANAGEMENT RECOMMENDATIONS

New development should not be permitted within 25 ft. of the water and a dense, screening buffer should be planted around the pond.

\* Based on best professional judgment and field assessment methods

**SITE W20**





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W21 SIZE: < 0.5 acre HABITAT CLASS: Pond  
LOCATION: End of Sun creek Drive  
SEC. MAP NO.: 6 WL/DNA #: 6B DATE OF INVENTORY: 10-02-91  
21E-6B0 159 (TRACT "A")

Habitat Assessment Score: 44		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>L-M</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>L-M</u>	Wildlife Habitat	<u>L</u>
Education Potential	<u>M-H</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>L</u>

GENERAL DESCRIPTION

The site is at the end of Sun creek Dr. The pond was intentionally created when a sewer line was placed across the original stream channel. A grated outlet has been constructed to route the outflow down to the original stream channel. The surrounding trees are mainly alder and Pacific willow. Piper's willow is a shrub layer, and the emergents are purple loosestrife, cattail, small-fruited bulrush, and water smartweed. The originally steep banks of the creek were graded flat during construction of the sewer line.

NATURAL RESOURCE VALUES

This site has some wildlife values mainly because of the proximity of water to tall trees and shrubs that were either left next to the inflow channel at the time the pond was created or have colonized the site later. However, the size of the wetland is small and the residential development too near for wildlife to be abundant or permanent residents of the site. The location of the wetland and a pedestrian trail makes it an amenity to the neighborhood.

IMPACTS/DISTURBANCES

The site is an artificial creation resulting from placement of a sewer line. Purple loosestrife has established here in dense clumps and poses a threat to other wetlands as a seed source.

MANAGEMENT RECOMMENDATIONS

A wider buffer could be planted around the pond. Purple loosestrife should be eradicated entirely.

\* Based on best professional judgment and field assessment methods

**SITE W21**





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W22 SIZE: <0.5 acres HABITAT CLASS: Pond  
LOCATION: End of Parkview Drive  
SEC. MAP NO.: 6 WL/DNA #: 6G DATE OF INVENTORY: 10-02-91  
21E-6 100,120

Habitat Assessment Score: 31		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>M-H</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>L</u>
Education Potential	<u>L-M</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION**

These two ponds located at the end of Parkview Drive are classic mitigation ponds of very recent construction and are almost bare of emergent and riparian vegetation. The ponds will be isolated by surrounding existing and planned residential development. The mitigation plantings for buffer are sparse and survival is low. The chain link fence around the uppermost pond and upstream on the inflowing creek severely restricts access to the water for small mammals except at one or two points.

**NATURAL RESOURCE VALUES**

Sediment trapping and stormwater storage are the two main functions of these ponds at present. Additional plant growth may provide wildlife cover and forage habitat in the future. If and when the ponds function as wetlands, their proximity to residential development could be an educational amenity.

**IMPACTS/DISTURBANCES**

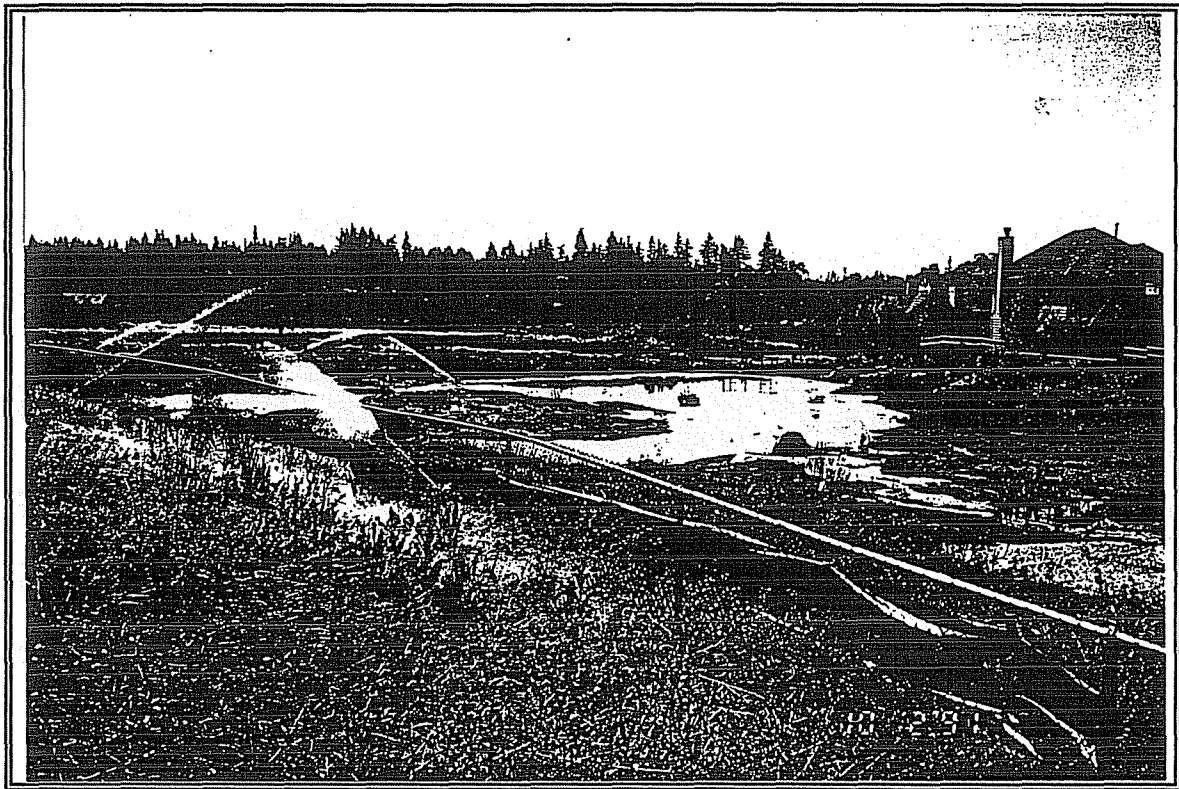
The ponds are of recent, artificial construction. Much bare ground surrounds them and mitigation plantings are not surviving well.

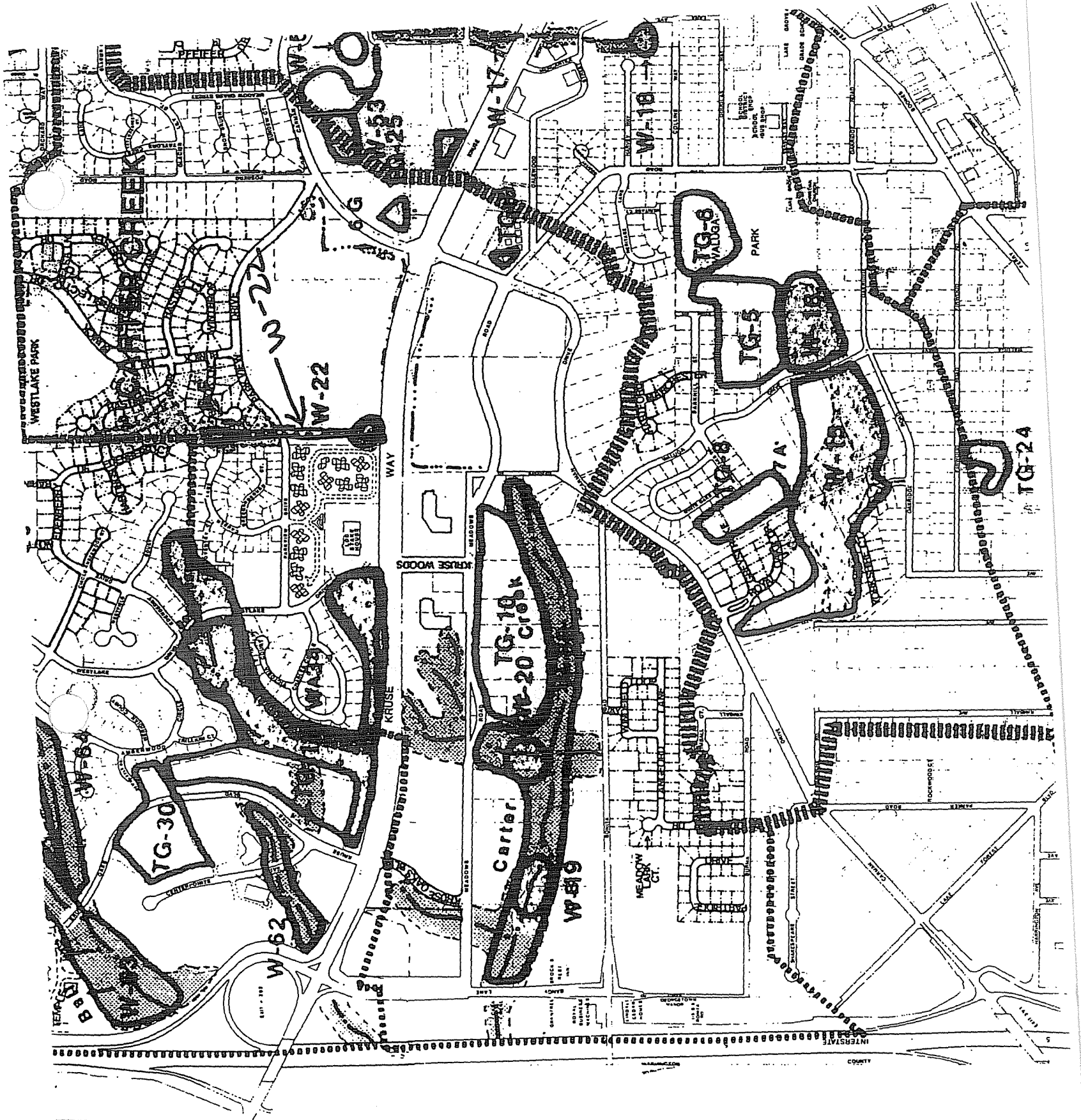
**MANAGEMENT RECOMMENDATIONS**

A dense screening buffer should be planted outside the fence around the uppermost pond to a width of 25 ft. The fence should be opened at several points for animals to access the water. A dense 25 ft. buffer should be planted around the lower pond also. Planted vegetation should be monitored and replaced if it does not survive.

\* Based on best professional judgment and field assessment methods

SITE W22





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W23 SIZE: ≈ 1 acre HABITAT CLASS: Pond  
LOCATION: Townsquare / Mountain Park  
SEC. MAP NO.: 5 WL/DNA #: 23 DATE OF INVENTORY: 10-03-91  
CLACKCO 21E 5AA 101,200 ; MULTCO 4226, BLOCK 10

Habitat Assessment Score: 36	Range for Ponds: 10 - 77		
Resource Value Assessment *			
Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>H</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>H</u>	Wildlife Habitat	<u>L</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This shallow water pond is located between the Townsquare parking lot on Boonesferry Road. In October of 1991, water depths ranged from two to six inches and open water was limited due to extensive emergent vegetation. Emergent vegetation is dominated by rushes, bulrushes, and ten foot tall cattails. A variety of other species are also present. The west bank has a row of mature poplars. Other shrubs and small trees including willow, alder, spirea, and cascara surround the pond. The pond is isolated from other natural areas by roads and commercial development. Water is piped to the site from the north and drains south through culverts to Springbrook Creek.

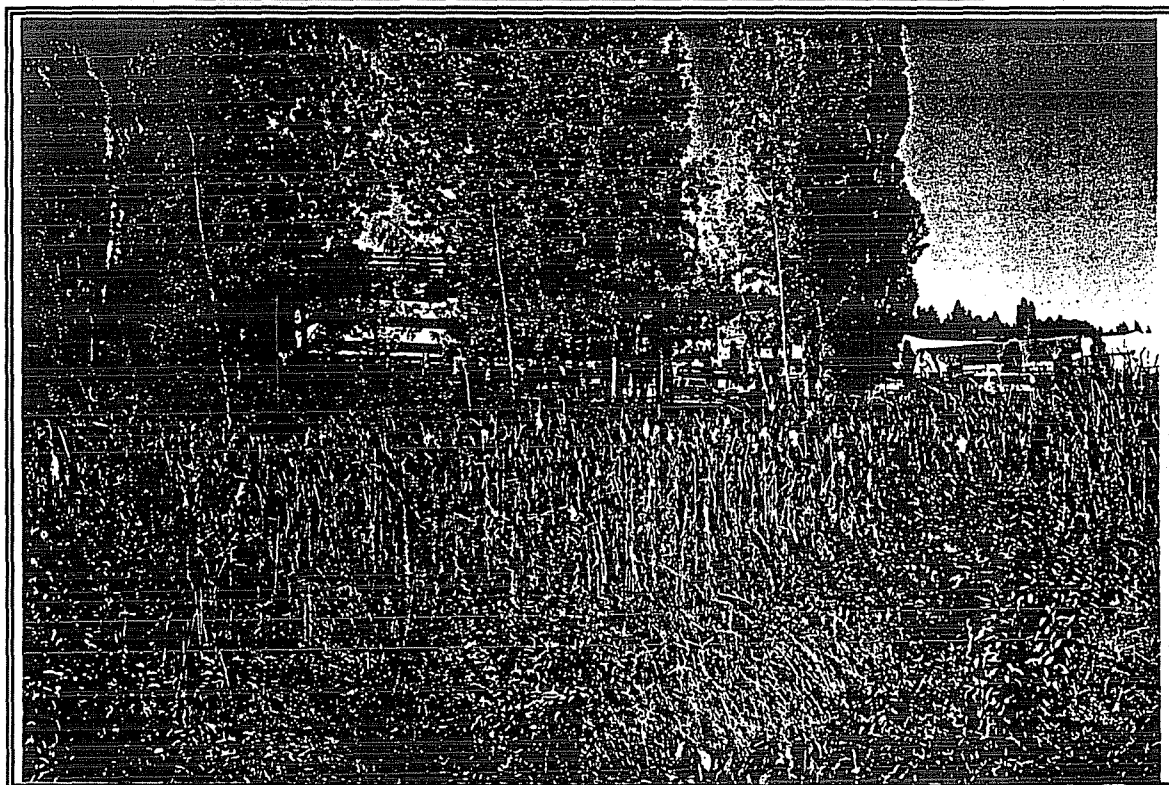
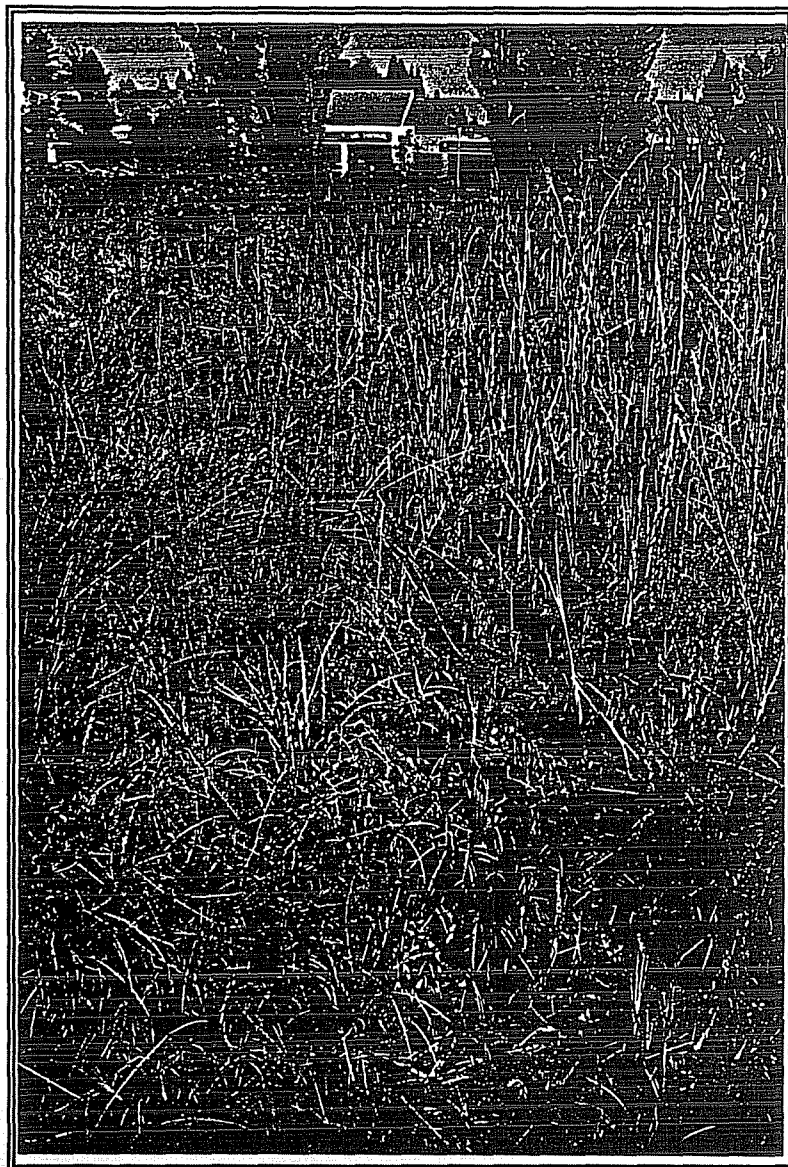
**NATURAL RESOURCE VALUES** The trees and shrubs provide perching and nesting sites, food and cover for a variety of wildlife species. The pond is a breeding area for tree frogs. The wetland functions as a stormwater storage area. The dense emergent vegetation improves water quality downstream by trapping sediments and absorbing nutrients from stormwater runoff.

**IMPACTS/DISTURBANCES** Himalayan blackberry is dense in many places surrounding the wetland. It limits native plant diversity. In this instance it may help prevent people from accessing the pond and disturbing wildlife. A better buffer of diverse native plants could be equally effective.

**MANAGEMENT RECOMMENDATIONS** Buffer vegetation of evenly spaced red-osier dogwood is ineffective at buffering wetland from parking lot activities. Plant additional species that would provide food, cover, and nesting sites for wildlife and would also act as a barrier between very different land uses.

\* Based on best professional judgment and field assessment methods

SITE W23





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W24 SIZE: ≈ 1 acre HABITAT CLASS: Pond

LOCATION: Northeast of Boonesferry Road / Rainbow Drive

SEC. MAP NO.: \_\_\_\_\_ WL/DNA #: 5b

DATE OF INVENTORY: 10-03-91

21E JDC 500, 501

Habitat Assessment Score: 63

Range for Ponds: 10 - 77

Resource Value Assessment \*

Stormwater Storage	<u>H</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>H</u>	Fish Habitat	<u>M</u>
Nutrient Retention	<u>M</u>	Wildlife Habitat	<u>M-H</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>M</u>
Sensitive Species	<u>L</u>	Recreation	<u>M</u>

**GENERAL DESCRIPTION** Rainbow pond is surrounded by a major road and residential development. Water enters the pond from the north through a trapezoidal concrete channel and drops down an eight foot waterfall to the water. Water exits south through a weir to Springbrook Creek. Clumps of emergent vegetation grow along the pond margins. Cattail, small-fruited bulrush and pondweed dominate the emergent and aquatic vegetation. The pond is surrounded by a multi-layered riparian community. The canopy is dominated by Pacific willow and includes red alder, black cottonwood, big leaf maple, Douglas fir and western red cedar. The shrub understory supports blue elderberry, salmonberry, and willow; it is overcome by Himalayan blackberry on the west side of the pond. Bufflehead and mallard were observed on the pond. Mosquito fish were also abundant.

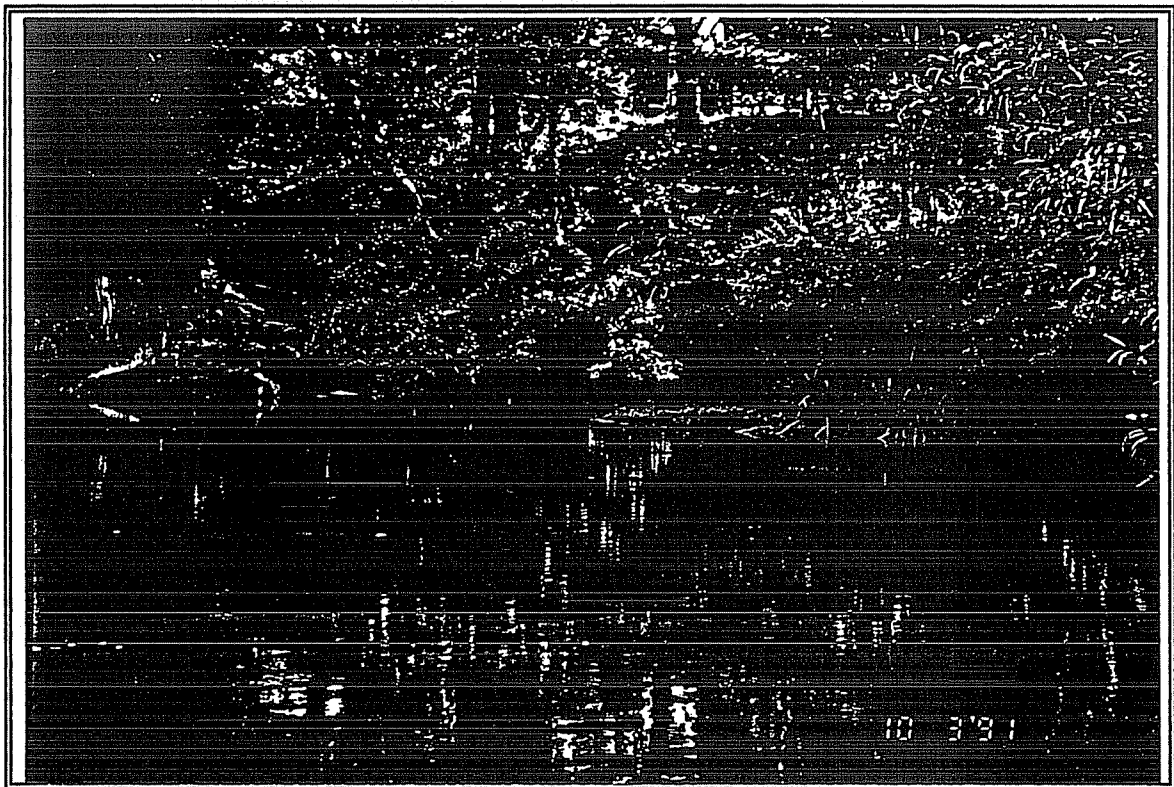
**NATURAL RESOURCE VALUES** The pond provides year-round waterfowl habitat. Its association with Springbrook Creek enhances its wildlife habitat value. Rainbow pond functions as a stormwater storage area. It also traps sediments and nutrients from Springbrook Creek.

**IMPACTS/DISTURBANCES** The site is adjacent to a major road, Boonesferry. Traffic noise and accidents may reduce the wildlife population utilizing the site.

**MANAGEMENT RECOMMENDATIONS** Install nest boxes for wood ducks.

\* Based on best professional judgment and field assessment methods

SITE W24





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W25 SIZE: < 0.25 acre HABITAT CLASS: Pond  
LOCATION: Dolph Court/Country Club Road  
SEC. MAP NO.: 4 WL/DNA #: NA DATE OF INVENTORY: 10-03-91  
2E4CA 5007

Habitat Assessment Score: 32	Range for Ponds: 10 - 77		
Resource Value Assessment *			
Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>M-H</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>L-M</u>	Wildlife Habitat	<u>M</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>M</u>

**GENERAL DESCRIPTION** This pond is surrounded by a road and residential development. Residents are in the process of "improving" the wetland by creating islands. Water was drained from the site for excavation. Consequently, the score for this site may be lower than it would be under normal circumstances. The pond is surrounded by a deciduous canopy of red alder, big leaf maple, and Pacific willow. Shrubs are scattered and include elderberry and cascara. The understory is dominated by sword fern. The wetland supported smartweed, buttercup, bulrush, speedwell, and rush. Mallard/hybrids were feeding in very shallow water on the east end of the pond.

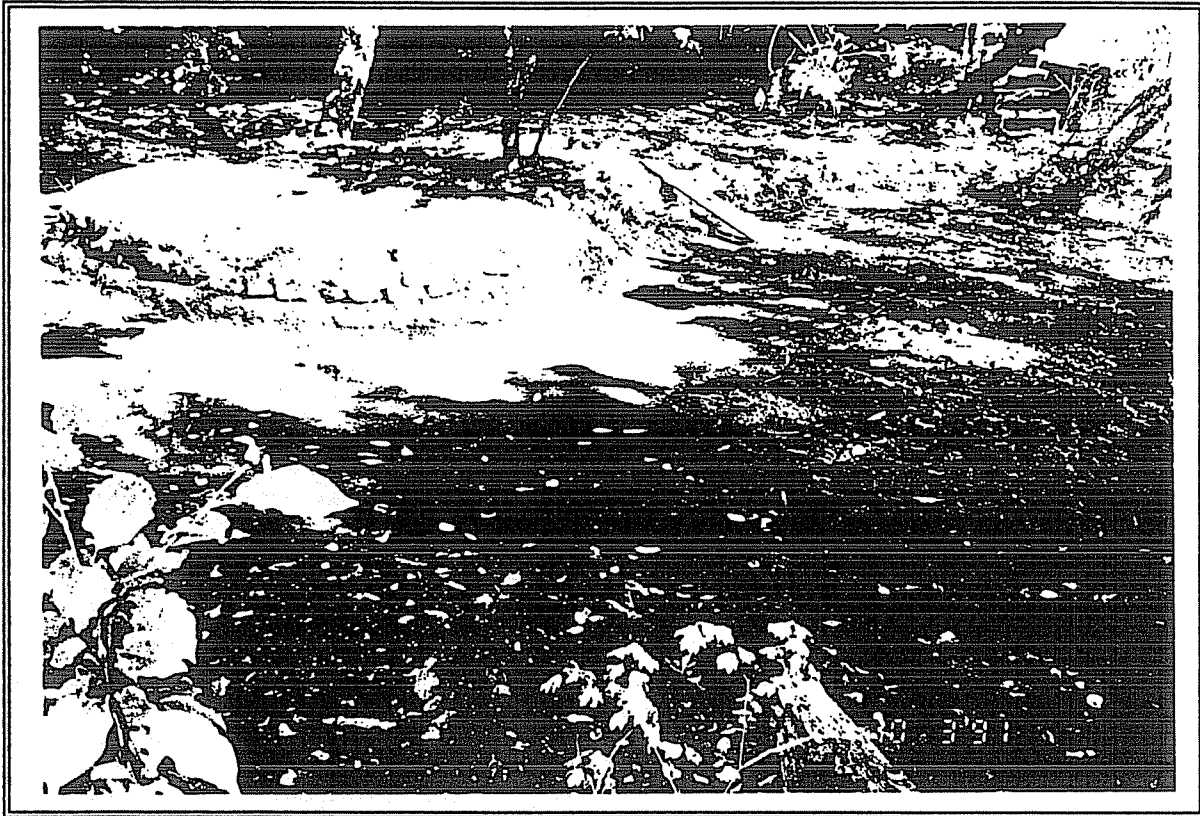
**NATURAL RESOURCE VALUES** The site has a significant recreational value for the neighborhood. Benches and a small trail circle the pond. It functions in maintaining water quality by storing stormwater and trapping sediments and nutrients. These functions will improve as the emergent community develops. Wildlife habitat value is moderate. The pond provides water for wildlife inhabiting the surrounding woodland. It also benefits a small population of waterfowl.

**IMPACTS/DISTURBANCES** The site was excavated to create islands in the pond. This impacted the emergent plant community but this site should recover by next season.

**MANAGEMENT RECOMMENDATIONS** Improve emergent and submergent vegetation. Plant native seed and berry bearing shrubs in the woodland buffer.

\* Based on best professional judgment and field assessment methods

SITE W25





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W26 SIZE: ≈ 5.5 acres  
 LOCATION: Lily Bay (Frog Pond)  
 SEC. MAP NO.: 9 WL/DNA #: 19  
 21E 9BD 12800

HABITAT CLASS: Pond  
 DATE OF INVENTORY: 10-03-91

Habitat Assessment Score: 74		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>M</u>	Fish Habitat	<u>M</u>
Nutrient Retention	<u>M</u>	Wildlife Habitat	<u>H</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>H</u>
Sensitive Species	<u>H?</u>	Recreation	<u>M</u>

**GENERAL DESCRIPTION** Lily Bay is located south of Iron Mountain Blvd. and below Iron Mountain. It is connected to Lake Oswego by a narrow channel. The channel is blocked with fallen logs which prevent easy boat access. The water contains abundant aquatic vegetation throughout (a further deterrent to boaters) and emergent vegetation along its banks. Aquatic vegetation is dominated by pond lily, duck weed, and algae. Emergent vegetation is dominated by iris and includes speedwell, buttercup, soft rush, horsetail, piggyback, and skunk cabbage. The diverse emergent and aquatic vegetation provide cover and food for waterfowl, turtles, tadpoles, and other aquatic species. There are numerous logs floating in the bay. Wood ducks, mallards, and two turtles were observed perching and basking on floating logs. Wigeon and coot were also observed in the water. The north end of the bay is surrounded by a rocky slope; the rocks provide cover and protection for small wildlife species such as salamanders and mice. The bay is surrounded by a multi-layered mixed deciduous evergreen canopy. Red alder (1.5' dbh) and Douglas fir (3' dbh) dominate the canopy. The shrub layer is dominated by vine maple and includes diverse seed and berry bearing bushes. The understory has pockets of native vegetation but it is severely impacted by English ivy. Deer, raccoon, and opossum frequent the riparian edge of the bay.

**NATURAL RESOURCE VALUES** Lily Bay is a water source for on-site as well as off-site species. Birds, mammals, reptiles, and other wildlife species that inhabit the woodland surrounding the bay depend on the bay for water. Waterfowl are present year-round in Lake Oswego; they find food and cover in the protected bay. The numerous floating logs provide perch sites for waterfowl and basking sites for turtles. Two turtles were observed basking on a log. Since native turtles are a sensitive species in Oregon, these turtles should be identified. Large mammals such as the blacktailed deer are not a sensitive species, but are rare in urban areas. A small population of deer forage and travel around Lily Bay. They cross Iron Mountain Blvd. to feed and rest on Iron Mountain.

**IMPACTS/DISTURBANCES** Bullfrogs are abundant and degrade wildlife habitat value by eating tadpoles of other species, baby turtles, and other aquatic species.

**MANAGEMENT RECOMMENDATIONS** Maintain buffers around Lily Bay. Remove ivy and do not permit residents to plant it.

\* Based on best professional judgment and field assessment methods

**SITE W26**





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W27 SIZE: ≈ 1 acre HABITAT CLASS: Pond  
LOCATION: Southwest of Iron Mountain Blvd./ Summit Drive  
SEC. MAP NO.: 9 WL/DNA #: 9c DATE OF INVENTORY: 10-03-91  
ZIEGBC SUPP 5A00

Habitat Assessment Score: 70		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>M</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>M</u>	Wildlife Habitat	<u>H</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>H</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This pond is located between a railroad line and a forested residential development. It collects water from surface and probably groundwater sources. The pond becomes shallow in the summer but retains water year-round. The pond has trees and shrubs scattered throughout and surrounding it. Pacific willow and Oregon ash dominate the canopy. Black cottonwood and Douglas fir are also present. The shrub understory supports vine maple, red-osier dogwood, spirea, hazelnut, and snowberry. Emergent vegetation is abundant and includes burreed, manna grass, bulrush, smartweed, water parsley, bittersweet nightshade, and duckweed. The pond is surrounded in part by rocks and boulders that provide cover and protection for small wildlife species.

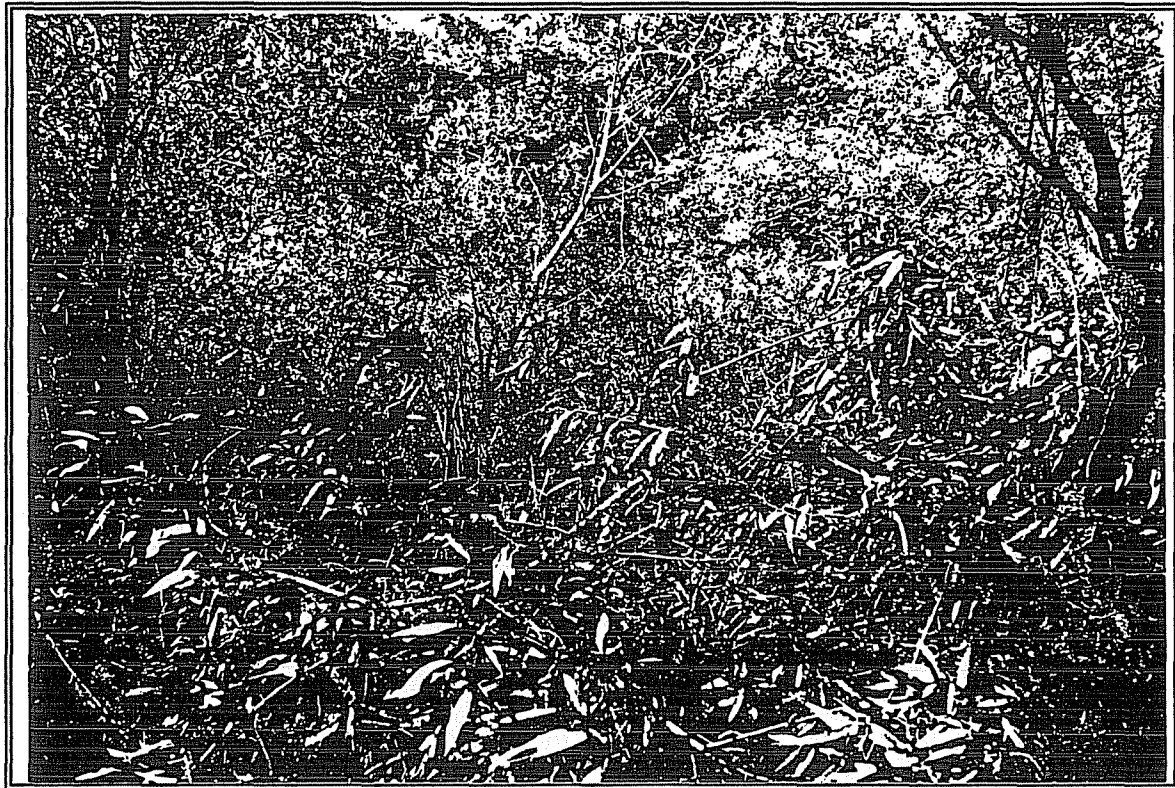
**NATURAL RESOURCE VALUES** The pond provides year-round water for wildlife species on and off site. It is a breeding area for the red-legged frog, a sensitive species in Oregon. It also is a potential breeding area for other frogs and salamanders. The multi-layered canopy provides nesting and perching sites, food, and cover for a variety of wildlife. The large rocks adjacent to the water provide basking sites for reptiles. Rocky crevices provide cover and protection for small wildlife. The wetland is scenic and an aesthetic addition to the neighborhood. The pond functions as a stormwater storage area and a sediment and nutrient trap.

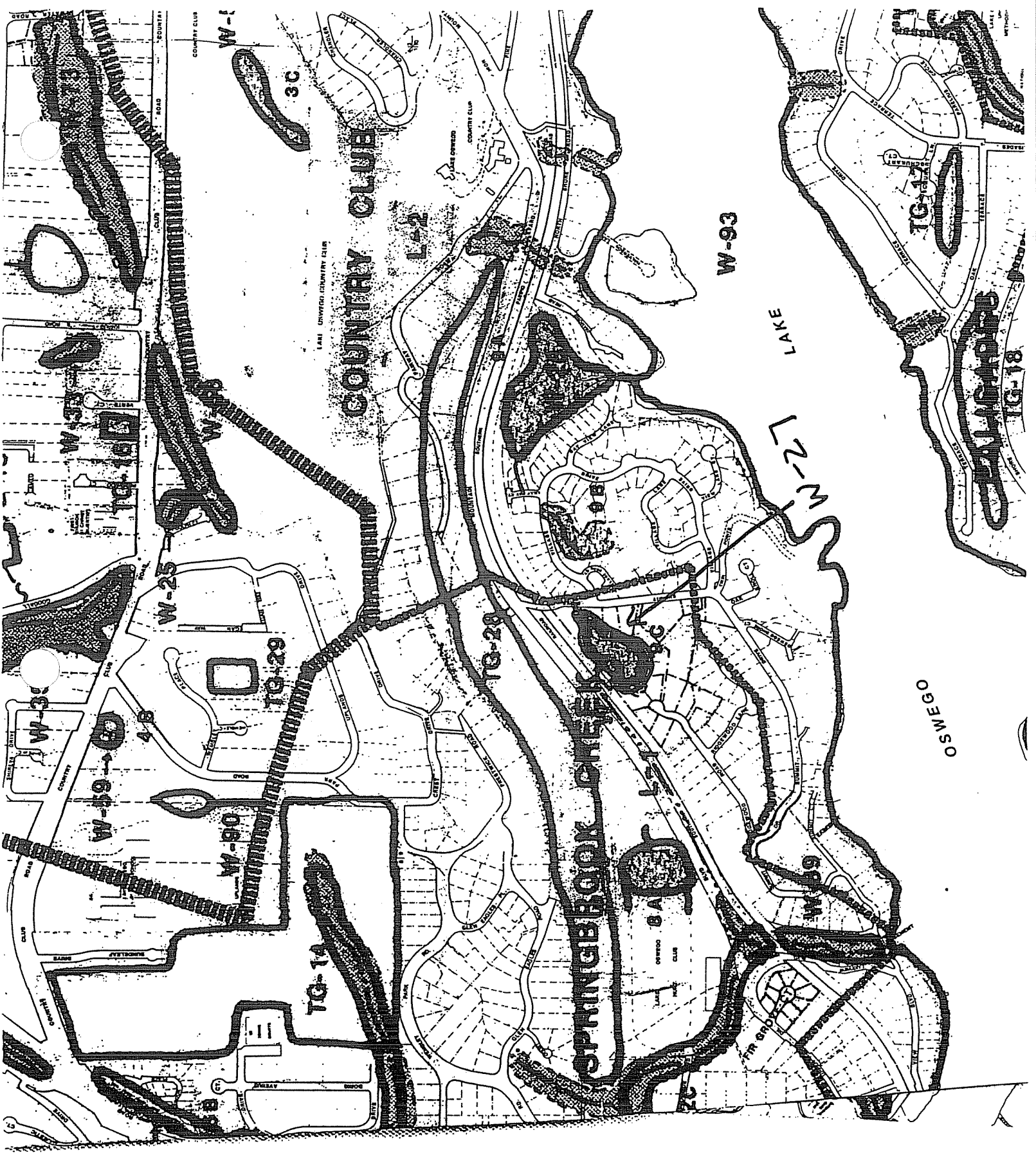
**IMPACTS/DISTURBANCES** New development south of the pond may impact water quality and wildlife.

**MANAGEMENT RECOMMENDATIONS** Monitor new development and its impacts to the hydrological system of the pond and its water quality. Additional water may kill trees. Reduced water may kill breeding frogs and trees and would reduce the wildlife habitat value of the site.

\* Based on best professional judgment and field assessment methods

SITE W27





COUNTRY CLUB

SPRINGBROOK CLUB

OSWEGO

W-93

TG-17

TG-18

LAKE

W-25

TG-29

W-25

TG-29

W-30

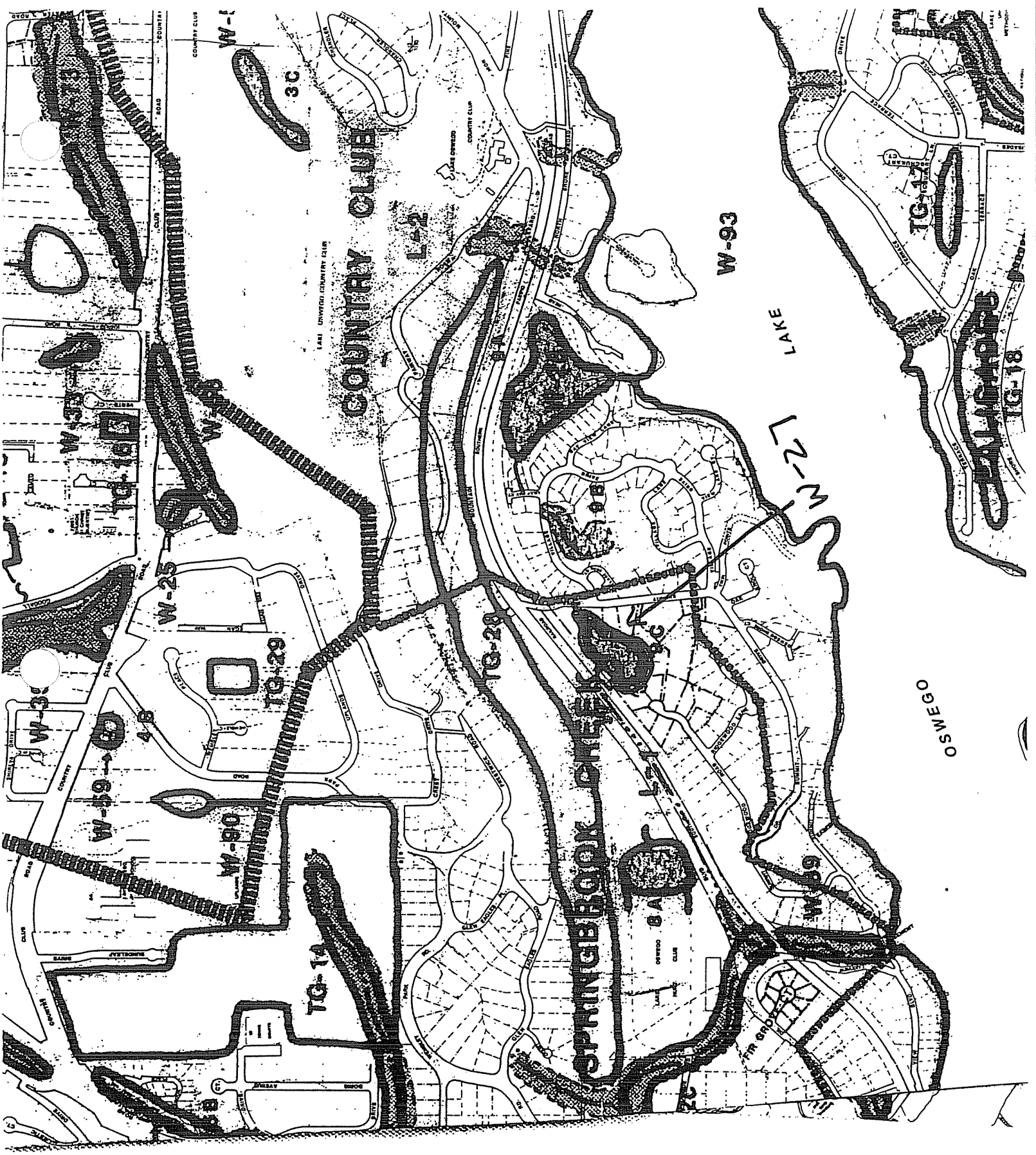
W-30

W-90

TG-14

W-69

W-69



Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W28 SIZE: ≈ 2 acres

HABITAT CLASS: Pond

LOCATION: Lake Oswego Hunt Club

SEC. MAP NO.: 8 WL/DNA #: 8a

DATE OF INVENTORY: 10-07-91

21E 9AD 300

Habitat Assessment Score: 64

Range for Ponds: 10 - 77

Resource Value Assessment \*

Stormwater Storage	<u>H</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>M</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>M</u>	Wildlife Habitat	<u>H</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>H</u>
Sensitive Species	<u>L</u>	Recreation	<u>M</u>

**GENERAL DESCRIPTION** Lake Oswego Hunt Club pond is located north of Iron Mountain Blvd. and south of Iron Mountain. The pond supports abundant emergent and submergent vegetation. Emergent vegetation is dominated by reed canarygrass, cattail, and soft rush. It includes creeping buttercup, grasses, and teasel. Aquatic vegetation is diverse and includes water pennywort, manna grass, small-fruited bulrush, spikerush, smartweed, and speedwell. The aquatic vegetation provides food for waterfowl, tadpoles, nutria, and other aquatic wildlife. Waterfowl grazers also forage in the mowed areas adjacent to the pond. Green-winged teal and mallard were observed during the site visit. The pond is surrounded by deciduous trees and shrubs that provide food, nesting sites and cover for a variety of wildlife. Wildlife utilizing the large forested corridor on the slopes of Iron Mountain use the pond for refreshment.

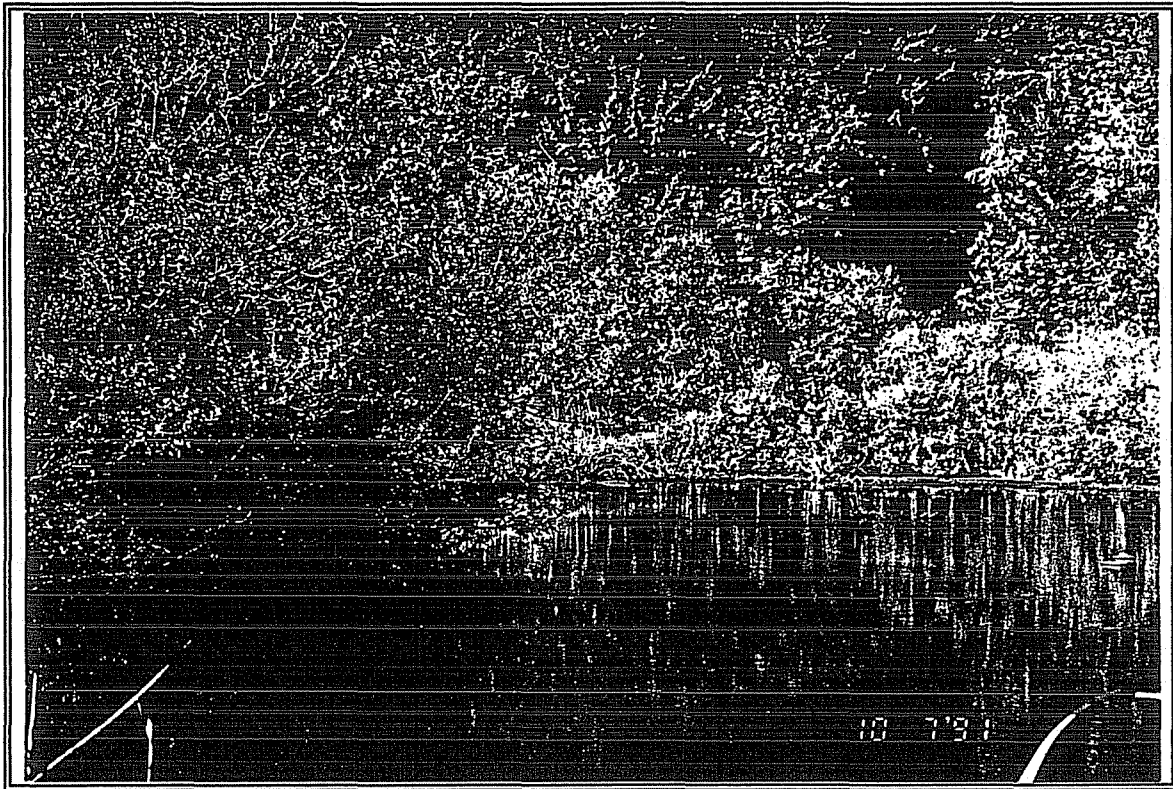
**NATURAL RESOURCE VALUES** The pond is a significant source of water for wildlife inhabiting adjacent uplands along the slopes of Iron Mountain. It provides year-round food and water for waterfowl. It is a potential breeding area for frogs. The pond is scenic and a focal point for horseback riders. It functions as a stormwater storage area, and a sediment and nutrient trap.

**IMPACTS/DISTURBANCES** Lawn clippings from the Hunt Club are piled along the west bank of the pond. Organic debris such as these clippings degrade water quality.

**MANAGEMENT RECOMMENDATIONS** Remove lawn clippings and prevent future dumping.

\* Based on best professional judgment and field assessment methods

**SITE W28**





**SITE SUMMARY**

SITE NO.: W34 SIZE: 3+ acres HABITAT CLASS: Wetland Forest  
 LOCATION: Kruse Oaks  
 SEC. MAP NO.: 6 WL/DNA #: 6a/3 DATE OF INVENTORY: 10-07-91  
 21E10CD 4600

Habitat Assessment Score: 65		Range for Wetland Forests: 30 - 78	
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>M</u>	Vegetation Diversity	<u>M</u>
Nutrient Retention	<u>M</u>	Wildlife Habitat	<u>M-H</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>H</u>
Groundwater Recharge	<u>M</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This site is represented by pockets of Oregon ash wetlands amidst a larger Oregon ash / white oak forest. These pockets pond water seasonally. Oregon ash dominates the canopy. Shrubs are scattered and limited to rose, cascara, and ninebark. Emergent vegetation is dominated by reed canarygrass, slough sedge, creeping buttercup, avens, and bittersweet nightshade. Cattails are also present along a roadside ditch at the forest edge.

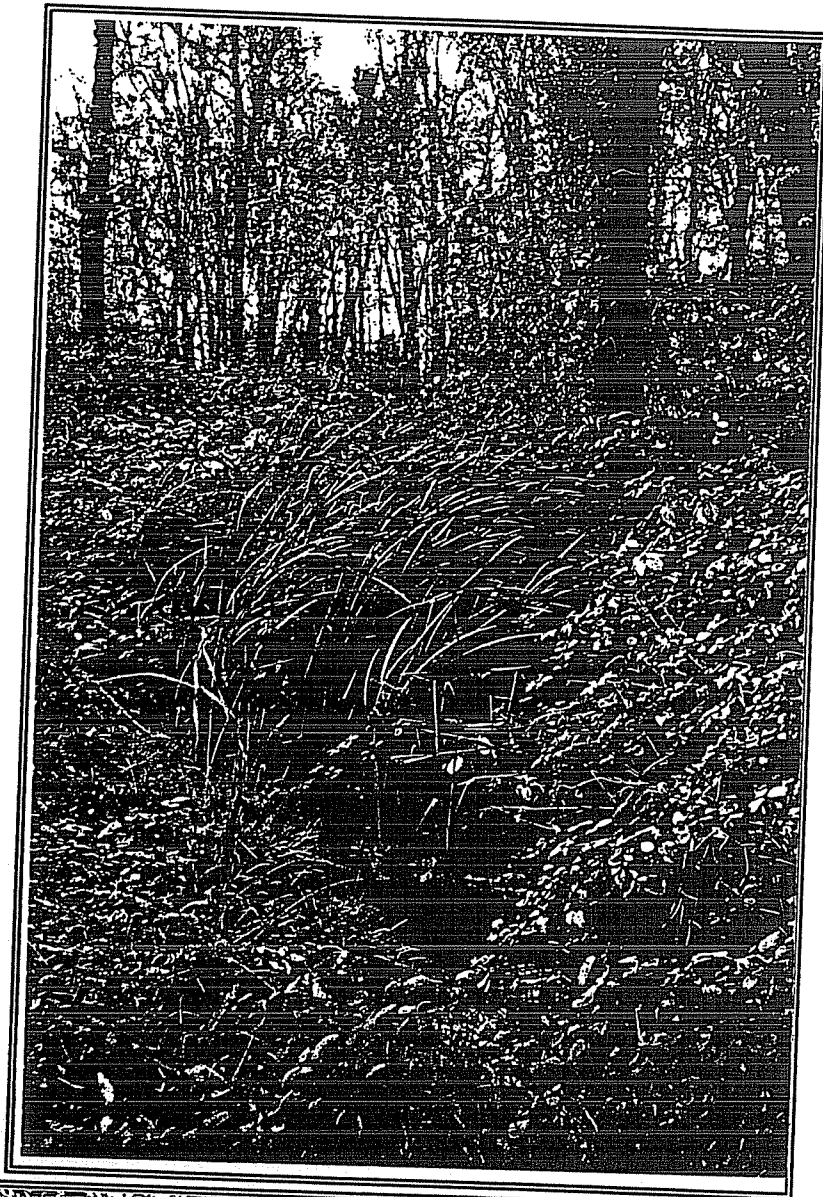
**NATURAL RESOURCE VALUES** Ponded water benefits wildlife living in the wetlands as well as contiguous uplands. This increases wildlife diversity and wildlife habitat value on the site. Snags provide potential nesting sites for cavity nesters. Downed woody debris provides potential breeding sites for salamanders.

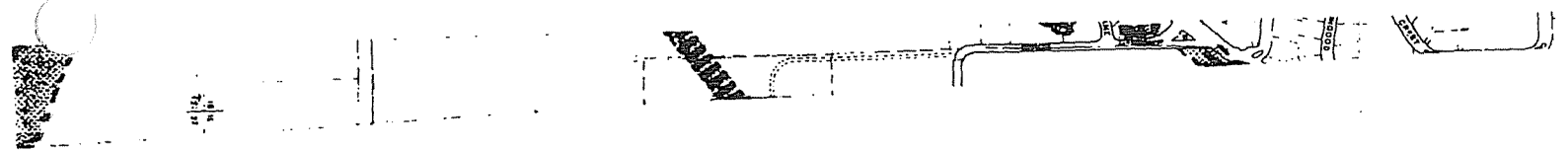
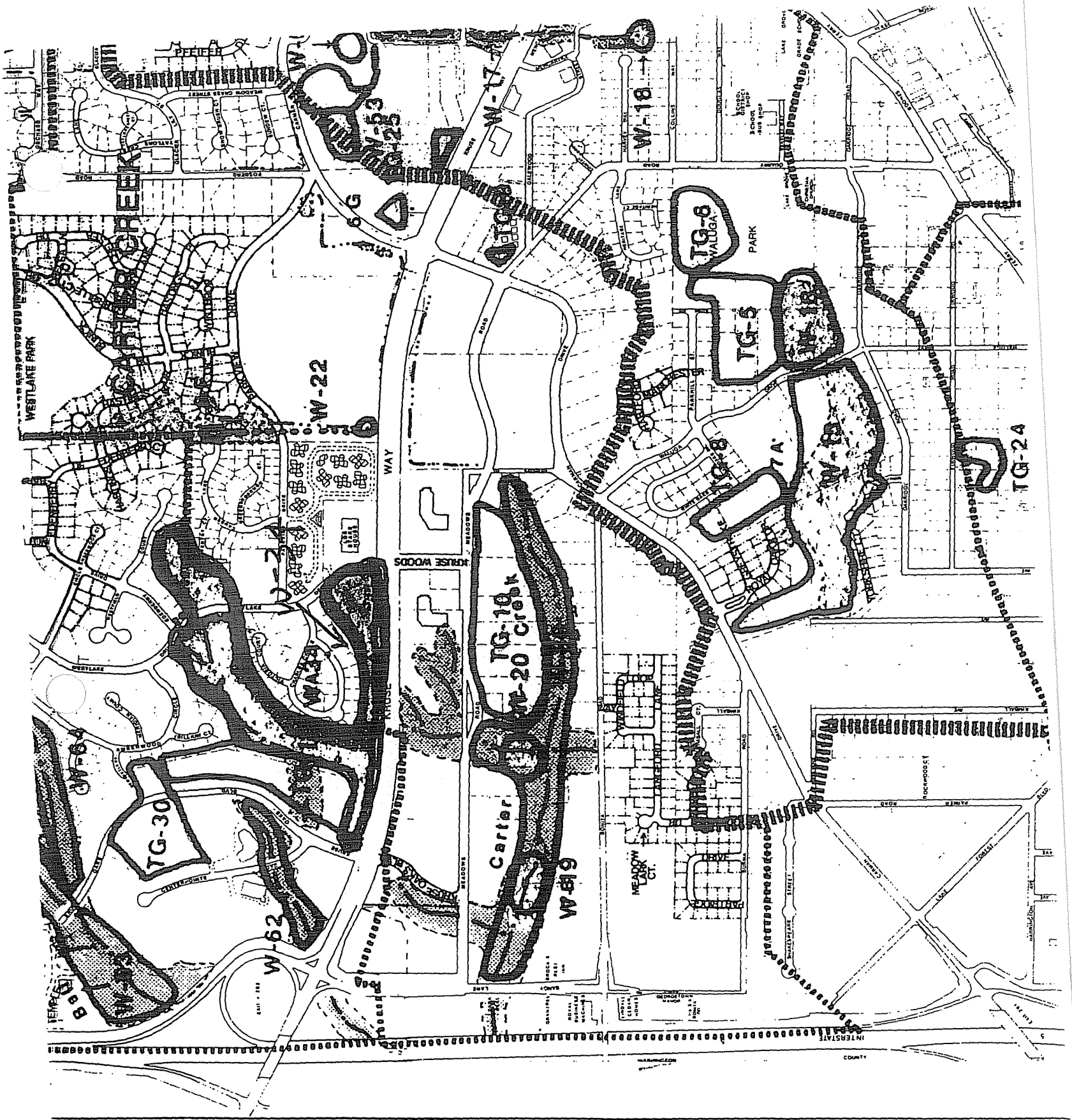
**IMPACTS/DISTURBANCES** Himalayan blackberry occurs in dense thickets along the perimeter of Kruse Oaks woodlands due to road construction. Hydrology has been slightly modified on the site due to road construction and ditches created for surface runoff but appears to be stable.

**MANAGEMENT RECOMMENDATIONS** Monitor hydrology of Kruse-oaks. A change in hydrology could drastically influence the vitality of the ash forest. Preserve remaining forest.

\* Based on best professional judgment and field assessment methods

SITE W34





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W38 SIZE: ≈ 1 acre HABITAT CLASS: Pond  
LOCATION: Palisade Lake to Oak Street  
SEC. MAP NO.: 10 WL/DNA #: 10a DATE OF INVENTORY: 10-10-91  
HE 1008 2920

Habitat Assessment Score: 41	Range for Ponds: 10 - 77		
<b>Resource Value Assessment *</b>			
Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>H</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>H</u>	Wildlife Habitat	<u>L-M</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>M</u>
Sensitive Species	<u>L</u>	Recreation	<u>M</u>

**GENERAL DESCRIPTION** This site is a landscaped pond with two islands. The pond margins are vegetated with a narrow strip of cattails, iris, slough sedge, and soft rush. It is surrounded by residences, ornamental plantings and a mixed forest of western red cedar, Pacific willow, big leaf maple, and Oregon ash. Snags are present in the forest buffer. One is protected and labeled with a wildlife critical habitat sign. The islands provide rest areas for waterfowl, but no cover for nesting. The water source of Palisades Lake is Lost Dog Creek, a steep drainage surrounded by residential development.

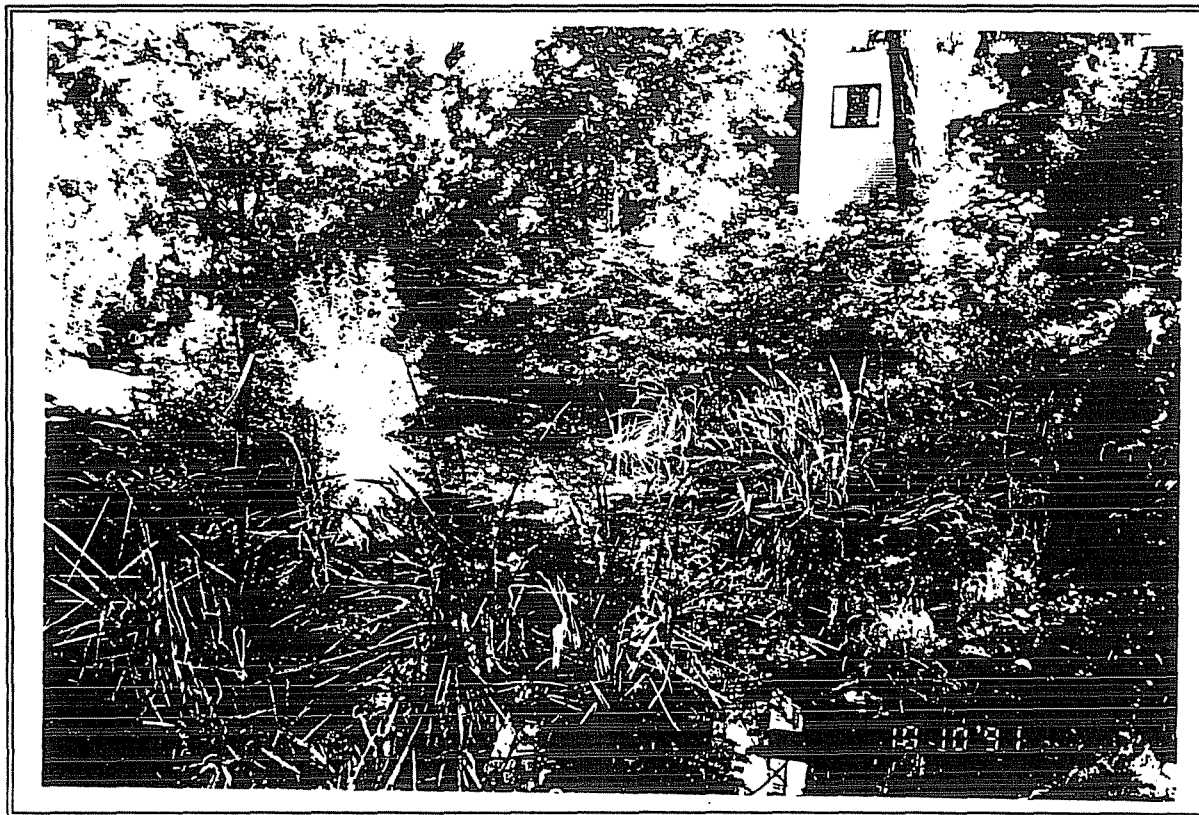
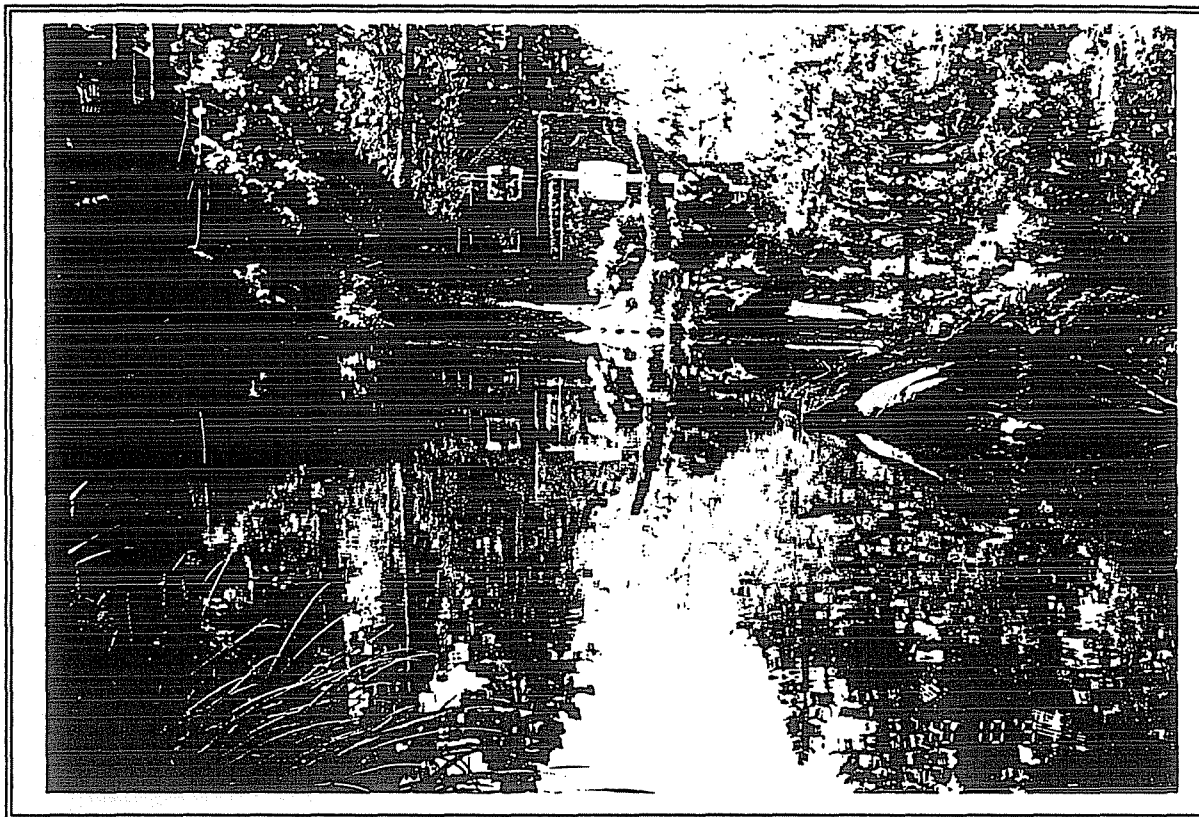
**NATURAL RESOURCE VALUES** The tall trees and snags provide excellent perches for Kingfisher and other birds. Snags provide potential nest sites for cavity nesters. The pond traps sediments and nutrients carried by Lost Dog Creek. It also stores stormwater. Its connectivity to Lost Dog Creek increases its wildlife value. Wildlife species using the surrounding forests use the pond as a water source. The pond is used by the surrounding residents for passive recreational enjoyment.

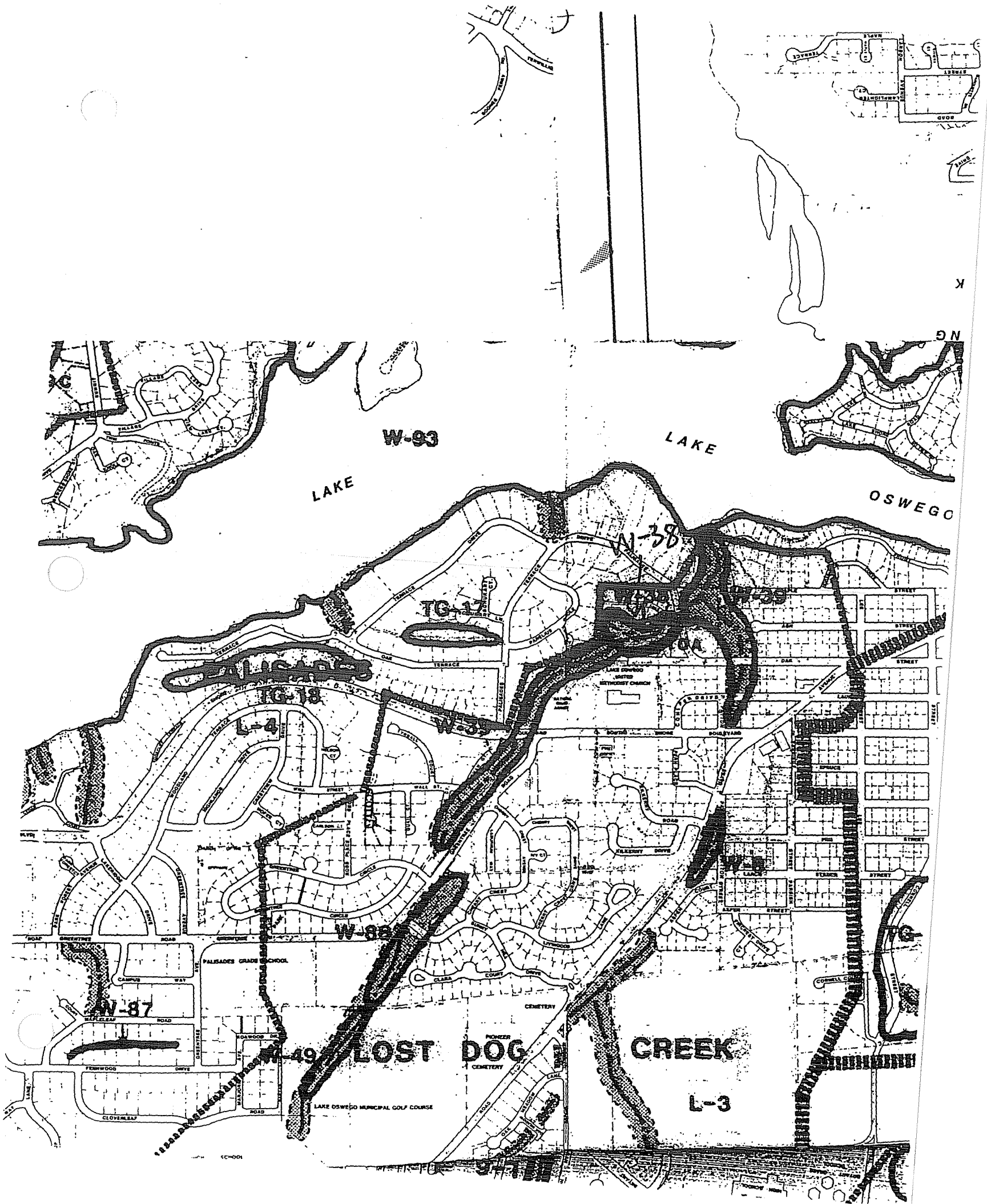
**IMPACTS/DISTURBANCES** A trail surrounds most of the pond, denuding large areas of vegetation. Ornamental plants surrounding the pond provide limited wildlife value.

**MANAGEMENT RECOMMENDATIONS** Plant additional native herbs and food bearing shrubs for wildlife. Ivy is being used as a groundcover in the development and should be removed and replaced with a different non-invasive species.

\* Based on best professional judgment and field assessment methods

SITE W38





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W40 SIZE: ≈ 3 acres HABITAT CLASS: Pond  
LOCATION: Fielding Road North of Briarwood Road  
SEC. MAP NO.: 2 WL/DNA #: NA DATE OF INVENTORY: 10-25-91  
21E2BA 400-1100, 1102, 1200-1600, 1601, 1700, 1800, 1801, 1900-2500, 2700

Habitat Assessment Score: 51	Range for Ponds: 10 - 77		
Resource Value Assessment *			
Stormwater Storage	<u>M-H</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>M-H</u>	Fish Habitat	<u>L-M</u>
Nutrient Retention	<u>M-H</u>	Wildlife Habitat	<u>M</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>M</u>
Sensitive Species	<u>L</u>	Recreation	<u>M</u>

**GENERAL DESCRIPTION** Site W40 is a series of artificial ponds and channelized streams located east of Pacific Highway on Fielding Road north of Briarwood Road. Water flows north along the Willamette River flood plain for approximately 2500 feet before entering the river. There is a water control structure at the mouth of the stream. When flooding occurs, water is pumped into the river to protect houses built in the flood plain. Some sections of the stream have been culverted and ponds have been filled. Vegetation along the stream and pondings range from landscaped lawn to multi-layered wetland and upland forest. Woodland habitat scores high for wildlife value. The canopy is dominated by black cottonwood, Pacific willow, and Oregon ash. Evergreens and oak trees occur in adjacent uplands. The understory is dominated by Himalayan blackberry but also includes seed and berry bearing shrubs. The emergent wetland vegetation growing along the banks of the channel and the ponds is dominated by reed canarygrass, iris, and roughstem horsetail. One of the larger ponds is managed for waterfowl. Wood duck nest boxes have been installed and numerous wood ducks were observed on the site. Mallards were also present.

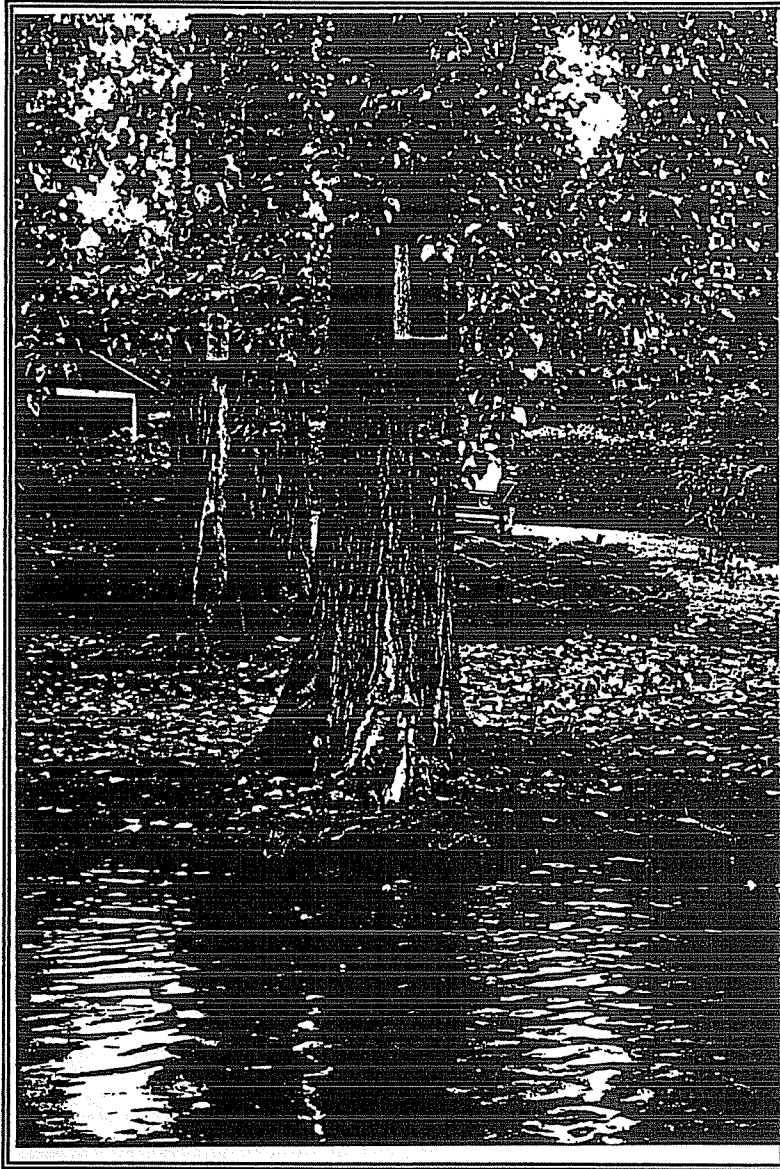
**NATURAL RESOURCE VALUES** The ponds attract waterfowl year-round. Wood ducks nest in nest boxes and mallards on the ground. Mowed lawns provide food for waterfowl grazers. The diverse vegetation located along the channel provides food, cover, and breeding sites for birds, small mammals, and reptiles. Wildlife travel back and forth between the wetland and upland habitats. This connectivity increases the value of the site. The wetlands provide significant flood control functions and help maintain water quality by trapping sediments and nutrients from stormwater runoff.

**IMPACTS/DISTURBANCES** Culverting the stream and filling wetlands reduce the stormwater storage capacity of the site and may cause flooding. Both of these activities also reduce wildlife habitat.

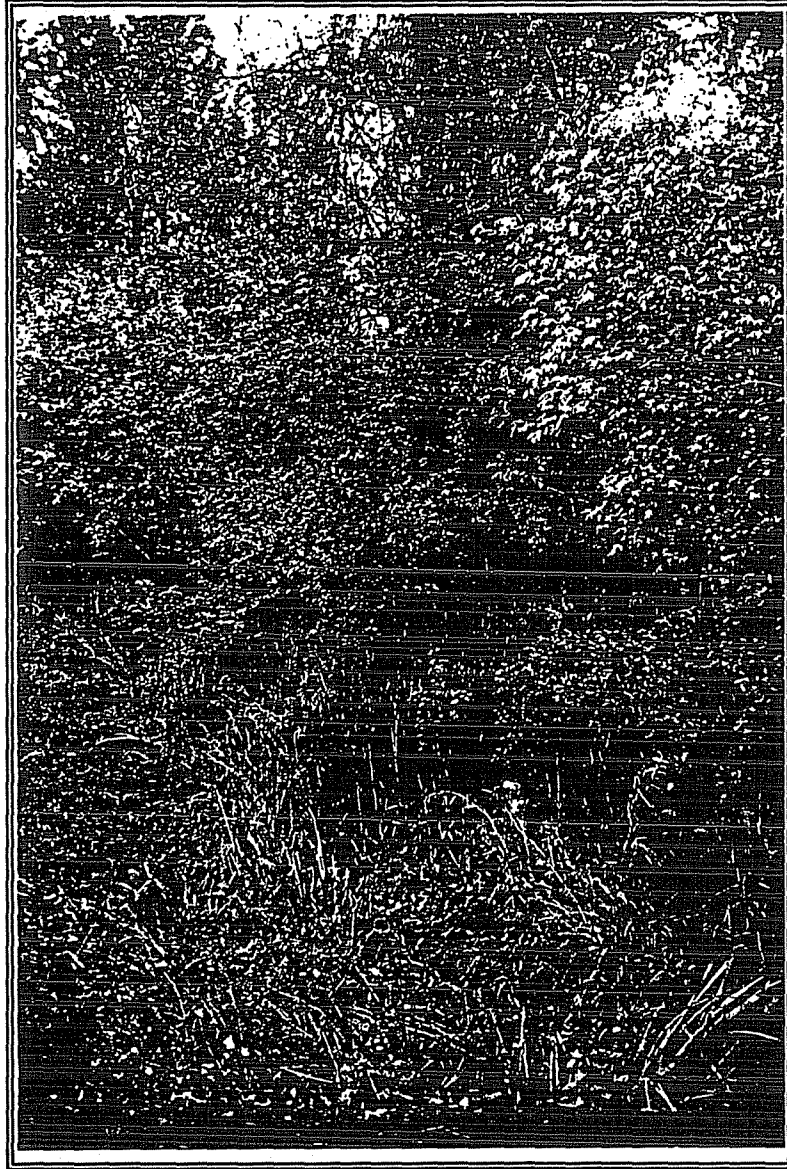
**MANAGEMENT RECOMMENDATIONS** Preserve open channels and ponds. Improve wildlife habitat by planting a multi-layered canopy of native seed and fruit bearing shrubs, grasses, and forbs as a buffer between water resources and roadways.

\* Based on best professional judgment and field assessment methods

SITE W40



SITE W40





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W30 SIZE: ≈ 1 acre HABITAT CLASS: Emergent Wetland  
LOCATION: East of Goodall Road  
SEC. MAP NO.: 4 WL/DNA #: N/A DATE OF INVENTORY: 10-08-91  
ZIE 4BD 1200, 1300, 1600, 1700

Habitat Assessment Score: 17		Range for Emergent Wetlands: 10 - 23	
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>L</u>	Vegetation Diversity	<u>L</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>L</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This emergent wetland is located east of Goodall Road and north of Country Club Road in a low density residential area. It is a horse pasture. Vegetation is dominated by creeping buttercup and velvet grass, and includes smartweed, false dandelion, bentgrass, and other grasses. It is adjacent to woodlands and a larger open meadow area which enhance its value.

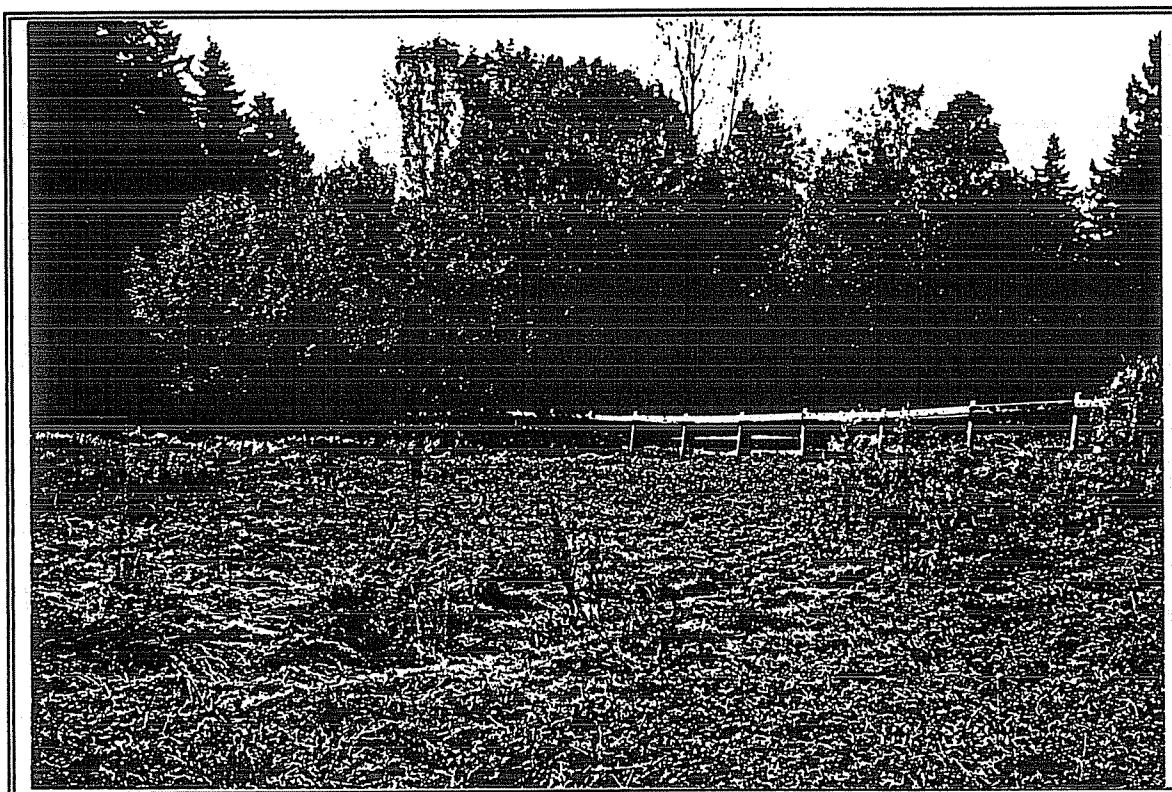
**NATURAL RESOURCE VALUES** Wildlife habitat is enhanced on this site because of the proximity of other natural areas. Wildlife that inhabit the woods and upland meadow seek refreshment in the wetlands and find protective cover in the nearby woods.

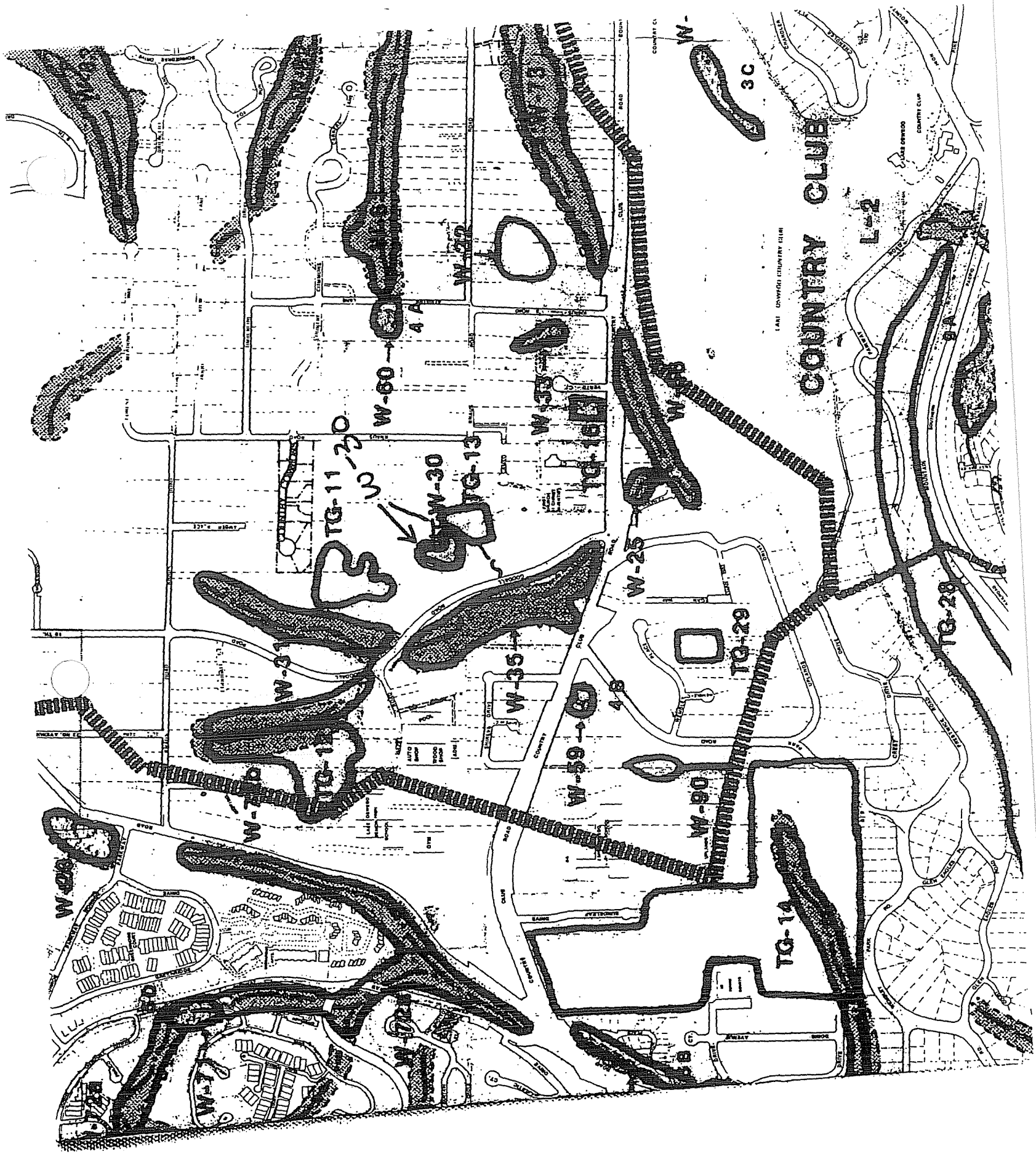
**IMPACTS/DISTURBANCES** The site has been grazed heavily by horses. Grazing increases the dominance of weedy species and limits plant diversity.

**MANAGEMENT RECOMMENDATIONS** Preserve wetlands and adjacent woods.

\* Based on best professional judgment and field assessment methods

**SITE W30**





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W32 SIZE: ≈ 1 acre HABITAT CLASS: Wetland Forest

LOCATION: North of Knaus / Country Club Road

SEC. MAP NO.: 4 WL #: N/A

DATE OF INVENTORY: 10-08-91

2E4DB 400,500,600,900

Habitat Assessment Score: 50

Range for Wetland Forests: 30 - 78

Resource Value Assessment \*

Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>L</u>	Vegetation Diversity	<u>M</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>M</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>H</u>
Groundwater Recharge	<u>H</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This forested wetland is located northeast of the intersection of Knaus Road and Country Club Road and is contiguous with Iron Mountain Creek. The canopy is dominated by Oregon ash and western red cedar. Douglas fir and red alder are also present. The shrub understory is dominated by snowberry and includes spirea, cascara, holly, and red hawthorn. The understory is dominated by slough sedge and Himalayan blackberry. The site lies on a gentle slope and seasonally ponds water in small pockets.

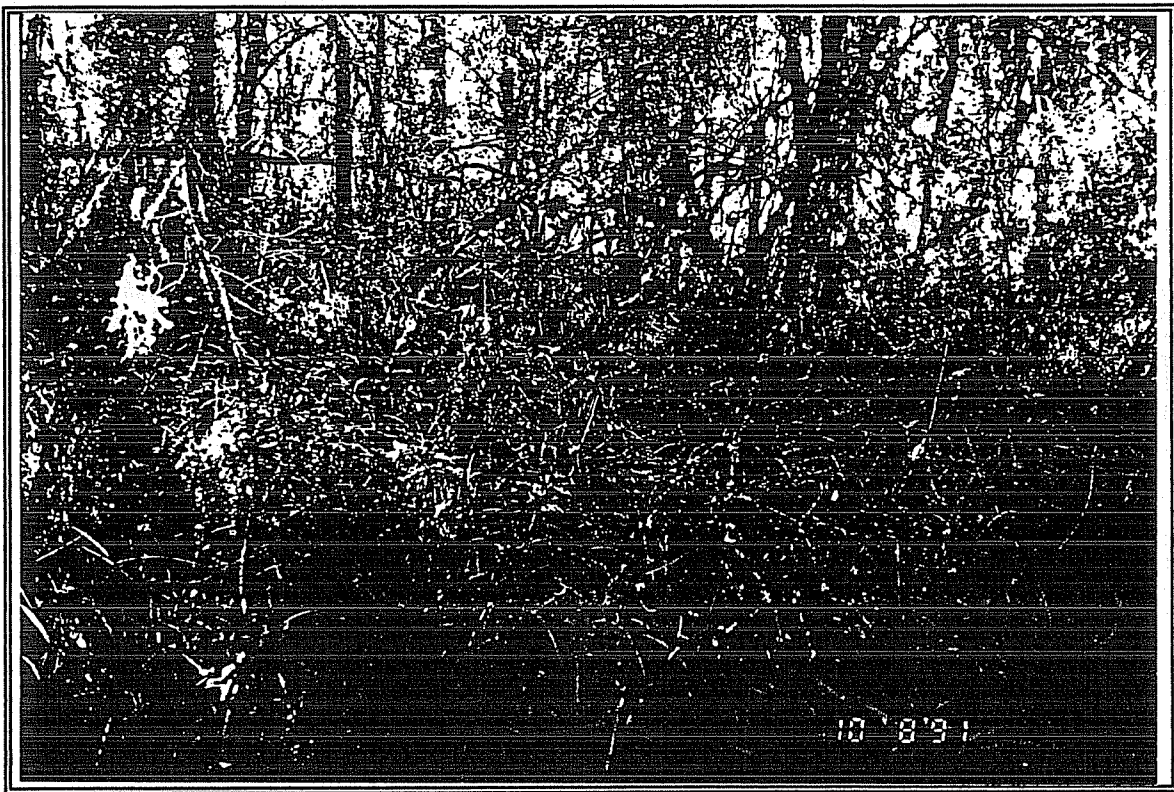
**NATURAL RESOURCE VALUES** Wildlife habitat is moderate. The site's linkage to Iron Mountain Creek increases its value by providing a larger area for small wildlife species to find food and cover. The site is a significant groundwater recharge area for Iron Mountain Creek.

**IMPACTS/DISTURBANCES** Himalayan blackberry is dense in places and reduces habitat value.

**MANAGEMENT RECOMMENDATIONS** Remove Himalayan blackberry and prevent it from dominating the site.

\* Based on best professional judgment and field assessment methods

**SITE W32**





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W44 SIZE: < 0.5 acre HABITAT CLASS: Pond  
LOCATION: Lakewood Bay - Lake Park  
SEC. MAP NO.: 10 WL/DNA #: NA DATE OF INVENTORY: 10-25-91  
21E10AA 600, 5200, 5100, 5100

Habitat Assessment Score: 25		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>H</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>M</u>	Fish Habitat	<u>M</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>L</u>
Education Potential	<u>H</u>	Size/Connectivity	<u>M</u>
Sensitive Species	<u>L</u>	Recreation	<u>H</u>

**GENERAL DESCRIPTION** This park is located along the shoreline of Lakewood Bay. The shoreline is constructed with large rocks and boulders. Vegetation is limited to a narrow band of weedy herbaceous wetland plants including iris, reed canary grass, tough-me-not, and fennel. A few seedling trees and shrubs are also present. Iris and butterfly bush overhang the water providing limited cover for waterfowl. Food resources are even more limited. Mallard, mallard hybrids, and coot were observed near the shoreline.

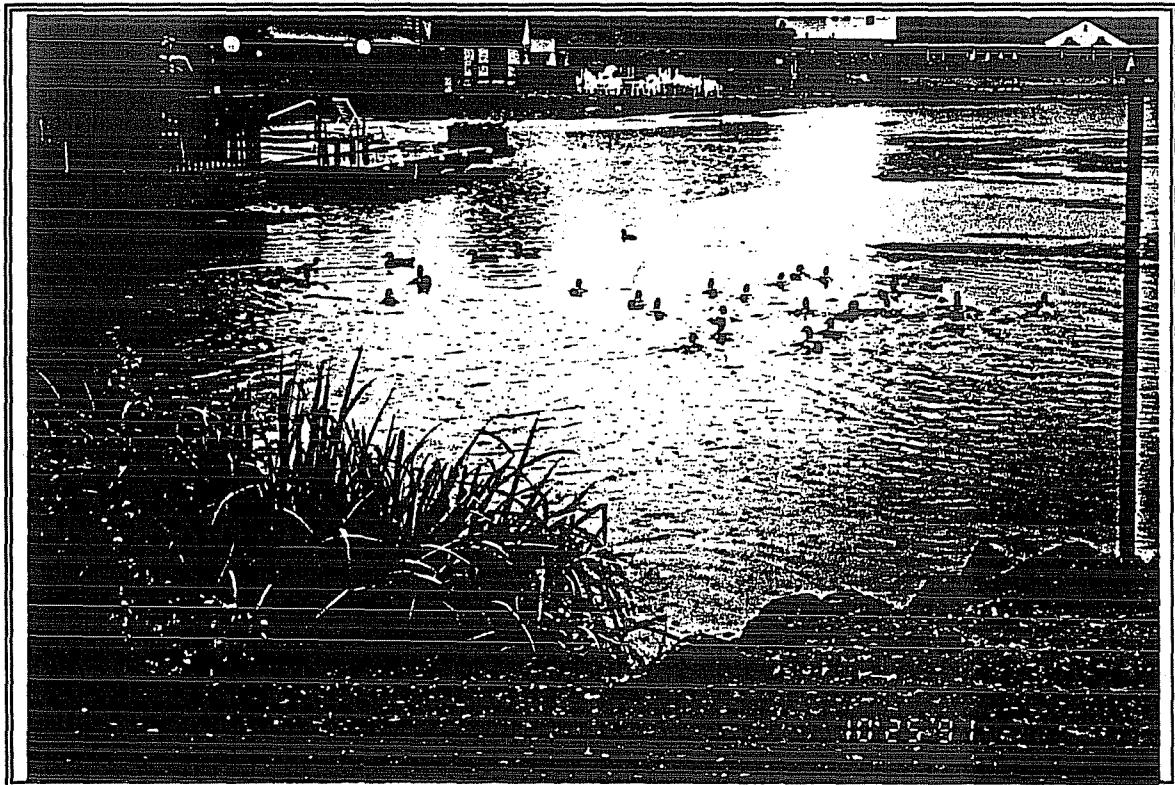
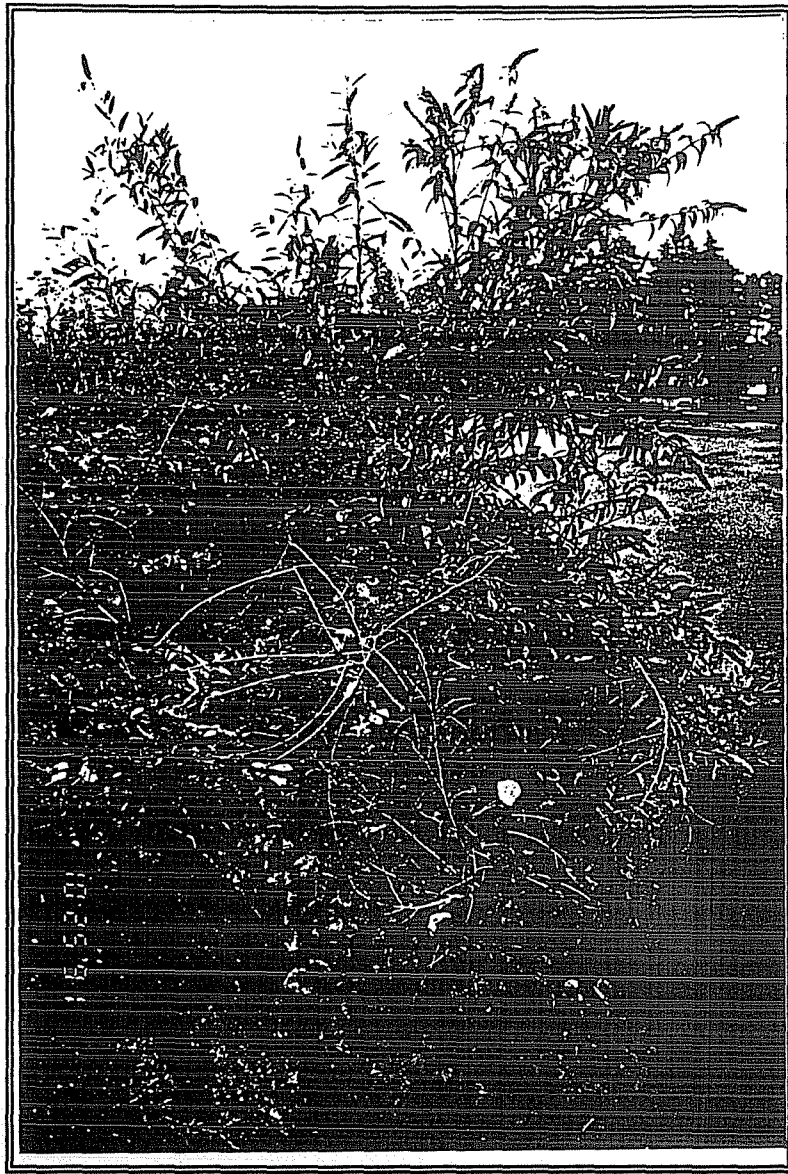
**NATURAL RESOURCE VALUES** The shoreline has very limited natural resource values. It is primarily used by anglers and rates high for recreation. If the site were improved it would have education potential.

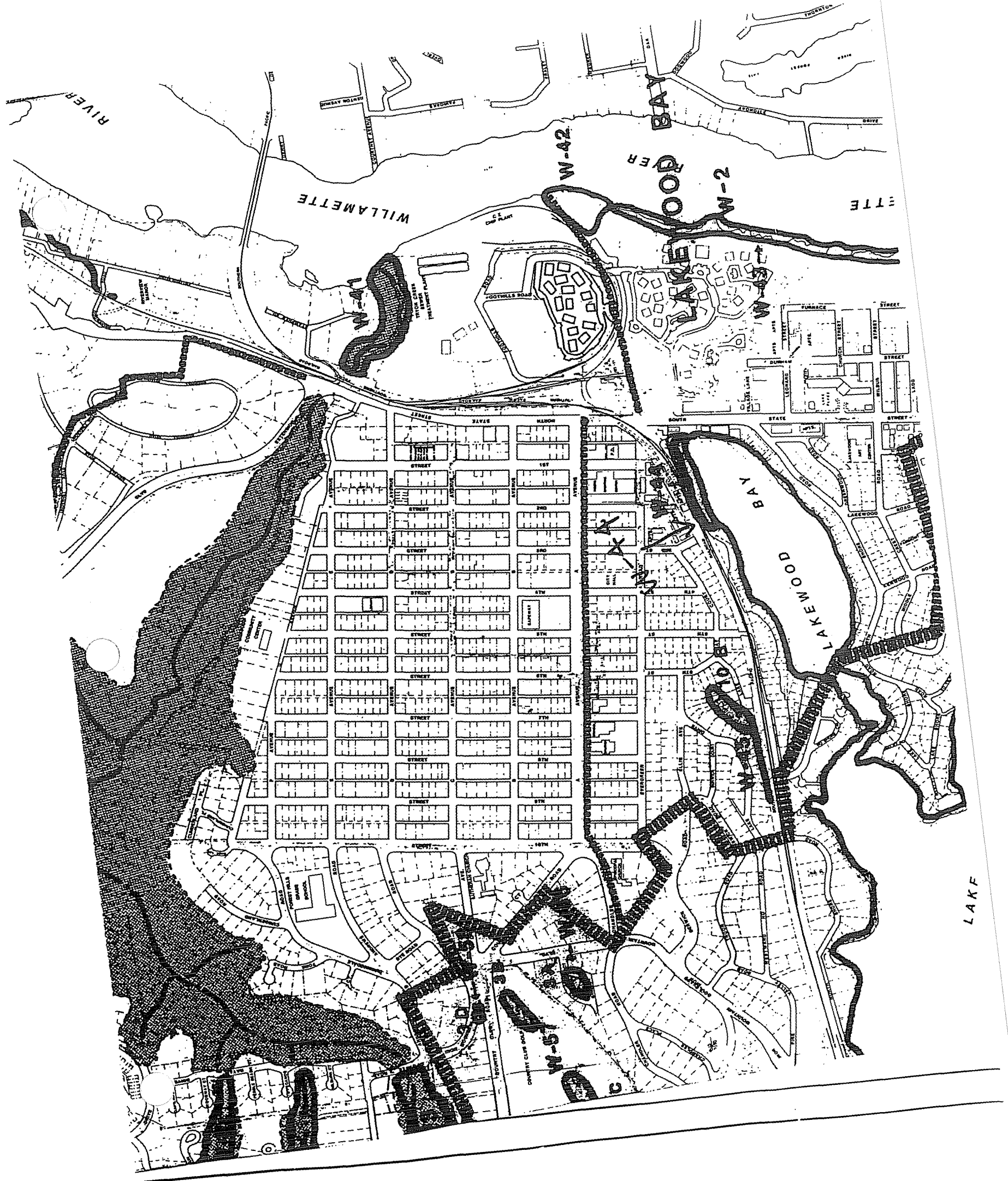
**IMPACTS/DISTURBANCES** The created rocky bank limits vegetation.

**MANAGEMENT RECOMMENDATIONS** Undulate bank and fill with soil pockets for planting trees and shrubs. Diversify vegetative species and structure; plant native species that will enhance food and cover resources. Install swallow nestboxes and inlake structures such as logs and islands to diversify wildlife potential.

\* Based on best professional judgment and field assessment methods

SITE W44





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W46 SIZE: 0.5 acre

HABITAT CLASS: Pond

LOCATION: Garden Court Lake

SEC. MAP NO.: 3 WL #: 3a DIST:

DATE OF INVENTORY: 10-25-91

21322 1000

Habitat Assessment Score: 22		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>H</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>H</u>	Wildlife Habitat	<u>L</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>M</u>

**GENERAL DESCRIPTION** Garden Court Lake is surrounded by Garden Lake Court and residences. Its perimeter is also surrounded by a cyclone fence. The pond supports large cattail and smartweed patches which provide food and cover for waterfowl such as mallard and wood duck. The banks support reed canarygrass and other grasses. A few trees and shrubs are also present. There is an island in the pond with pine trees and ornamental shrubs. The water is a bluish-green color. It has been treated with a chemical to reduce algae.

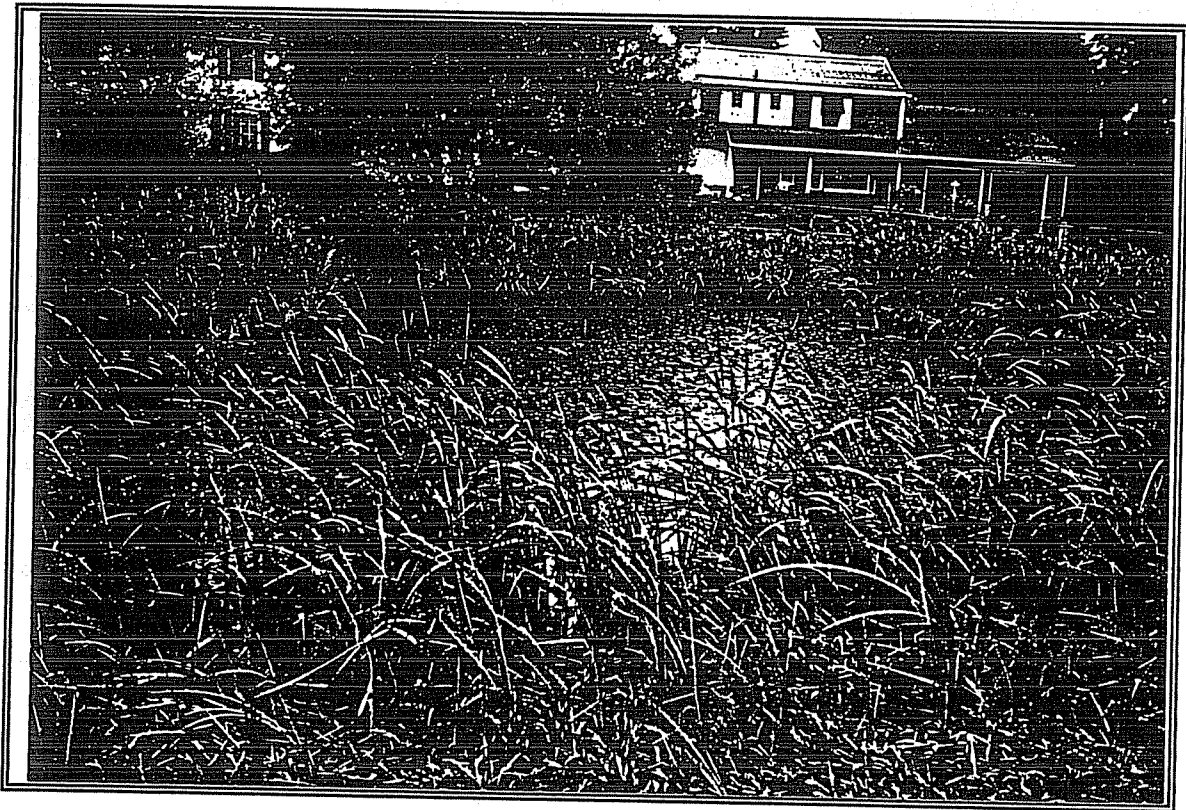
**NATURAL RESOURCE VALUES** The pond's most significant function is maintaining water quality; it stores stormwater and traps sediments and nutrients. It also benefits waterfowl by providing abundant emergent vegetation for food and cover.

**IMPACTS/DISTURBANCES** Water quality may be degraded by chemicals to control algae.

**MANAGEMENT RECOMMENDATIONS** Plant island with grasses and forbs that would provide nesting sites and food resources for waterfowl and other wildlife. Plant a buffer of native trees and shrubs around the pond. The buffer would help screen the roadway from the wetland and would provide food and cover for wildlife. Use non-chemical controls for algae. Eliminate nutrient rich water source from entering the system.

\* Based on best professional judgment and field assessment methods

SITE W46





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W50 SIZE: <0.5 acre HABITAT CLASS: Emergent Wetland  
LOCATION: River Run Park  
SEC. MAP NO.: 20 WL/DNA #: N/A DATE OF INVENTORY: 10-24-91  
NE 2088 145

Habitat Assessment Score: 18		Range for Emergent Wetlands: 10 - 23	
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>L</u>	Vegetation Diversity	<u>L</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>L</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>H</u>
Sensitive Species	<u>L</u>	Recreation	<u>M</u>

**GENERAL DESCRIPTION** This emergent seasonal wetland is located south of River Run Drive and north of the Tualatin River. It consists of two depressions in the north end of a large upland meadow. Vegetation in the wetlands includes creeping buttercup, reed canarygrass, and soft rush. The surrounding upland consists of mowed grasses. The site is used by neighboring residents for daily walks, birdwatching, and dog walking.

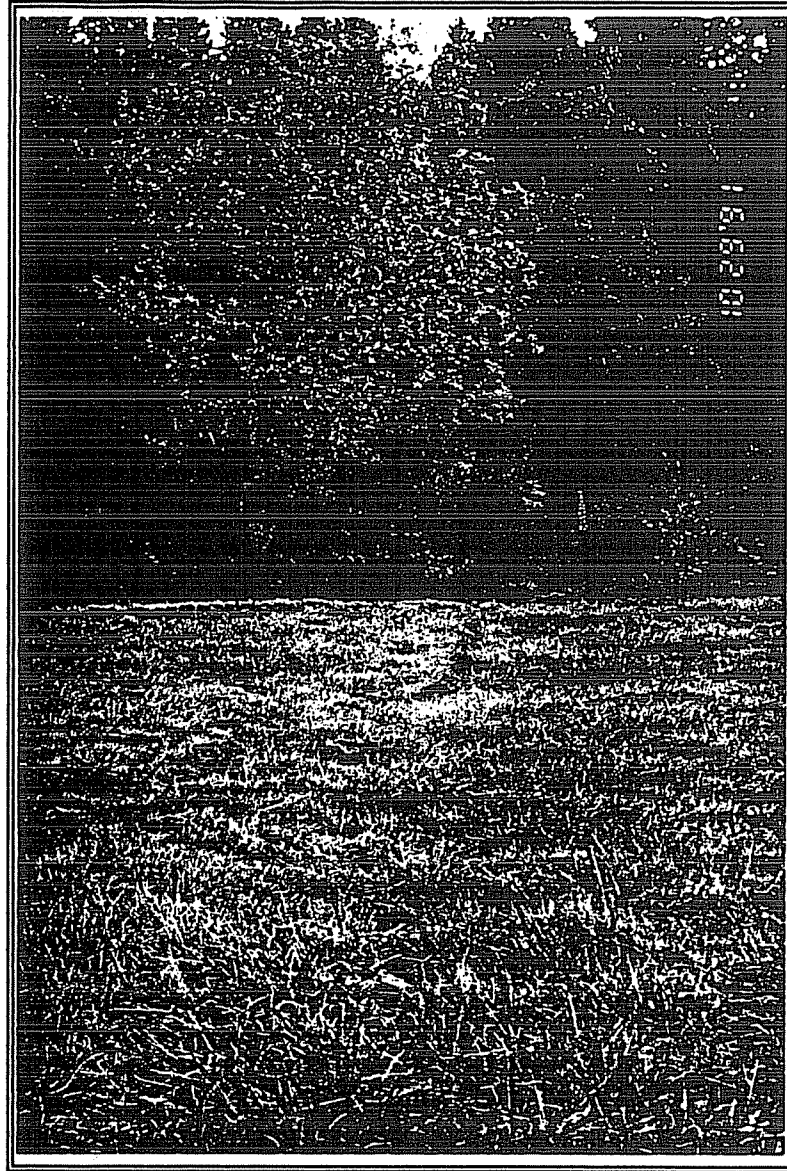
**NATURAL RESOURCE VALUES** Wildlife habitat values are limited by annual mowing. The most significant feature of the site is its connectivity with the Tualatin River.

**IMPACTS/DISTURBANCES** Mowing reduces vegetative structure that provides cover and potential breeding sites for wildlife.

**MANAGEMENT RECOMMENDATIONS** To increase wildlife habitat for winter water fowl, enlarge depression areas to hold more shallow water in the winter. To enhance wildlife habitat, plant a broader riparian strip of native trees and shrubs that would provide food, cover, and breeding sites for wildlife.

\* Based on best professional judgment and field assessment methods

**SITE W50**





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W51 SIZE: ≈ 1 acre HABITAT CLASS: Wetland Forest  
LOCATION: Deerbrush Avenue; Within Woodside Circle (East of Waluga Junior High)  
SEC. MAP NO.: 17 WL/DNA #: N/A DATE OF INVENTORY: 10-30-91  
ZIE17CB 2238

Habitat Assessment Score: 50		Range for Wetland Forests: 30 - 78	
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>M</u>
Sediment Trapping	<u>L</u>	Vegetation Diversity	<u>M-H</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>M</u>
Educational Potential	<u>M</u>	Size/Connectivity	<u>L</u>
Groundwater Recharge	<u>H</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This forested wetland is located east of Waluga Junior High within Woodside Circle. It is surrounded on three sides by residential development and on one side by Deerbrush Avenue. The forest is dominated by Oregon ash, white oak, wild rose, and trailing blackberry. There are pockets of emergent wetland plants including slough sedge, rush, and reed canary grass.

**NATURAL RESOURCE VALUES** The variety of vegetative structure and species provide moderate to high food and cover resources for wildlife. Snags provide potential nesting sites for cavity nesters. Downed woody debris supports potential breeding sites for salamanders. This site could be used by Waluga Junior High as an outdoor laboratory.

**IMPACTS/DISTURBANCES** Impacts are limited to neighborhood trails use and a few weedy species.

**MANAGEMENT RECOMMENDATIONS** Maintain site to prevent encroachment by exotic and invasive species. Prevent surrounding neighborhood from dumping yard debris.

\* Based on best professional judgment and field assessment methods



Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W52 SIZE: ≈ 1 acre

HABITAT CLASS: Emergent Wetland

LOCATION: West of Daniel Way

SEC. MAP NO.: 5 WL/DNA #: N/A

DATE OF INVENTORY: 10-30-91

*WEBB CAMP. 5100, 5300*

Habitat Assessment Score: 22

Range for Emergent Wetlands: 10 - 78

Resource Value Assessment \*

Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>L</u>	Vegetation Diversity	<u>L</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>L</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>M</u>
Sensitive Species	<u>L</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This emergent seasonal wetland is located west of Daniel Way on a moderate slope between a parking lot and a forested wetland. Vegetation consists of grasses, rushes, cattail, bulrush, dock, and willow herb.

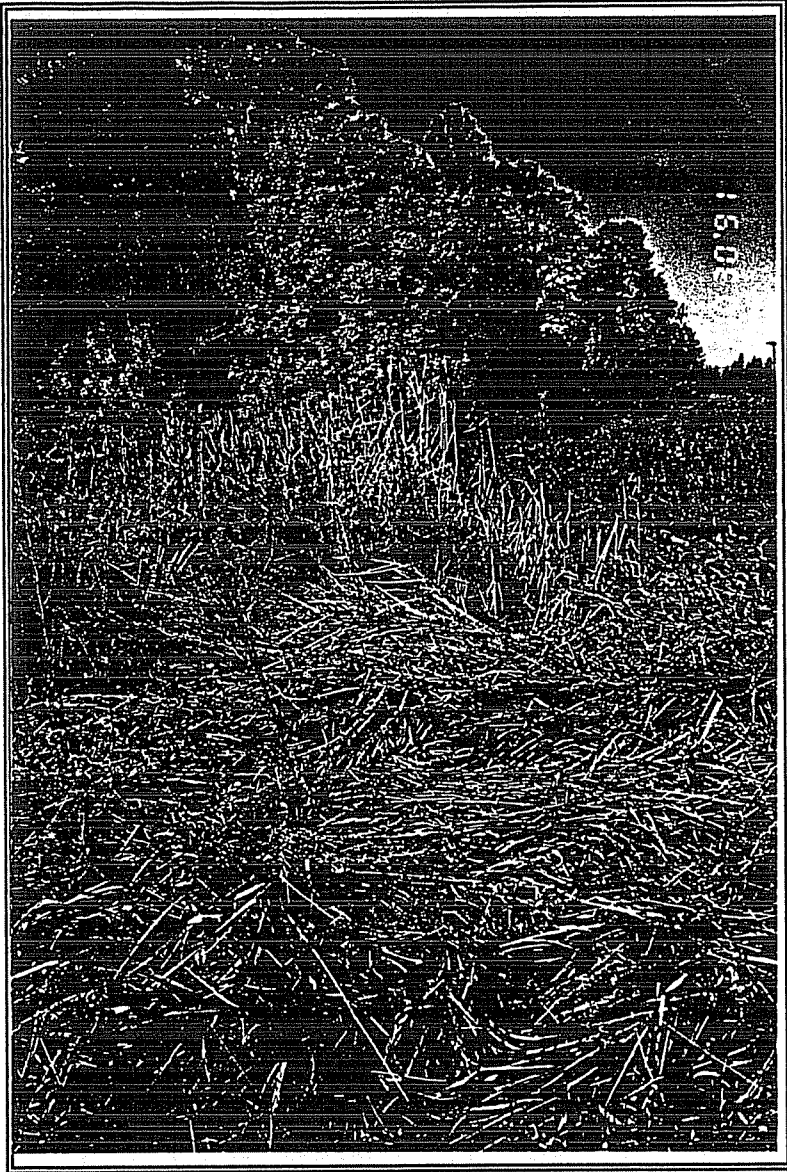
**NATURAL RESOURCE VALUES** The lack of vegetative structure and species diversity, and limited water resources limit the site's natural resource values. The low vegetative structure and seasonal water benefit a few species of small mammals, birds, and reptiles.

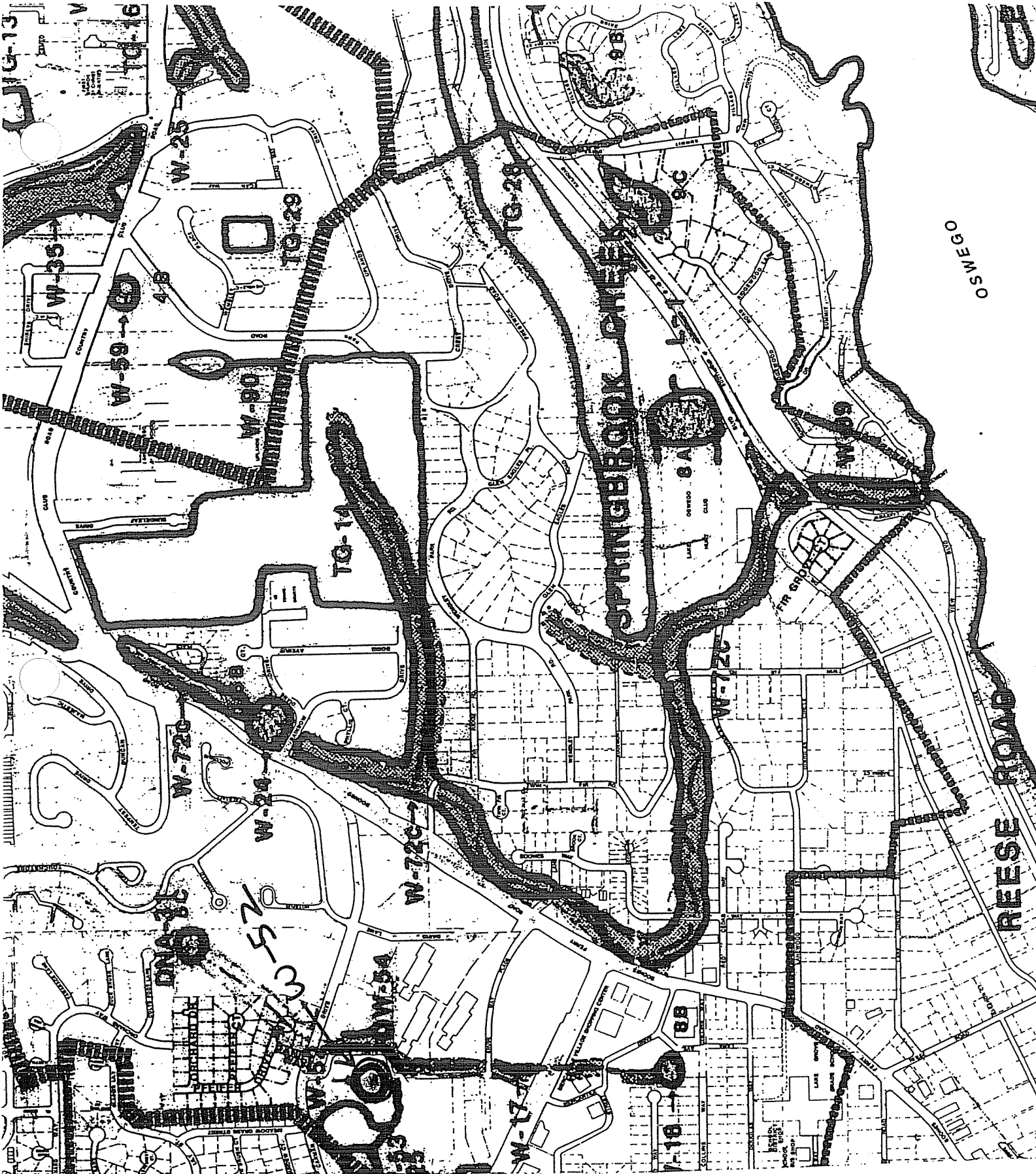
**IMPACTS/DISTURBANCES** None.

**MANAGEMENT RECOMMENDATIONS** Preserve wetlands.

\* Based on best professional judgment and field assessment methods

SITE W52





SPRINGBROOK CREEK

REESE ROAD

OSWEGO

16-13  
16-16

W-25

TO-29

W-59

W-90

TO-14

W-720

W-24

W-720

W-54

W-53

W-52

W-17

W-10

TO-28

TO-27

TO-26

TO-25

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Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W54 SIZE: ≈ 0.5 acre HABITAT CLASS: Emergent Wetland  
LOCATION: East of Daniel Way  
SEC. MAP NO.: 5 WL/DNA #: N/A DATE OF INVENTORY: 10-30-91  
2E 500 500 500

Habitat Assessment Score: 19		Range for Emergent Wetlands: 10 - 78	
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>L-M</u>
Sediment Trapping	<u>L</u>	Vegetation Diversity	<u>L</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>L</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This emergent seasonal wetland is an isolated remnant of a larger wetland. It is located on a moderate slope east of Daniel Way surrounded by roads and commercial development. Vegetation is dominated by velvet grass and soft rush. It also includes bentgrass, cattail, sweetgrass, St. John's wort, and purple clover. At the southern end there is a small cluster of willow saplings.

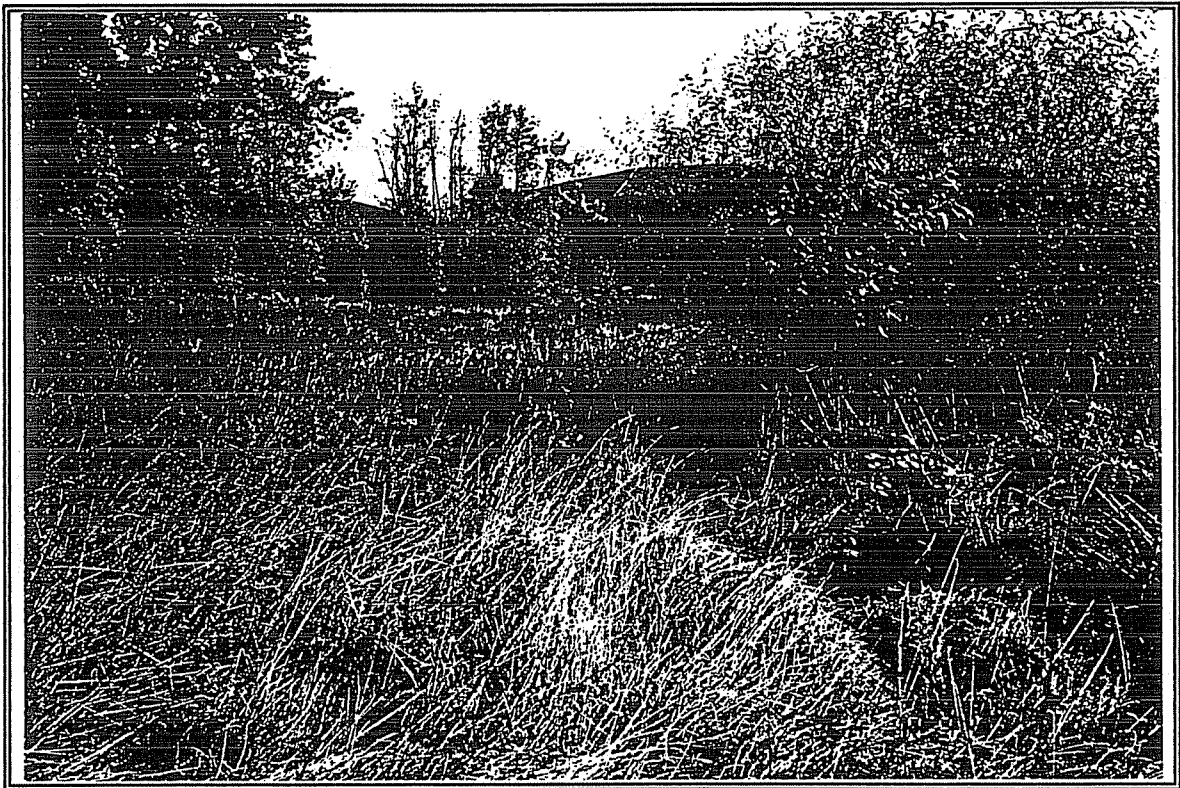
**NATURAL RESOURCE VALUES** The lack of vegetative structure, species diversity, and limited water resources, limit the site's natural resource values.

**IMPACTS/DISTURBANCES** Road construction has separated this portion of the wetland from the larger wetland area to the west.

**MANAGEMENT RECOMMENDATIONS** None.

\* Based on best professional judgment and field assessment methods

**SITE W54**





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W55 SIZE: ≈ 0.5 acre HABITAT CLASS: Wetland Forest  
LOCATION: Northeast and Southeast of McNary/Kerr Parkway  
SEC. MAP NO.: 32 WL/DNA #: N/A DATE OF INVENTORY: 10-30-91

MULTNOMAH 4725 229 ± ADJACENT

Habitat Assessment Score: 55		Range for Wetland Forests: 30 - 78	
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>M</u>
Sediment Trapping	<u>L</u>	Vegetation Diversity	<u>M</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>M</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>H</u>
Groundwater Recharge	<u>M</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** These small forested wetland pondings are located northeast and southeast of the intersection of McNary Parkway and Kerr Parkway. They were most likely created or altered when the roads were constructed. They provide water for a variety of wildlife species that live in the adjacent upland forests. The canopy supports willow and black cottonwood. The shrub layer includes a variety of seed and berry bearing plants. The understory is dominated by manna grass, dock and sword fern and includes lady fern, rush, red top, buttercup, piggyback, speedwell and willowherb.

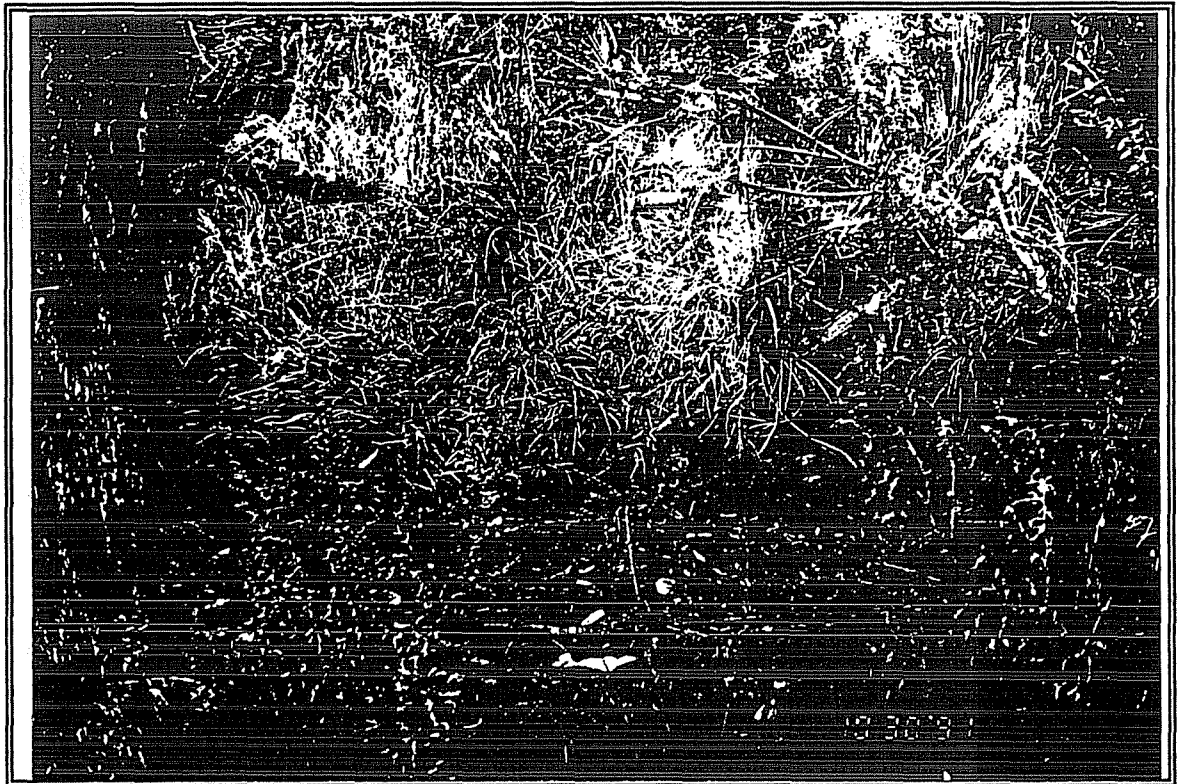
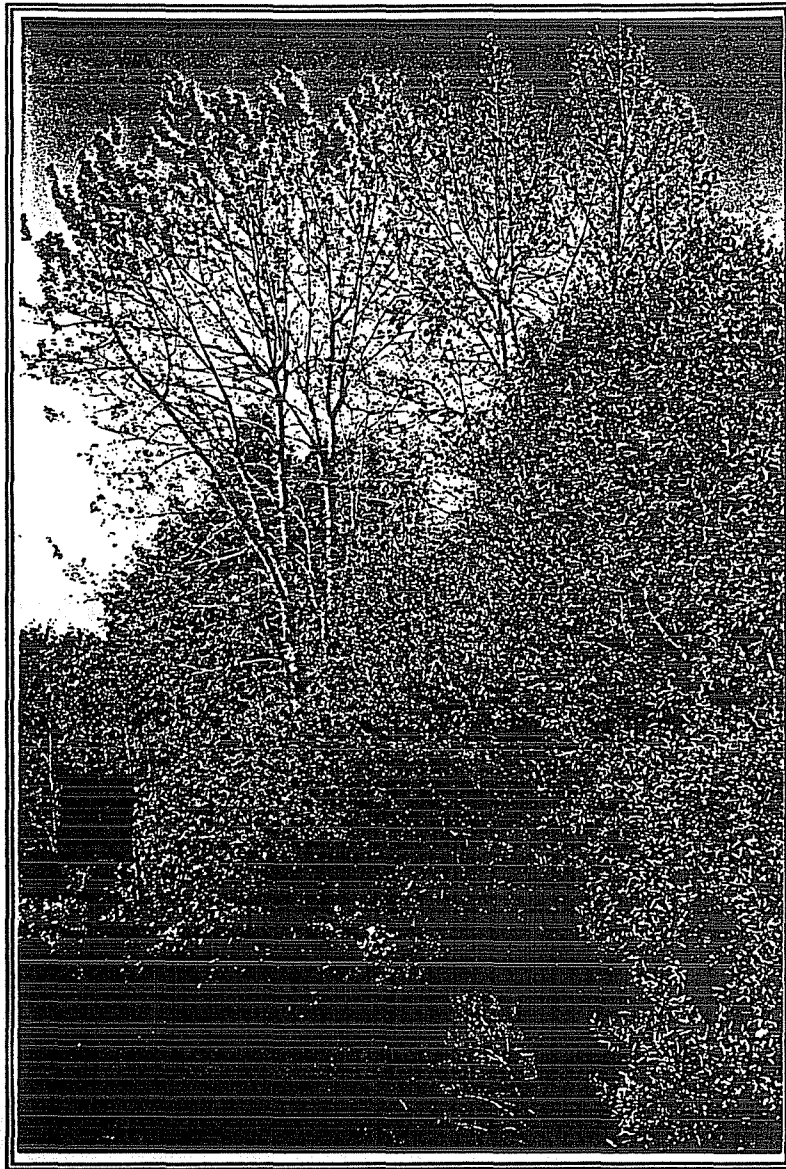
**NATURAL RESOURCE VALUES** This site provides water to wildlife species nesting and living in the adjacent forests. This enables a greater variety of wildlife species to use both the uplands and the wetlands. Consequently, the site has a high connectivity rating. Wildlife habitat is moderate and reflects the limited nature of water resources.

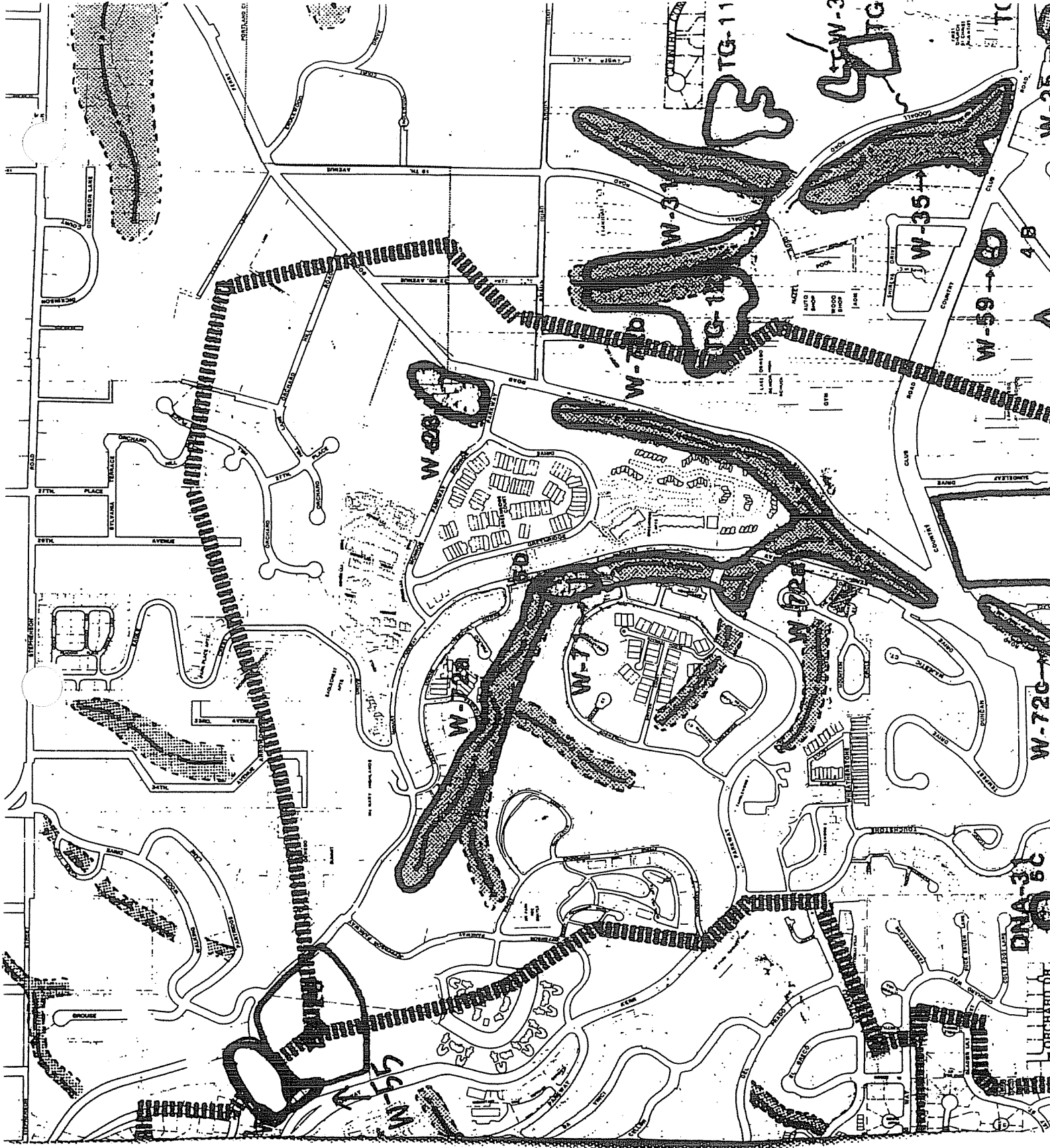
**IMPACTS/DISTURBANCES** The site is adjacent to and bisected by a main road. Traffic noise may impact some wildlife species. Accidents may eliminate others.

**MANAGEMENT RECOMMENDATIONS** Preserve water source for wildlife. Assess and maintain good water quality.

\* Based on best professional judgment and field assessment methods

SITE W55





TG-11

W-3

TG

W-31

TG-11

W-71b

W-35

W-59

4-B

W-58

W-72a

W-72c

DNA-3c

FORCHARD DC

W-75

Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W57 SIZE: ≈ 2 acres

HABITAT CLASS: Pond

LOCATION: Lake Oswego Country Club

SEC. MAP NO.: 3, 4 WL/DNA #: 3 b&c

DATE OF INVENTORY: 11-07-91

ZIE4 100

Habitat Assessment Score: 19		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>L-M</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>L-M</u>	Wildlife Habitat	<u>L</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>M</u>

**GENERAL DESCRIPTION** These ponds are located on the Lake Oswego Country Club Golf Course. Limited vegetation grows on the banks. Soft rush and cattails are the dominant species. The ponds are primarily used by mallard. Mosquito fish are also present.

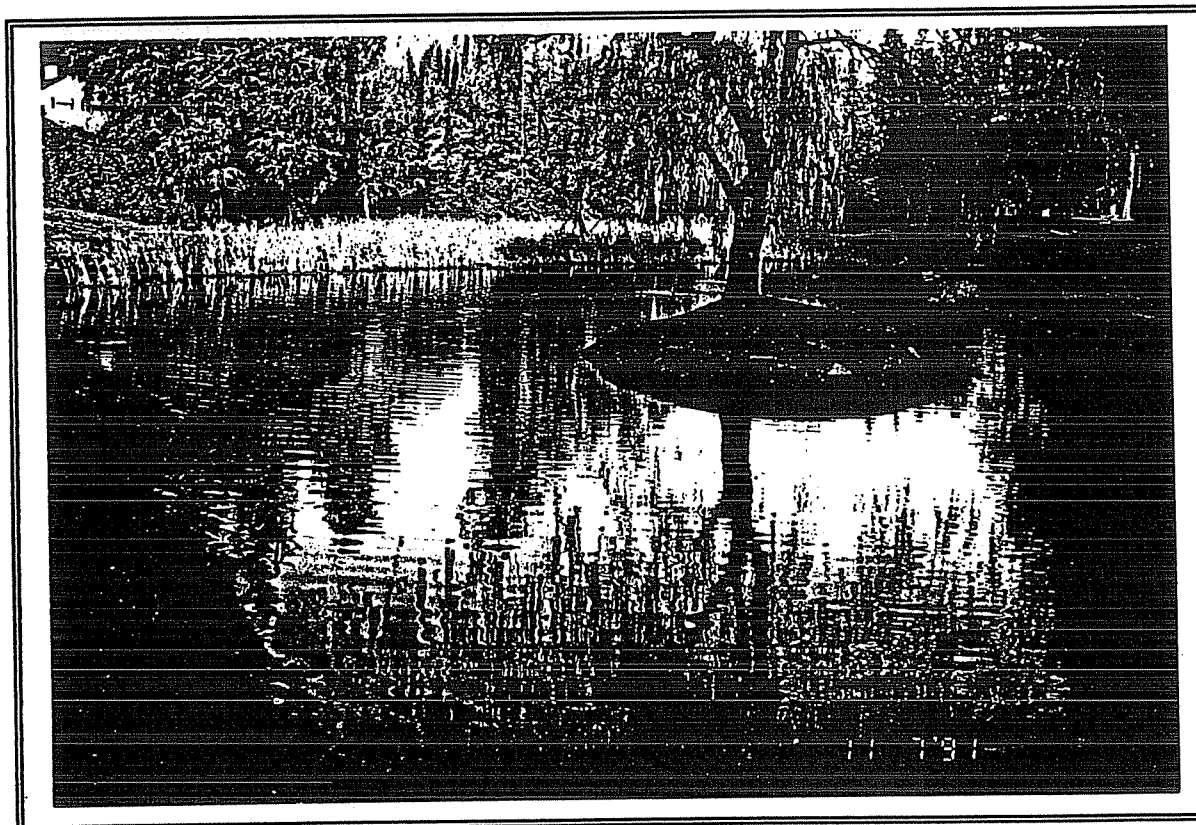
**NATURAL RESOURCE VALUES** The value of the site is mostly recreational as a water hazard for the golfers. They also function as storage sites for stormwater and collection sites for sediments and nutrients.

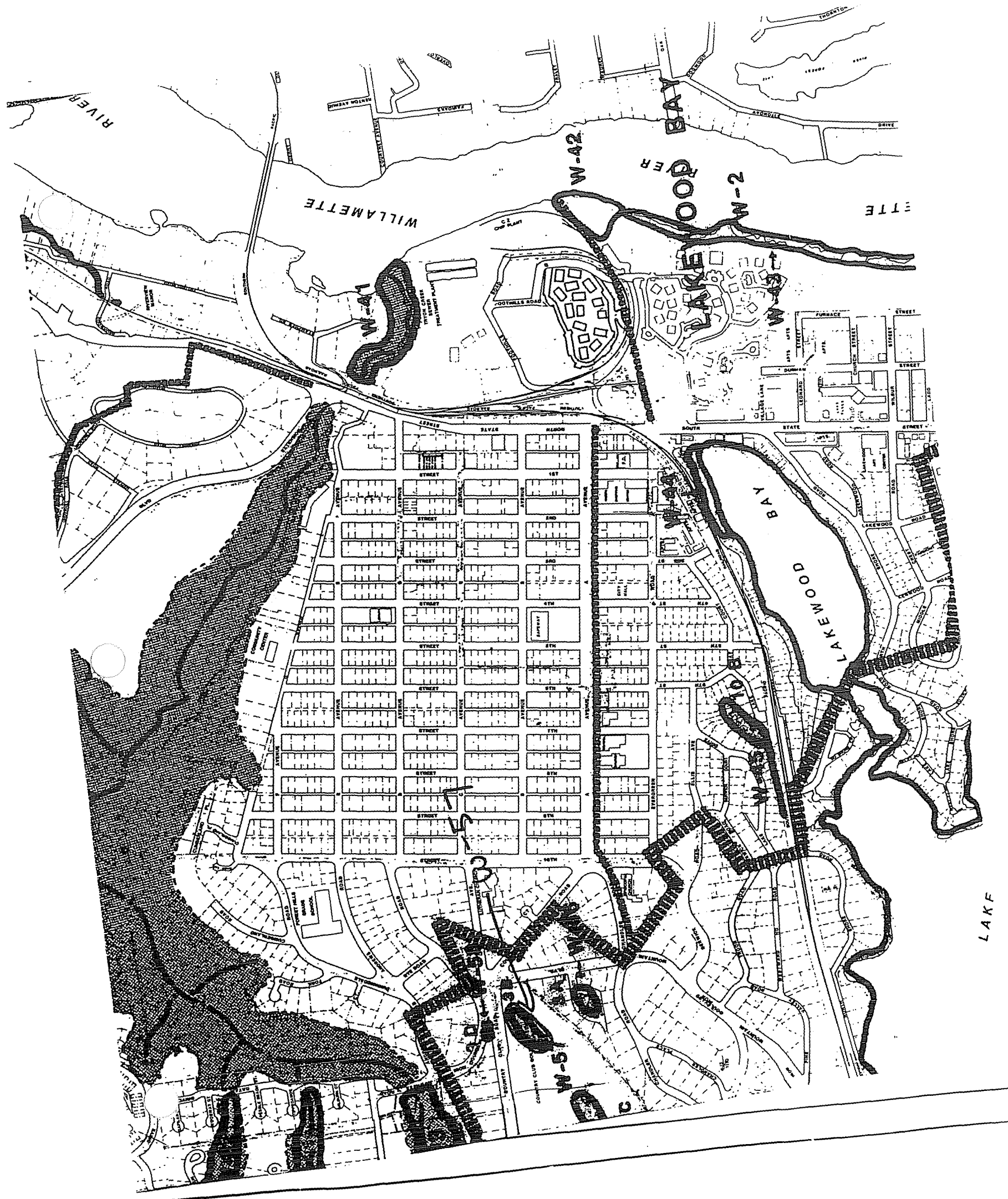
**IMPACTS/DISTURBANCES** Water quality for wildlife is questionable; a chemical has been added to reduce algae and the water is an aquamarine color. Mowing bank vegetation reduces food and cover resources for waterfowl.

**MANAGEMENT RECOMMENDATIONS** Wildlife habitat can be improved without impacting golfers. A variety of emergent vegetation could be planted. To improve food resources for waterfowl, plant plants such as sedges, waterlily, wapato, burreed and bulrush. Plant island with forbs and grasses to provide nesting habitat for waterfowl. A variety of low shrubs and trees that wouldn't obscure golfers vision could also be selectively planted to provide perches and cover for songbirds. The trees and shrubs can be included in a fifteen foot buffer of unmowed vegetation surrounding the pond. Plant island with forbs and grasses to provide nesting habitat for water fowl. The golf course could be encouraged to use less fertilizer to alleviate algae problem.

\* Based on best professional judgment and field assessment methods

SITE W57





RIVER

WILLAMETTE

W-42

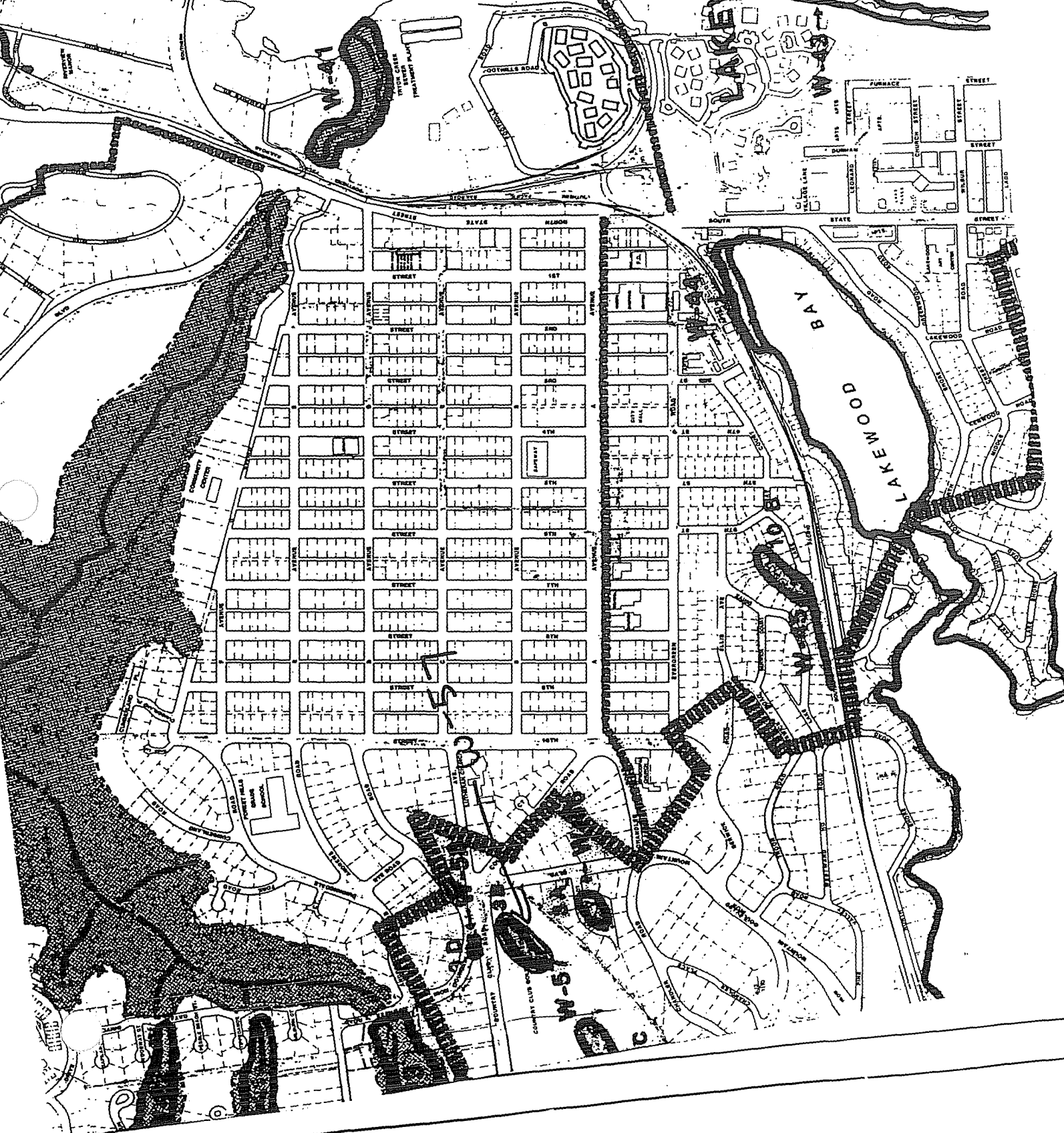
W-2

W-5

W-3

LAKWOOD BAY

LAKF



Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W58 SIZE: ≈ 0.5 acre HABITAT CLASS: Wetland Forest  
LOCATION: Northwest of Iron Mountain Blvd./Country Club Road  
SEC. MAP NO.: 3 WL/DNA #: 3d DATE OF INVENTORY: 11-07-91  
2E3CB 1900

Habitat Assessment Score: 51		Range for Wetland Forests: 30 - 78	
<b>Resource Value Assessment *</b>			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>M</u>	Vegetation Diversity	<u>M</u>
Nutrient Retention	<u>M</u>	Wildlife Habitat	<u>L-M</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Groundwater Recharge	<u>L</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This forested wetland is located northwest of the intersection of Iron Mountain Blvd. and Country Club Road. It is small and isolated from other natural areas by roads and residential development. This site ponds water throughout the year. Himalayan blackberry was cleared off the site before it was visited allowing the field team to observe a greater diversity of plants than would have been apparent if the blackberries were present. The canopy is dominated by black cottonwood and red alder. Pacific willow and Oregon ash are also present. Willow, spirea, red-osier dogwood, rose, and red hawthorne occur in the shrub layer. Slough sedge dominates the understory. The site collects urban runoff; intakes and outlets were not obvious.

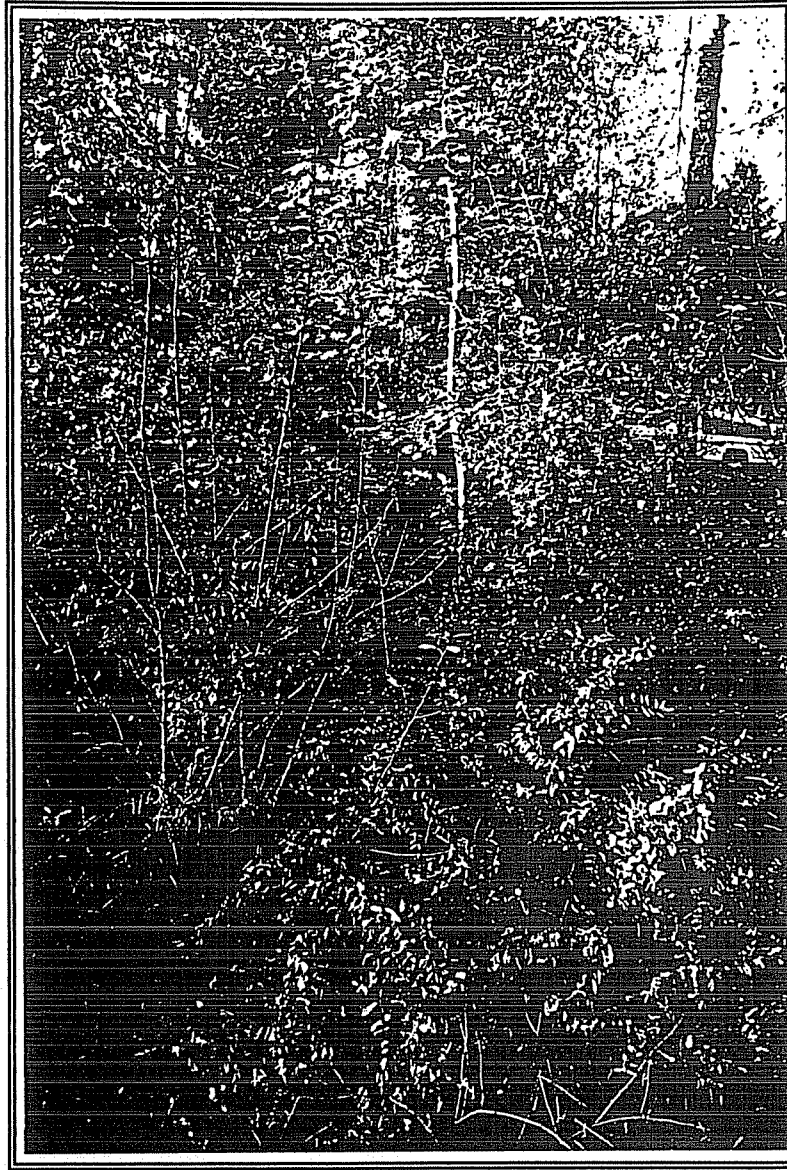
**NATURAL RESOURCE VALUES** Wildlife habitat value is low to moderate. The site is small and adjacent to a major thoroughfare. The constant traffic noise and small size would prevent many species from inhabiting the site. Assuming water travels through the site seasonally, sediment trapping and nutrient retention are important functions provided by the wetland.

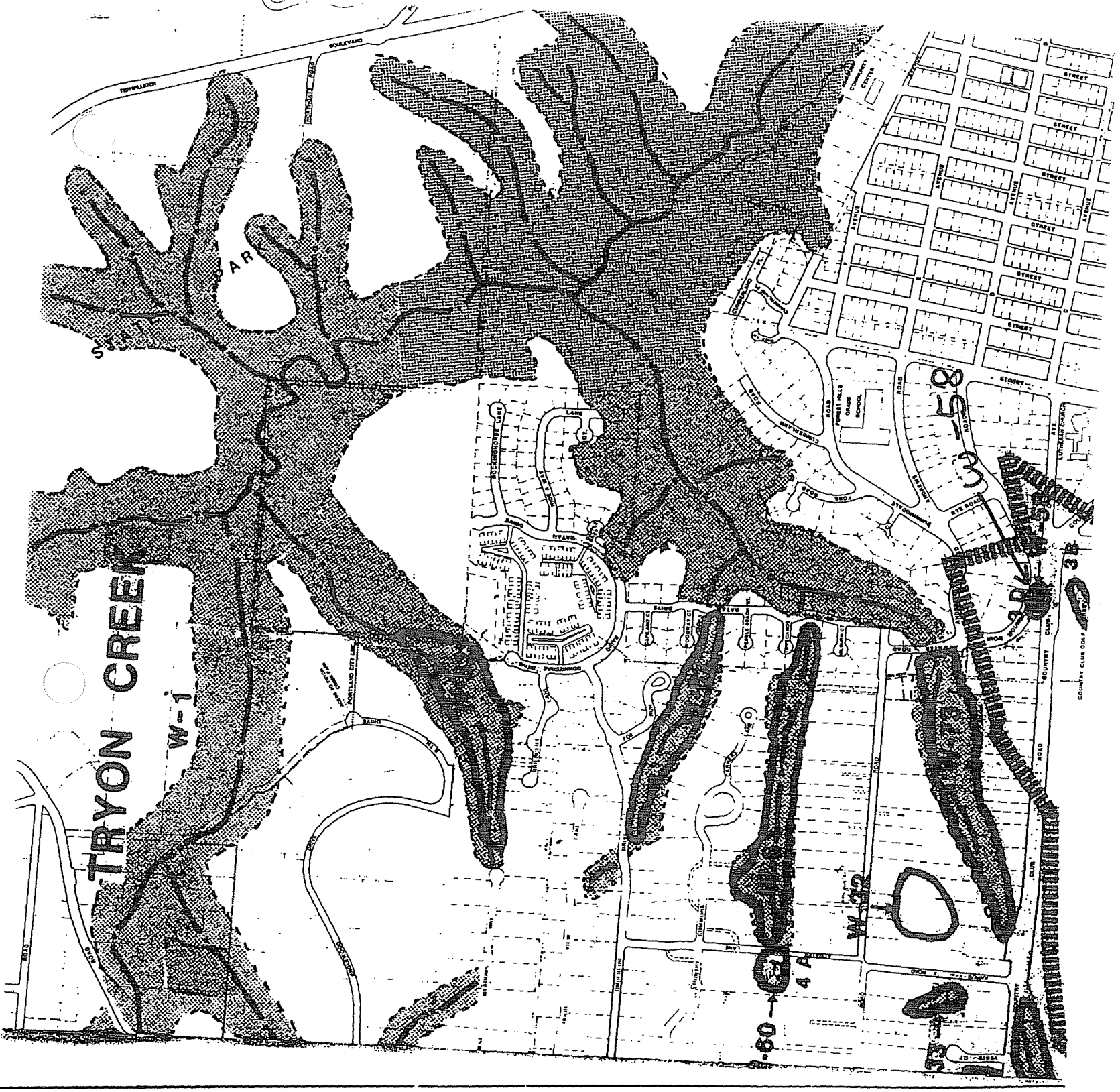
**IMPACTS/DISTURBANCES** Traffic noise may impact some wildlife species; accidents may eliminate others. Himalayan blackberry dominates the site.

**MANAGEMENT RECOMMENDATIONS** Keep blackberry under control.

\* Based on best professional judgment and field assessment methods

SITE W58





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W59 SIZE: ≈ 0.5 acre HABITAT CLASS: Pond  
LOCATION: Near Country Club Road/Wembly Park Road  
SEC. MAP NO.: 4 WL/DNA #: 4b DATE OF INVENTORY: 11-07-91  
WE4CB 3900

Habitat Assessment Score: 35	Range for Ponds: 10 - 77
<b>Resource Value Assessment *</b>	
Stormwater Storage <u>L</u>	Undisturbed Condition <u>L</u>
Sediment Trapping <u>L</u>	Fish Habitat <u>L</u>
Nutrient Retention <u>L</u>	Wildlife Habitat <u>L-M</u>
Education Potential <u>L</u>	Size/Connectivity <u>L</u>
Sensitive Species <u>L</u>	Recreation <u>L</u>

**GENERAL DESCRIPTION** This pond is small but retains shallow water throughout the year. It is located on farmland adjacent to Country Club Road. It may be used for watering animals, but was not used for that purpose when the site was visited. The pond is surrounded by a single row of red alder and Oregon ash trees that shade the water. Groundcover is a mixture of pasture grasses. Emergent vegetation is abundant throughout the pond and is dominated by smartweed. Iris, cattail, soft rush, and creeping buttercup are also present.

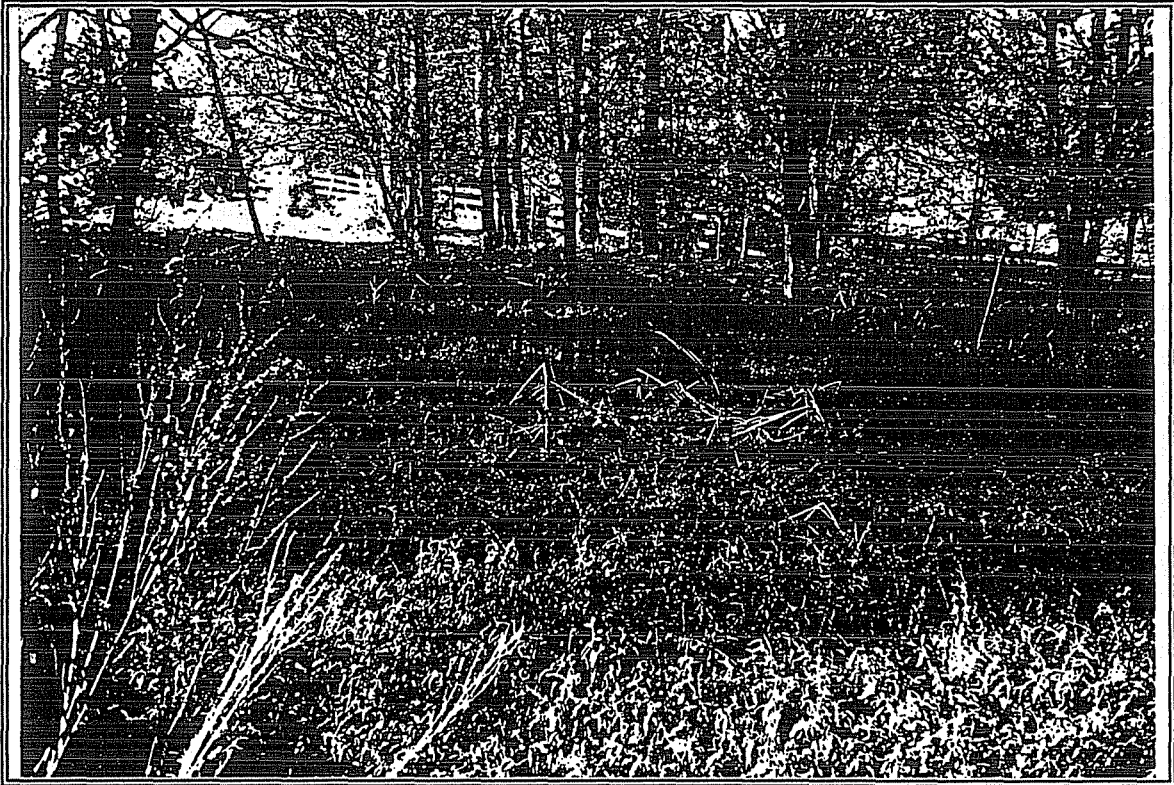
**NATURAL RESOURCE VALUES** The pond provides potential breeding habitat for frogs. Abundant emergent vegetation provides potential food for waterfowl. The small size of this pond and its location beside Country Club road limit its wildlife habitat value.

**IMPACTS/DISTURBANCES** Traffic noise may impact use of the site by some wildlife species.

**MANAGEMENT RECOMMENDATIONS** Preserve pond, emergent plants and tree buffer.

\* Based on best professional judgment and field assessment methods

SITE W59





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W60 SIZE: ≈ 1 acre HABITAT CLASS: Emergent Wetland  
LOCATION: Southwest of Atwater Lane / Country Commons  
SEC. MAP NO.: 4 WL/DNA #: 15 DATE OF INVENTORY: 11-07-91  
2.1E4AC 1900

Habitat Assessment Score: 10		Range for Emergent Wetlands: 10 - 23	
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>L</u>	Vegetation Diversity	<u>L</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>L</u>
Educational Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This emergent wetland is located southwest of the southern end of Atwater Lane in a residential neighborhood. The wetland and adjacent upland meadows are grazed by cattle. Vegetation is limited to closely cropped grasses, soft rush, and bulrush. Groundwater and limited surface water from the site are connected to a tributary of Tryon creek located east of the site.

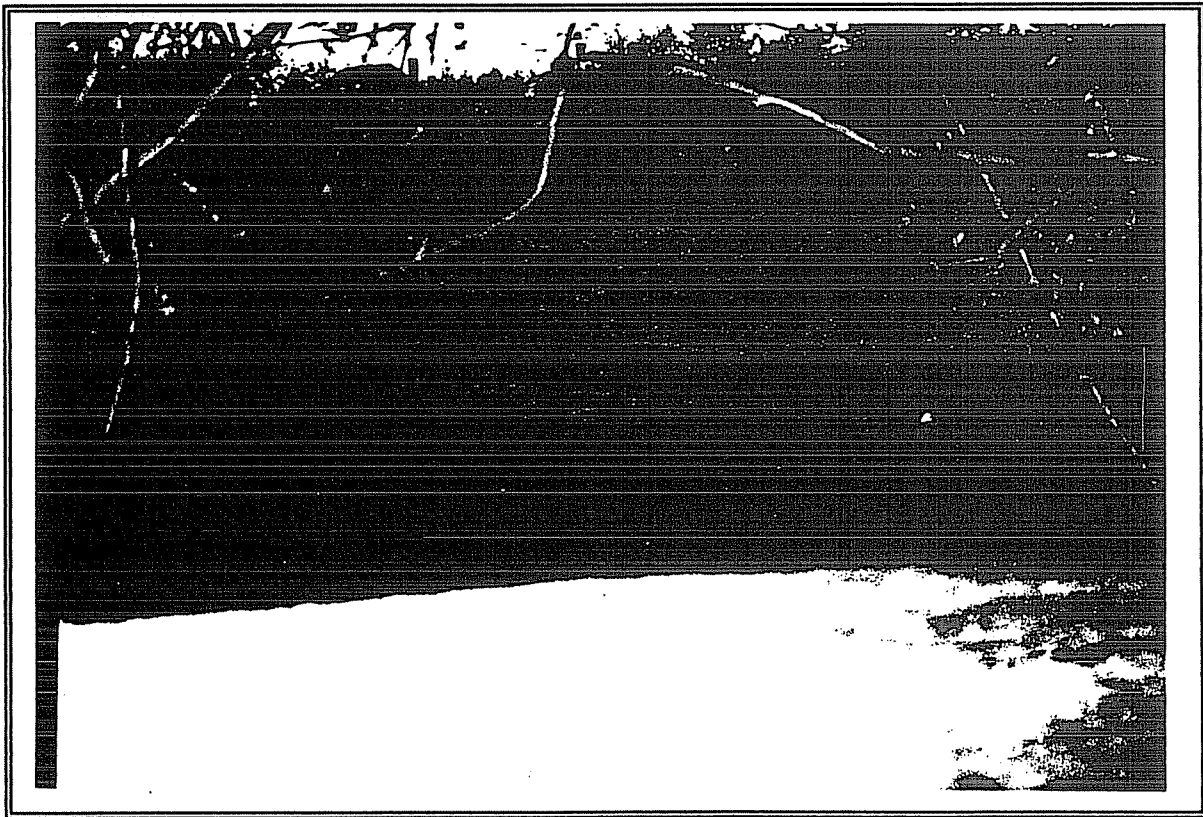
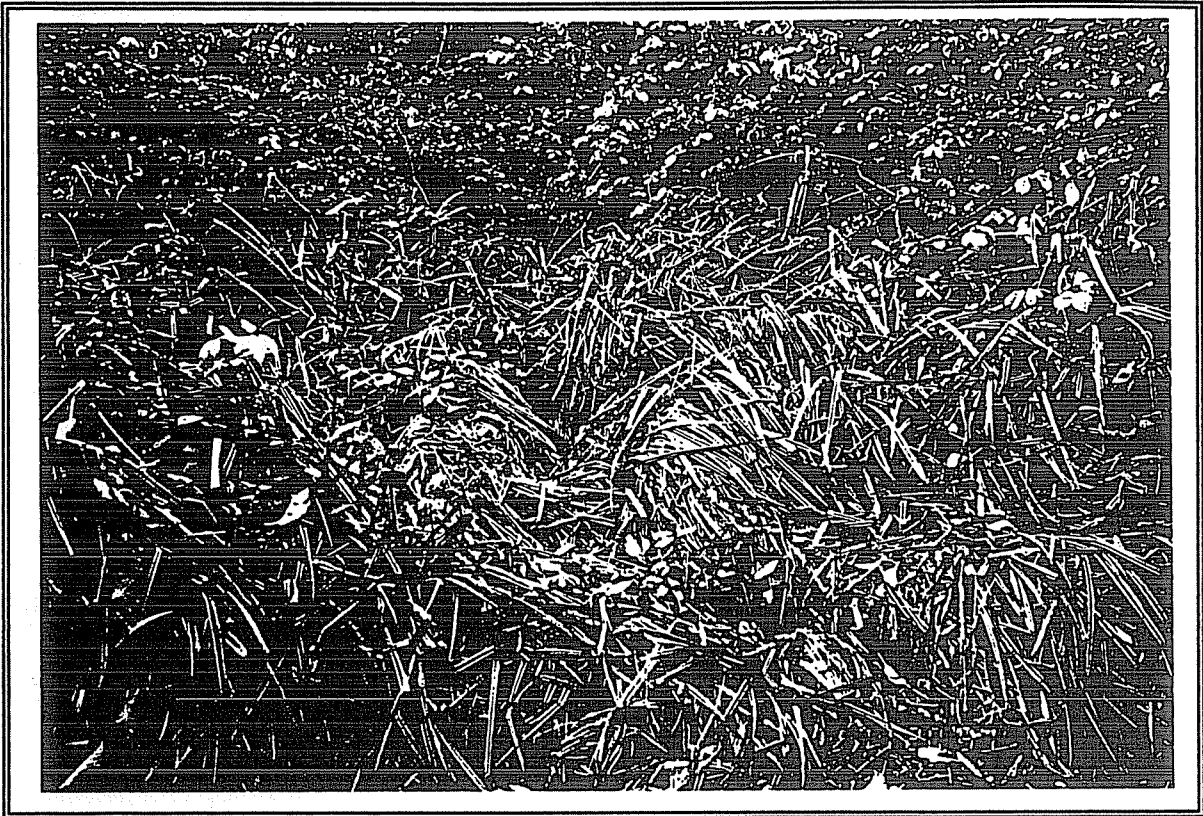
**NATURAL RESOURCE VALUES** Site W60 is the headwater area for a tributary of Tryon Creek. It has low wildlife habitat value because of low vegetation diversity and structure due to impacts by cattle. Killdeer and common flicker were observed feeding on the site.

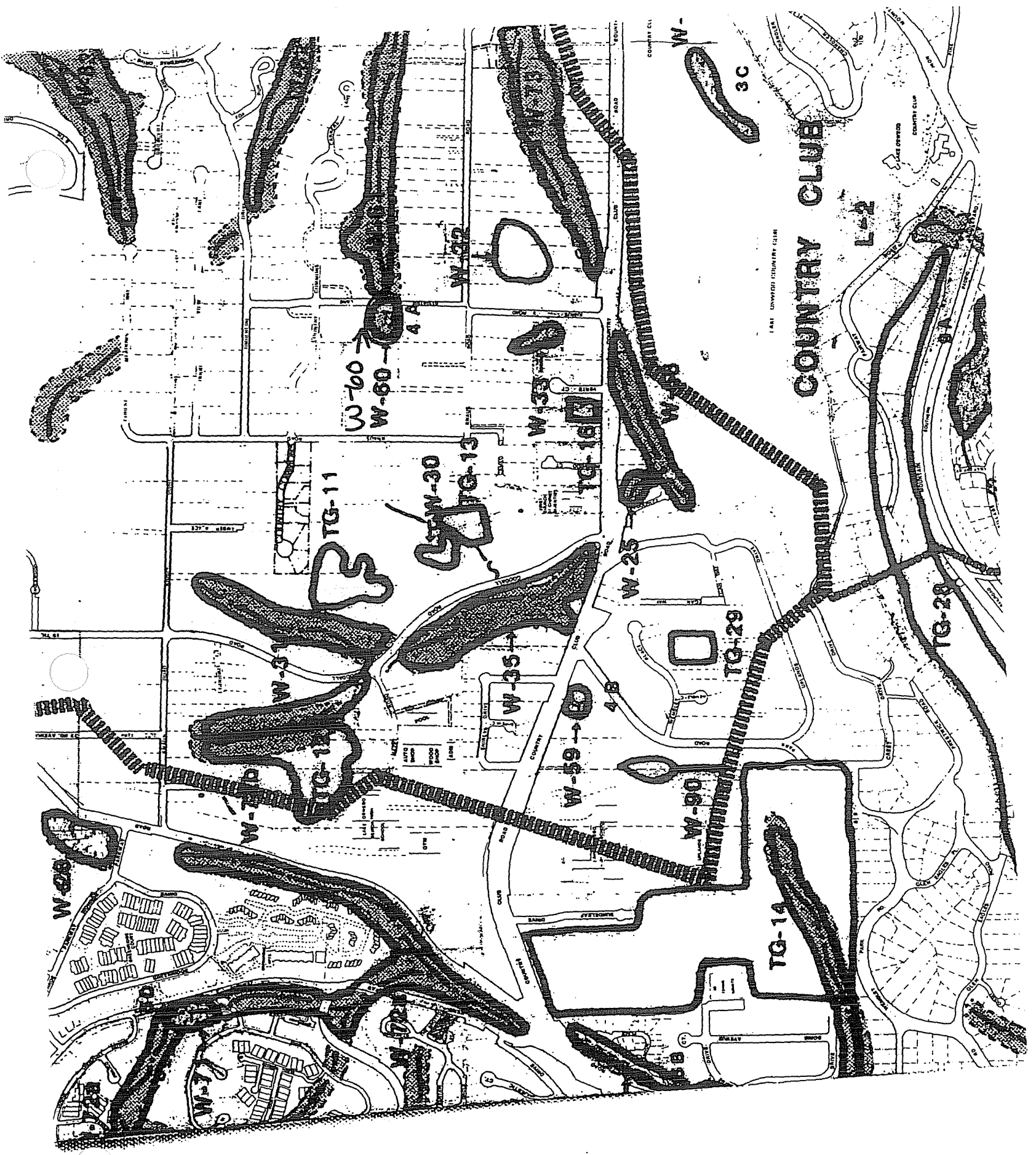
**IMPACTS/DISTURBANCES** Vegetation and soils have been impacted by years of cattle grazing. Vegetation structure and diversity are limited; soils have been compacted.

**MANAGEMENT RECOMMENDATIONS** Preserve headwater area; improve vegetation.

\* Based on best professional judgment and field assessment methods

SITE W60





COUNTRY CLUB

L-2

L-1

3C

TG-20

TG-29

TG-14

W-60

W-60

TG-11

W-30

TG-13

W-33

TG-16

W-25

W-35

W-59

W-90

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TG-92

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TG-96

TG-97

TG-98

TG-99

TG-100

Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W66 SIZE: ≈ 0.5 acre

HABITAT CLASS: Pond

LOCATION: Rogers Road

SEC. MAP NO.: 6 WL/DNA #: 3a

DATE OF INVENTORY: 11-14-91

*2166A 5/2*

Habitat Assessment Score: 21		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>M</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>M</u>	Wildlife Habitat	<u>L</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This pond is located east of Rogers Road. It appears to be a mitigation pond. The pond has been excavated and the banks have been protected with large rocks and boulders. The emergent vegetation supports cattails, bulrush, barnyard grass, speedwell, rush, and dock. Red alder and willow seedlings are beginning to colonize the site. A single row of trees was planted around the pond, but most of these trees are dead.

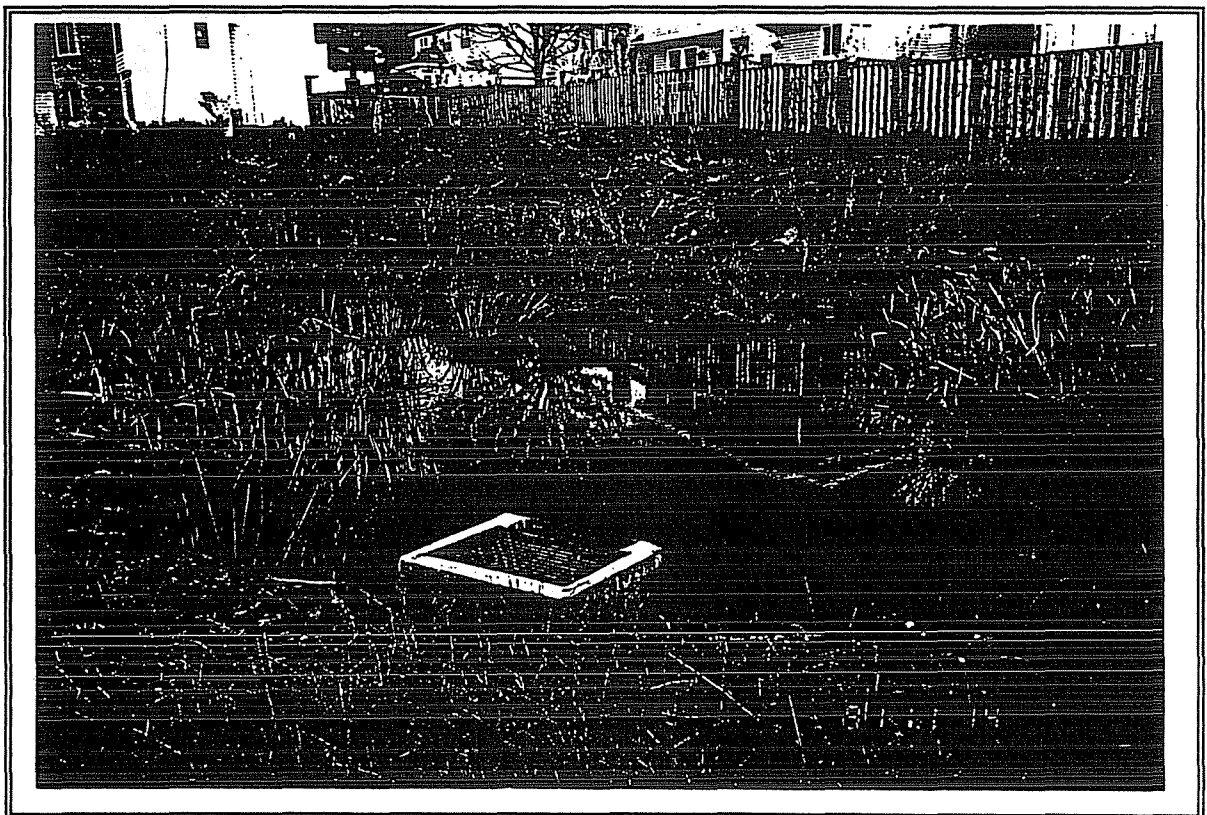
**NATURAL RESOURCE VALUES** This shallow water pond is of low value to wildlife. Its value will increase as greater plant diversity develops. Its most significant function is in maintaining water quality; it stores stormwater and traps sediments and nutrients.

**IMPACTS/DISTURBANCES** The site is an artificially created pond.

**MANAGEMENT RECOMMENDATIONS** The dead buffer of trees and shrubs surrounding the pond should be replanted with native trees and shrubs that will provide wildlife with food and cover.

\* Based on best professional judgment and field assessment methods

SITE W66





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W67 SIZE: 4 HABITAT CLASS: Stream Corridor & Pond  
LOCATION: Twin Creek Lane  
SEC. MAP NO.: 6 WL/DNA #: 6E DATE OF INVENTORY: 11-14-91  
21E6BA 719 21E6BD 159, 160

Habitat Assessment Score: 28

Range for Stream Corridors: 18 - 93

Range for Ponds: 10 - 77

Resource Value Assessment \*

Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>H</u>	Vegetation Diversity	<u>L</u>
Nutrient Retention	<u>H</u>	Wildlife Habitat	<u>L</u>
Slope Stability	<u>L</u>	Connectivity	<u>L</u>
Education Potential	<u>L</u>	Recreation	<u>L</u>
Fish Habitat	<u>L</u>	Wildlife Travel Corridor	<u>L</u>

**GENERAL DESCRIPTION** This stream is the headwaters of Ball Creek. It originates adjacent to Deerfield Court and ends in a ponding at a culvert adjacent to Twin Creek Lane. It is surrounded by residential development. This is a perennial drainage in a narrow channel with limited wetlands except at the bottom in the ponded area. Vegetation along the channel is dominated by grasses. Pond vegetation is dominated by cattails. Pioneer red alder, black cottonwood and willow seedlings are beginning to grow around the pond.

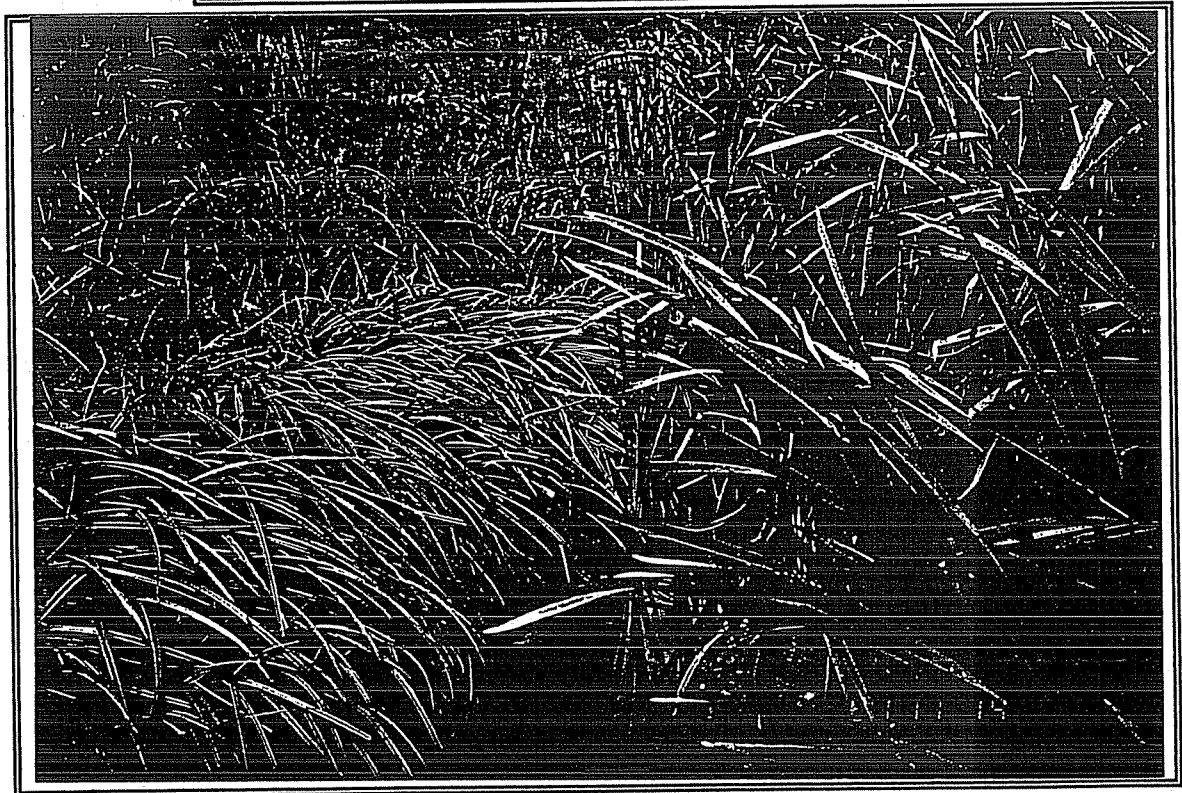
**NATURAL RESOURCE VALUES** The availability of water for wildlife is the most significant feature of this site. The abundant emergent vegetation in the pond helps improve downstream water quality by trapping nutrients and sediments from runoff waters. The lack of vegetative structure and species diversity limits the wildlife habitat value of this site.

**IMPACTS/DISTURBANCES** A small population of purple loosestrife is present around the pond. It poses a threat to other wetlands as a seed source.

**MANAGEMENT RECOMMENDATIONS** Remove loostrife to prevent its spread in site W67 and other nearby wetlands. Plant trees/shrubs in open areas adjacent to the stream to improve wildlife habitat value.

\* Based on best professional judgment and field assessment methods

SITE W67





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W68 SIZE: ≈ 2.5 acres HABITAT CLASS: Stream Corridor
LOCATION: Oak Creek Elementary School
SEC. MAP NO.: 6 WL/DNA #: 6c DATE OF INVENTORY: 11-14-91

Table with Habitat Assessment Score: 76, Range for Stream Corridors: 18 - 93, and Resource Value Assessment \* for various categories like Stormwater Storage, Sediment Trapping, etc.

GENERAL DESCRIPTION This section of Ball Creek originates near Peter's Road and flows south to Melrose Street. The upper end is closely surrounded by residential development. Vegetative structure along the stream varies from a single row of trees to a well developed layered forest.

NATURAL RESOURCE VALUES The forested wetland adjacent to the school provides stormwater storage, sediment trapping, and nutrient retention functions. The shallow ponding within the forest provides breeding areas for tree frogs and, potentially, other amphibians.

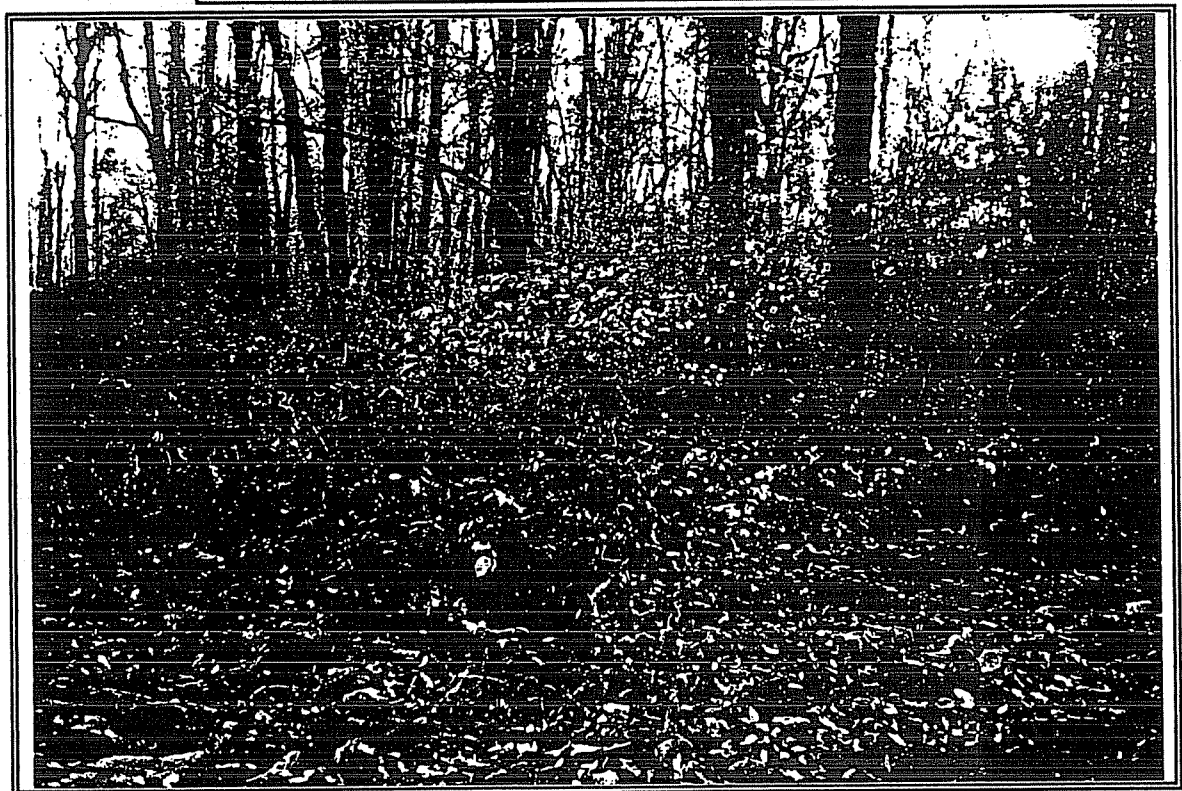
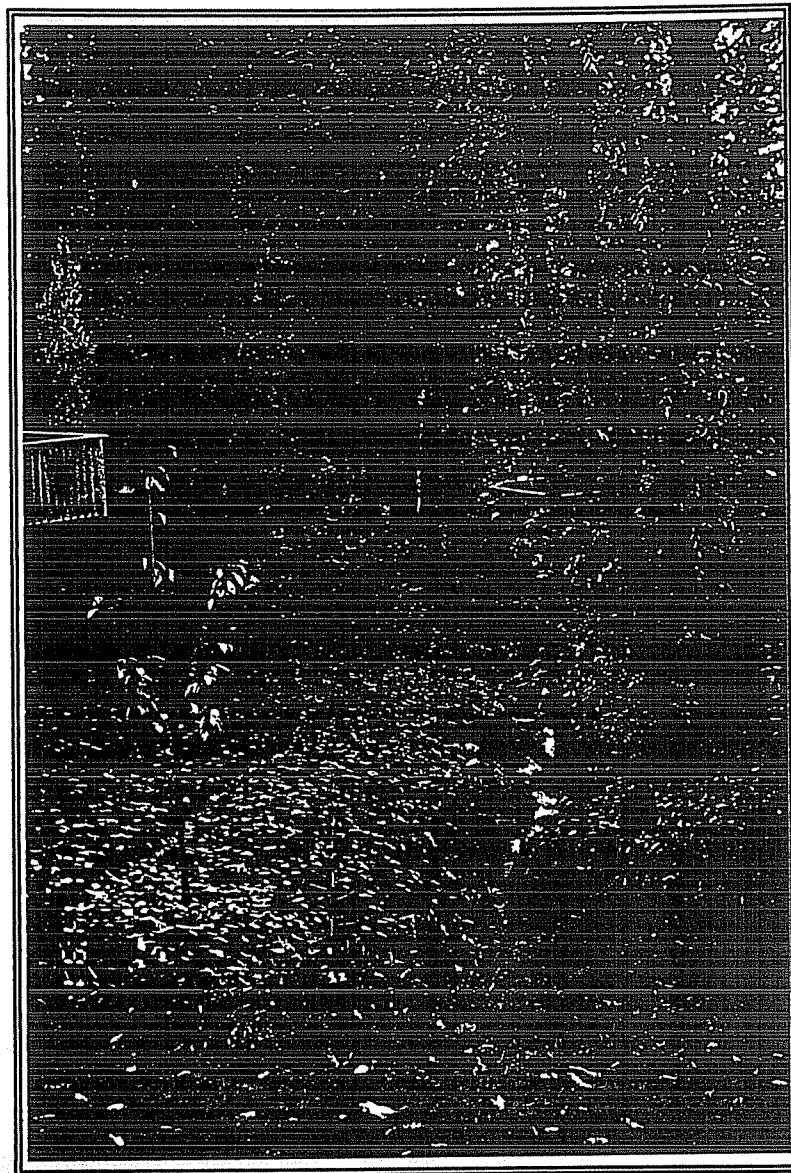
IMPACTS/DISTURBANCES Recent channelization of the stream and gabion installation has impacted wildlife habitat. This is a temporary impact.

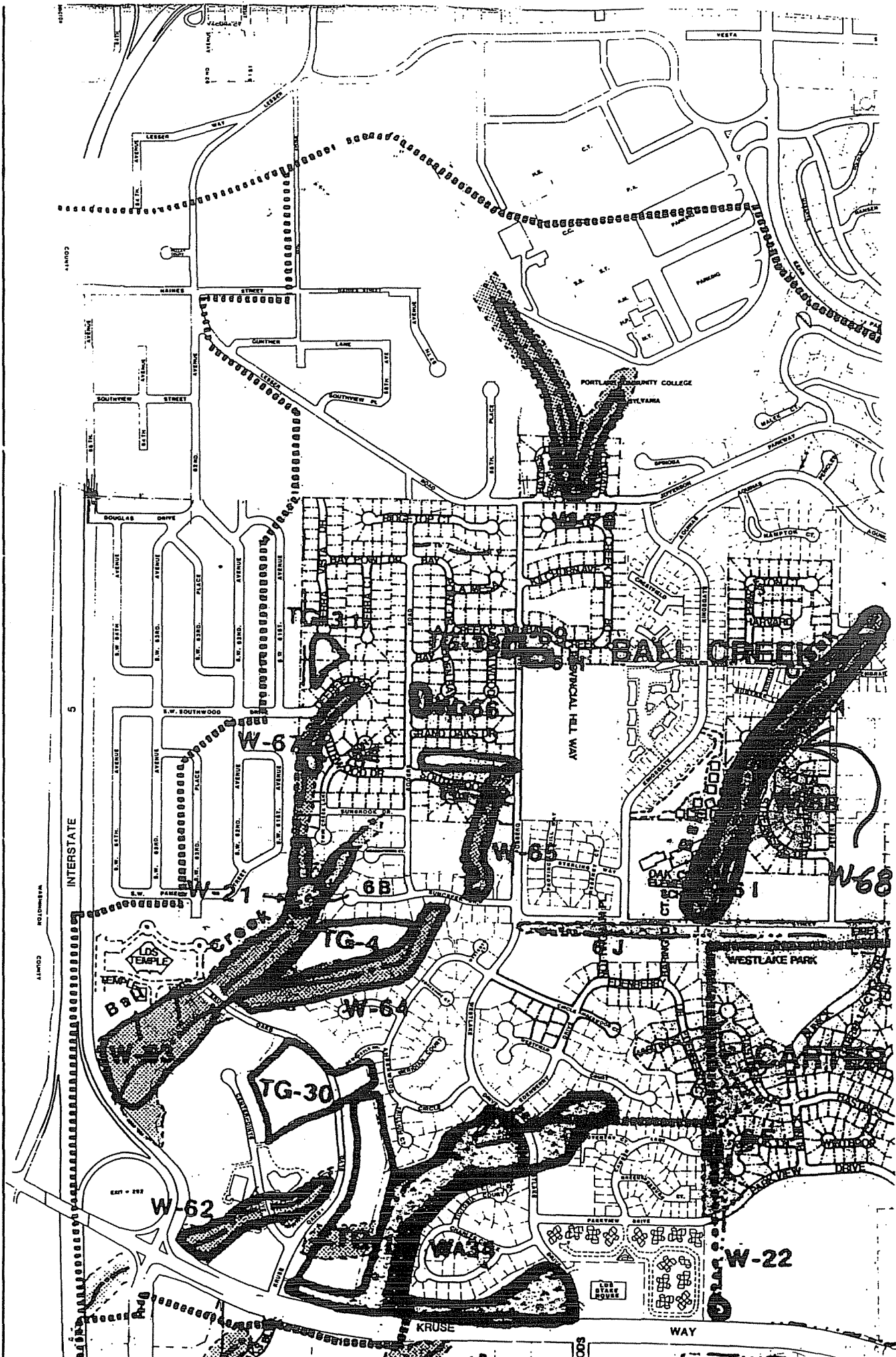
MANAGEMENT RECOMMENDATIONS Review management plan and monitor site for hydrologic changes that may impact the vegetation of the ash-oak woodland.

Handwritten notes: 21E 6AA: 4800, 4900; 21E 6AA SUPP: 429-32, 438, 414, 415; 21E 6AC: 600; 21E 6AD: 545

\* Based on best professional judgment and field assessment methods

SITE W68





COUNTY

5

INTERSTATE

PORTLAND  
COUNTY

EST. 1922

500

WAY

W-22

W-62

TG-30

WESTLAKE PARK

PROVINCIAL HILL WAY

DANIELS CREEK

DANIELS CREEK

PORTLAND COMMUNITY COLLEGE  
PORTLAND, OREGON

W-21

W-67

W-68

W-68

W-64

TG-4

W-65

W-66

W-67

W-68

W-69

W-63

W-64

W-65

W-66

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W-55

W-56

W-57

W-58

W-59

W-53

W-54

W-55

W-56

W-57

Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W69 SIZE: .25

HABITAT CLASS: Pond

LOCATION: Fosberg Road

SEC. MAP NO.: 6 WL/DNA #: 6h

DATE OF INVENTORY: 11-14-91

ZIEGAB 25B

Habitat Assessment Score: 10	Range for Ponds: 10 - 77		
<b>Resource Value Assessment *</b>			
Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>L-M</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>L-M</u>	Wildlife Habitat	<u>L</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>L</u>

**GENERAL DESCRIPTION** This pond is located southeast of Bay Creek Drive and Fosberg Road. It is a catch basin for stormwater runoff. Vegetation is extremely limited on the site.

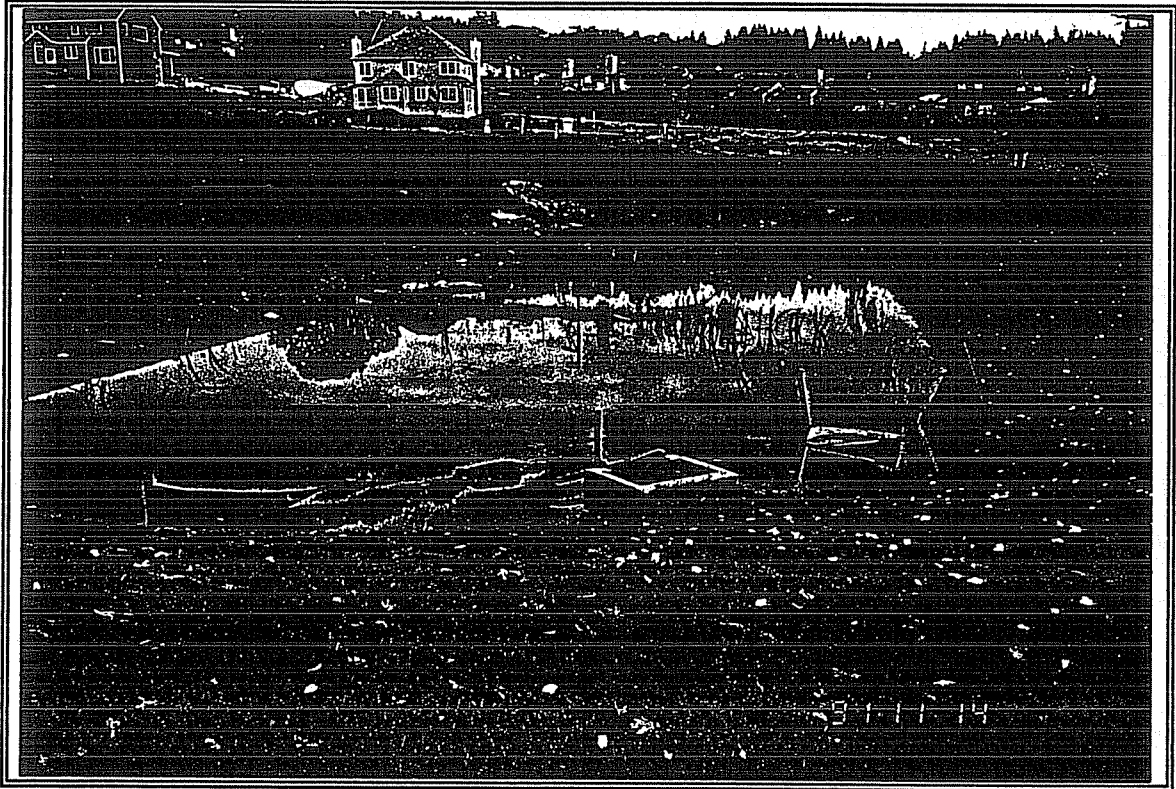
**NATURAL RESOURCE VALUES** This pond is of low value to wildlife and there is plenty of opportunity to improve wildlife habitat. Its most significant function is holding water. As wetland vegetation colonizes the site, sediment and nutrient removal will improve.

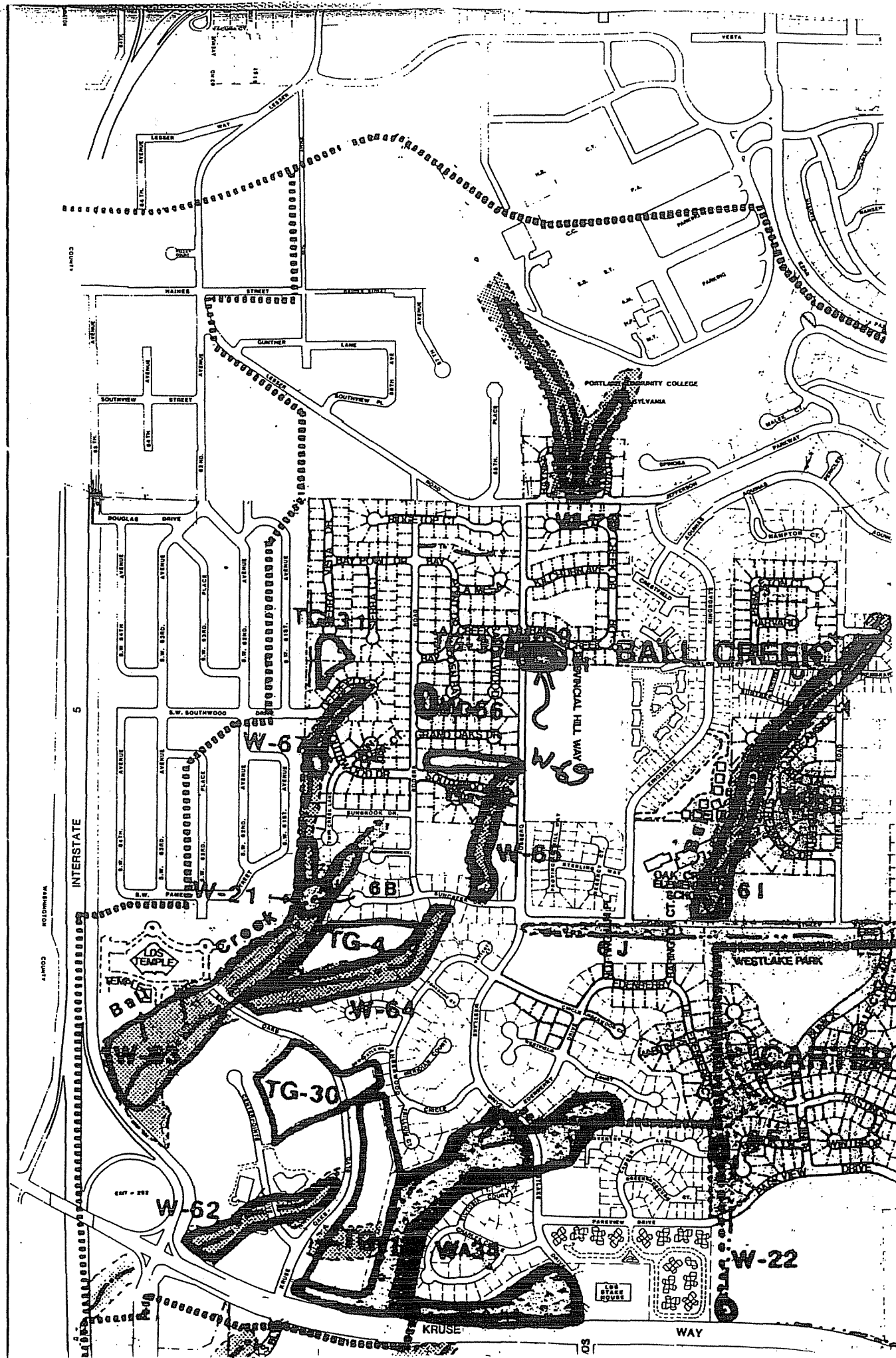
**IMPACTS/DISTURBANCES** This site was recently created and lacks vegetation.

**MANAGEMENT RECOMMENDATIONS** Plant diverse emergent vegetation in the ponded area. This vegetation will improve stormwater runoff by trapping sediments and absorbing nutrients. Native trees and shrubs that provide food and cover for wildlife should also be planted as a buffer surrounding the pond and on the fringers of land that enter the pond.

\* Based on best professional judgment and field assessment methods

SITE W69





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W70 SIZE: ≈ 1 acre HABITAT CLASS: Stream Corridor and Pond  
 LOCATION: Jefferson Parkway  
 SEC. MAP NO.: 31 WL/DNA #: 31f DATE OF INVENTORY: 11-14-91  
SE 1/4 SEC. 31 1S, 1E 2, 6Z MULTNOMAH CO

Habitat Assessment Score: 62	Range for Stream Corridors: 18 - 93		
	Range for Ponds: 10 - 77		
<b>Resource Value Assessment *</b>			
Stormwater Storage	<u>M</u>	Undisturbed Condition	<u>L-M</u>
Sediment Trapping	<u>M</u>	Vegetation Diversity	<u>M</u>
Nutrient Retention	<u>M</u>	Wildlife Habitat	<u>M</u>
Slope Stability	<u>H</u>	Connectivity	<u>M</u>
Education Potential	<u>L</u>	Recreation	<u>L</u>
Fish Habitat	<u>L</u>	Wildlife Travel Corridor	<u>M</u>

**GENERAL DESCRIPTION** Site W70 drains the southwest side of Mt. Sylvania. It's located north of Jefferson Parkway and includes two branches of a tributary of Ball Creek. The branches meet at a detention pond before becoming culverted underground. The perennial streams are of a moderate to steep gradient. The corridor canopy consists of Douglas fir, white oak, Oregon ash, and red alder. The shrub understory supports willow, ninebark, serviceberry, spirea, and snowberry. The herbaceous understory is dominated by Himalayan blackberry and also contains sword fern, English ivy, and a mixture of grasses. The wetlands surrounding the pond support soft rush, smartweed, slough sedge, dock, reed canary grass, and loosestrife.

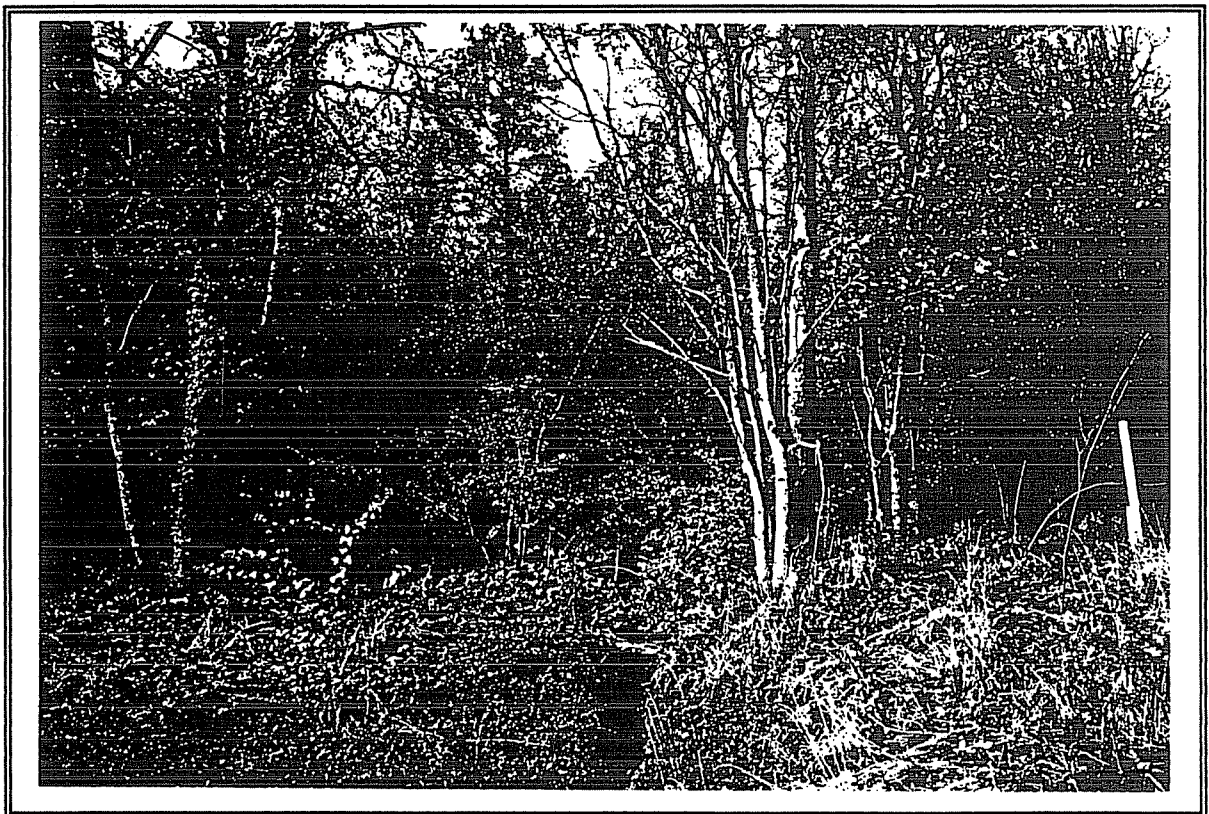
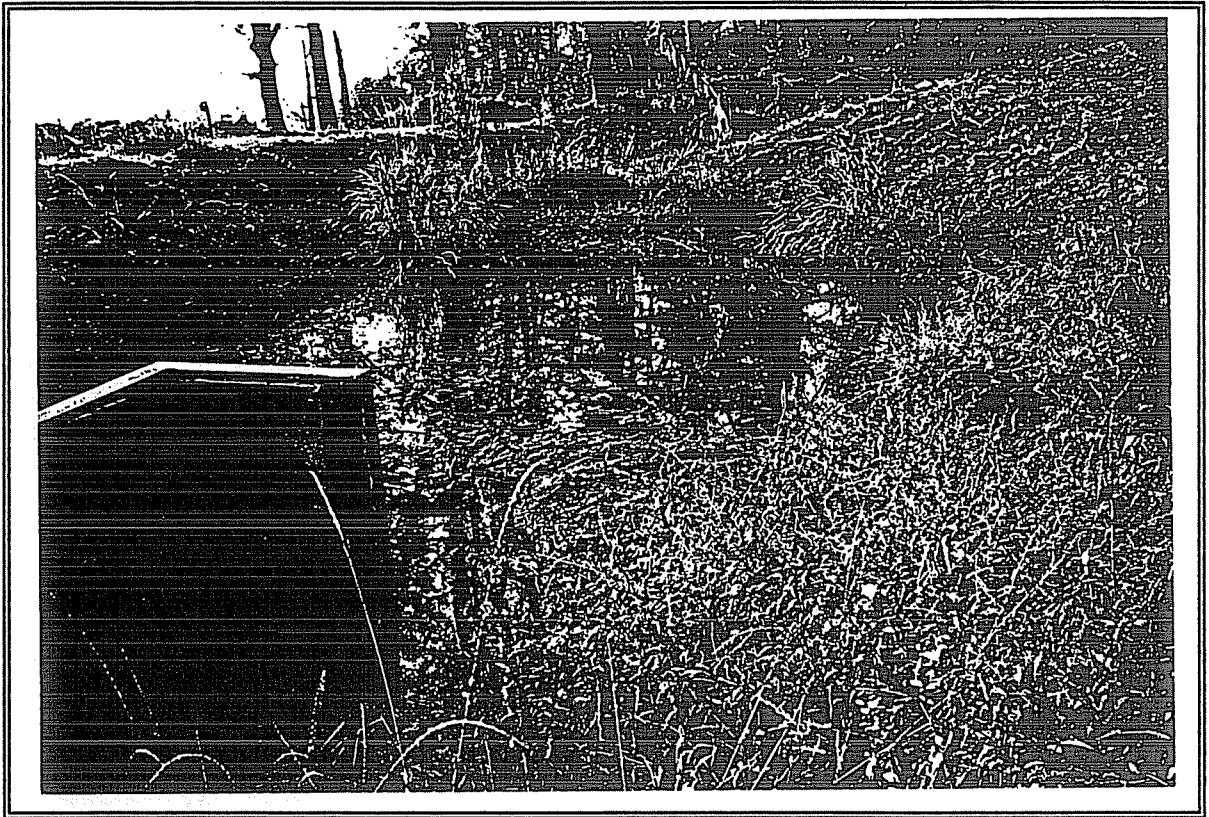
**NATURAL RESOURCE VALUES** The stream and slope support vegetative structural diversity, but species diversity is limited by abundant blackberry and English ivy. The dominance of these invasive species reduces the wildlife habitat value. The site is used as a travel corridor for wildlife on Mt. Sylvania. The stream and ponding supply water to wildlife species living in the adjacent upland woods. The pond at the base of the slope functions as a sediment trap and nutrient collector.

**IMPACTS/DISTURBANCES** English ivy and Himalayan blackberry cover native species, reducing food and cover for wildlife in the forest. Loosestrife causes similar problems in the emergent plant community.

**MANAGEMENT RECOMMENDATIONS** Remove loosestrife from the pond area to prevent its spread. Preserve the stream corridor with a minimum twenty-five foot buffer of trees and shrubs on either side of the stream channel.

\* Based on best professional judgment and field assessment methods

SITE W70





Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W71 SIZE: < 0.5 acre HABITAT CLASS: Emergent Wetland
LOCATION: North of Cirque and adjacent to Kerr Parkway
SEC. MAP NO.: 5 WL/DNA #: 5D DATE OF INVENTORY: 11/01/91
21E5AB 2800

Table with Habitat Assessment Score: 23, Range for Emergent Wetlands: 10 - 23, and Resource Value Assessment \* for various categories like Stormwater Storage, Sediment Trapping, etc.

GENERAL DESCRIPTION The emergent wetland is a flatbench adjacent to the stream channel that appears to be maintained by a high water table and not directly by the stream.

NATURAL RESOURCE VALUES

The small size and proximity of heavy traffic on two streets reduces the value of the area for wildlife use. Under unusually high flow conditions, some stormwater may be retained in the wetland that is backed up by the culvert under Cirque.

IMPACTS/DISTURBANCES

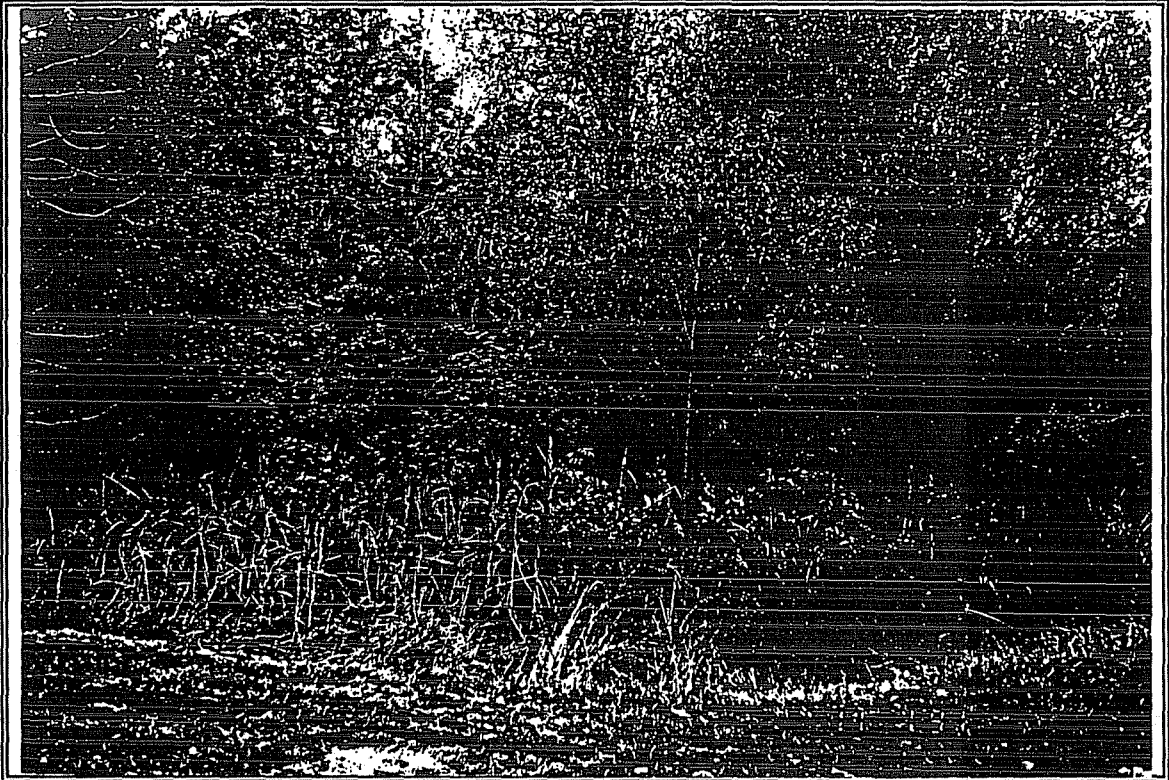
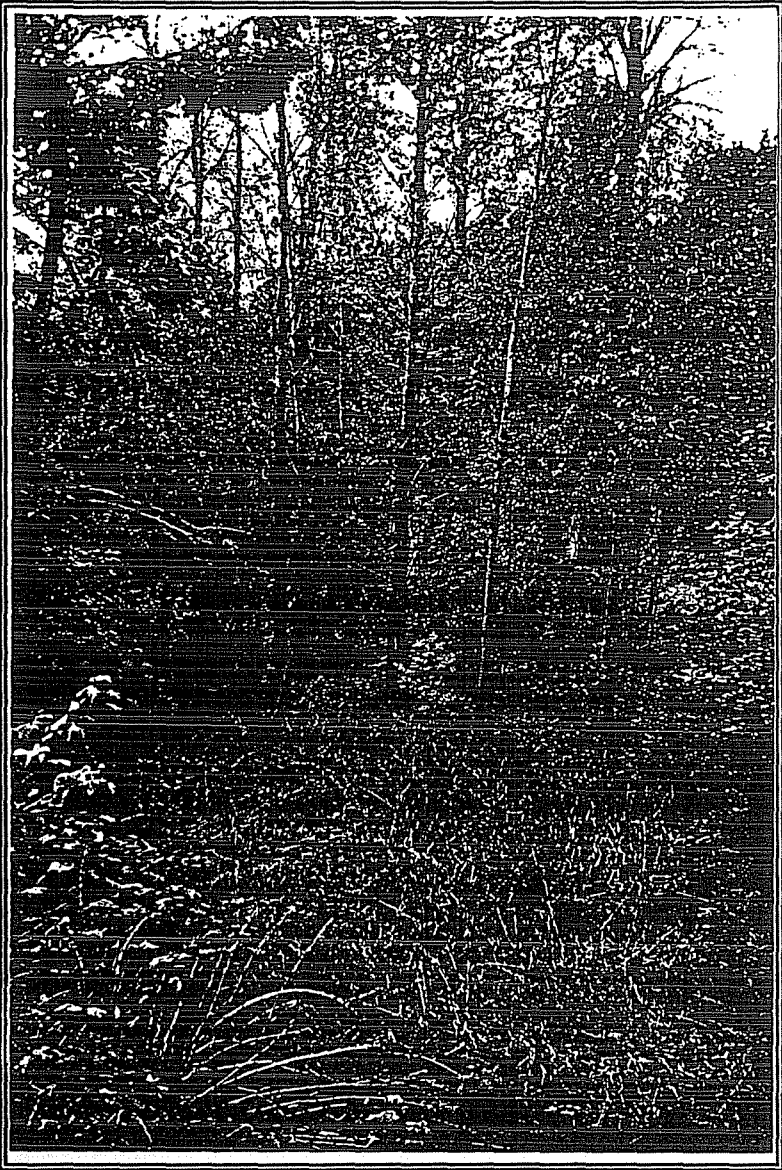
The wetlands may or may not be an artifact of construction of Kerr Parkway and Cirque Roads. Channelizing of Springbrook Creek and thinning of the riparian corridor have altered the natural conditions of this site.

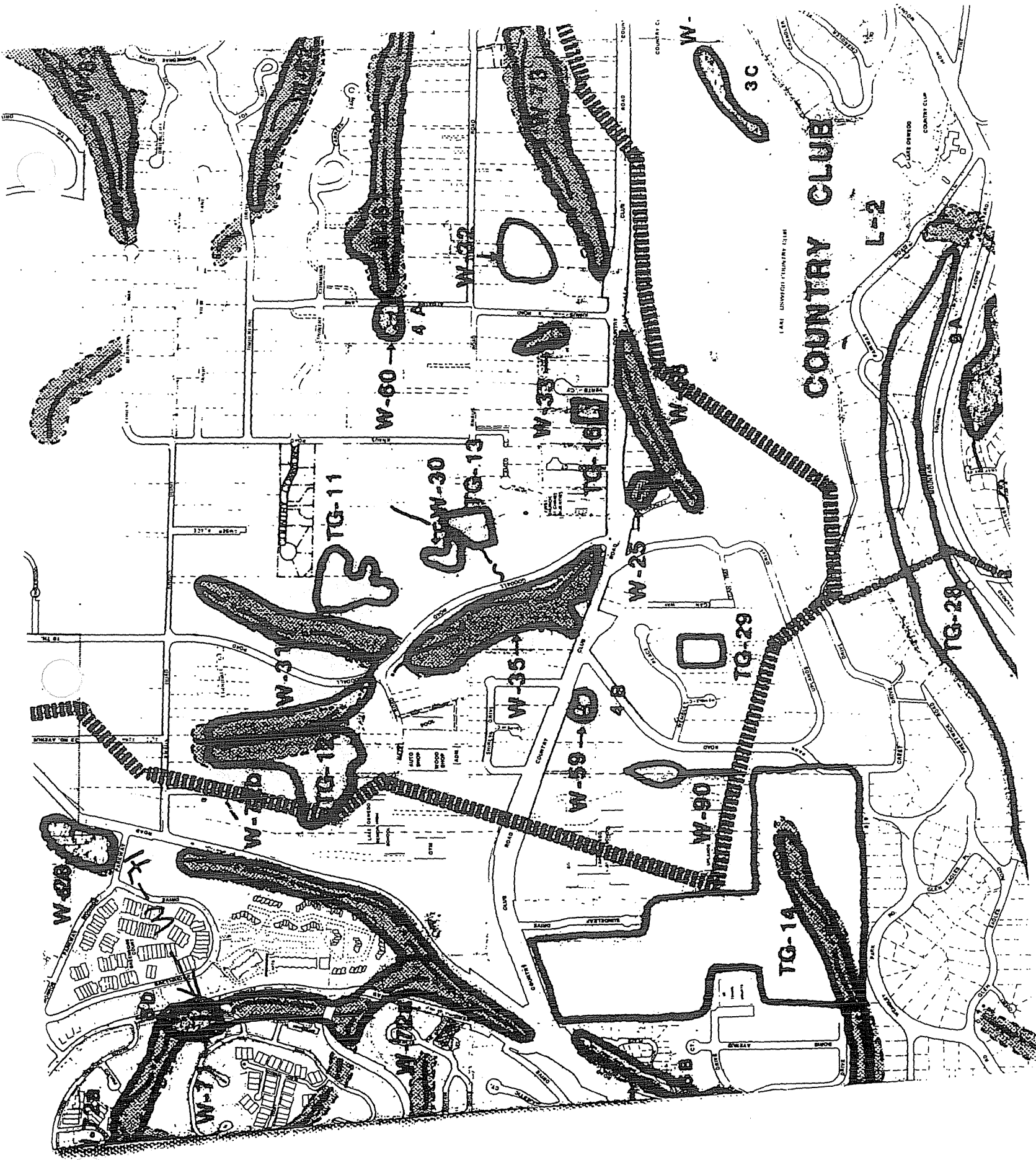
MANAGEMENT RECOMMENDATIONS

A dense, screening buffer of shrubs could enhance the area somewhat for birds, but the size and proximity of the site to traffic on adjacent roads reduces use of the area by small mammals.

\* Based on best professional judgment and field assessment methods

SITE W71





COUNTRY CLUB

L-2

LAKE UNIVERSITY COUNTRY CLUB

TG-11

W-30

TG-13

W-33

TG-16

W-25

TG-29

TG-28

W-31

W-35

W-59

W-90

TG-14

W-28

W-32

W-34

W-36

W-37

W-38

W-39

W-40

W-41

W-42

W-43

W-44

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W-89

W-90

W-91

W-92

W-93

W-94

W-95

W-96

W-97

W-98

W-99

W-100

3C

Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W74 SIZE: < 0.5 acres HABITAT CLASS: Pond  
LOCATION: On Stream Along North Boundary of Marylhurst Property  
SEC. MAP NO.: 14 WL/DNA #: 16 DATE OF INVENTORY: 11-01-91  
21E11C0 2800, 2900

Habitat Assessment Score: 24		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>L-M</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>M</u>	Fish Habitat	<u>L</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>L</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>L-M</u>

**GENERAL DESCRIPTION**

This artificial pond was created by construction of a dam, presumably by the adjacent property owner, in the stream channel along the north boundary of Marylhurst property. The drop from the pond to the continuing stream channel below is steep and about 25 ft. high. There is no emergent or riparian vegetation on the resident's side except for some slough sedge on the upstream end. The riparian corridor is nearly undisturbed on the Marylhurst side.

**NATURAL RESOURCE VALUES**

The pond is apparently used for recreation and landscaping by the resident and has little wildlife value.

**IMPACTS/DISTURBANCES**

The natural condition of the stream channel was altered to create the pond. Lawn is maintained to the edge of water on the resident's property.

**MANAGEMENT RECOMMENDATIONS**

The pond is on private property and subject to the desired uses of the owner.

\* Based on best professional judgment and field assessment methods

**SITE W74**





W-43

W-74  
(Circular)  
↓

W-75

MARYLHURST

WILLAMETTE

ROCK ISLAND RIVER

W-77

St

W-79

W-78

0 1/4  
22 72

CALVARY BAPTIST CHURCH  
CEDARDALE APTS.

Lake Oswego Natural Resource Inventory

SITE SUMMARY

SITE NO.: W84    SIZE: ≈ 0.5 acre    HABITAT CLASS: Pond  
LOCATION: South of South Shore Blvd., East of Kelok Road  
SEC. MAP NO.: 17    WL/DNA #: N/A    DATE OF INVENTORY: 11-20-91  
21E17A3 7100

Habitat Assessment Score: 38		Range for Ponds: 10 - 77	
Resource Value Assessment *			
Stormwater Storage	<u>L</u>	Undisturbed Condition	<u>L</u>
Sediment Trapping	<u>L</u>	Fish Habitat	<u>M</u>
Nutrient Retention	<u>L</u>	Wildlife Habitat	<u>L</u>
Education Potential	<u>L</u>	Size/Connectivity	<u>L</u>
Sensitive Species	<u>L</u>	Recreation	<u>M</u>

**GENERAL DESCRIPTION** The pond is located east of Kelok Rd. and is an extension of Lake Oswego, probably connected to the Lake by a culvert under South Shore Blvd. The surrounding residences control the vegetation along the edge to different degrees. In at least one place, lawn is maintained to the edge of the water; large trees including Douglas fir and alder are left along much of the south end. Willows make up the native shrub layer.

**NATURAL RESOURCE VALUES** The small size of the pond and proximity of homes and activity reduces the pond's wildlife habitat value. Passive recreation is a major feature of the pond for surrounding residents and possibly some boating in small craft.

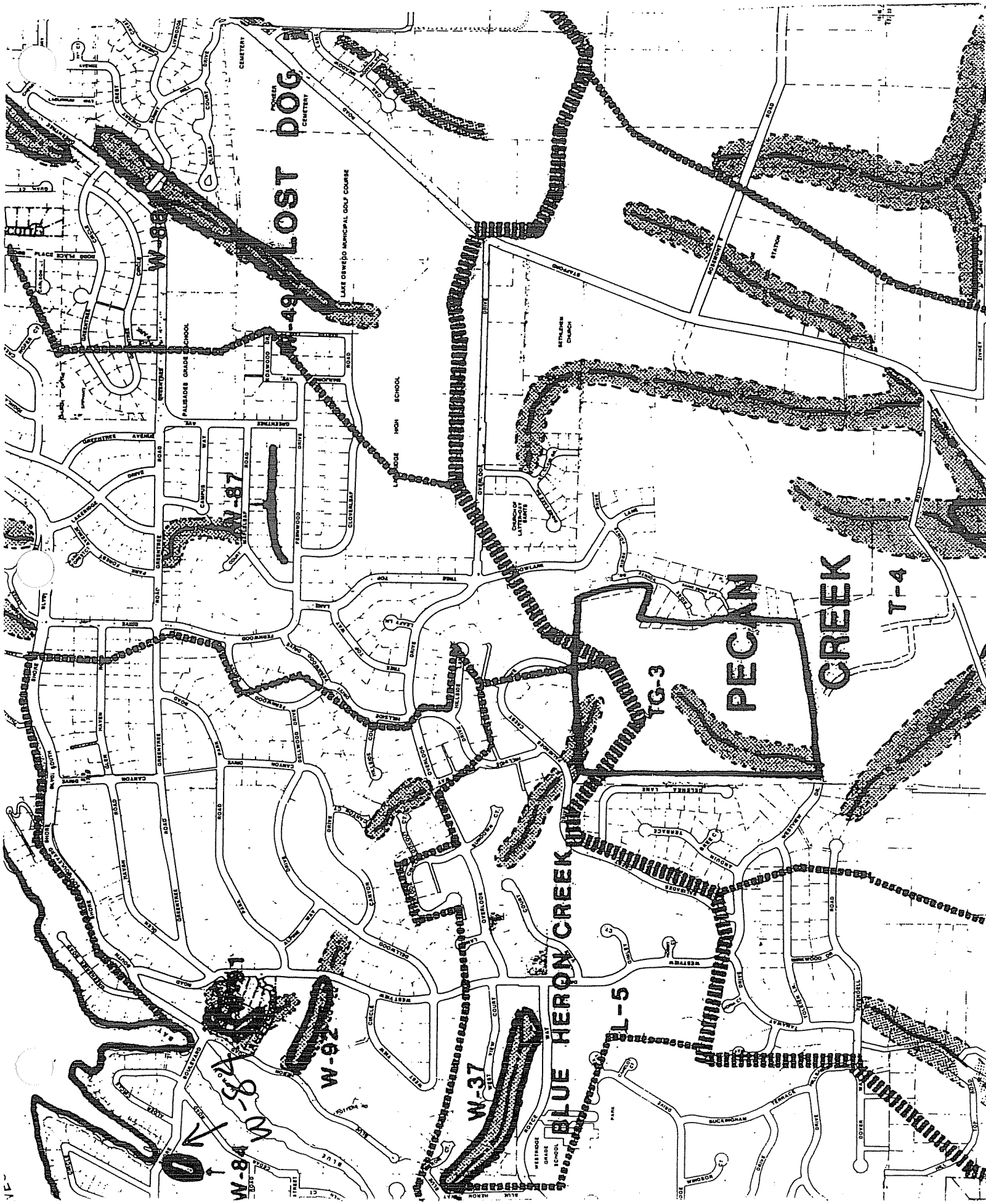
**IMPACTS/DISTURBANCES** The pond is a product of the artificial creation of Lake Oswego. Native vegetation is controlled or altered by lawn development.

**MANAGEMENT RECOMMENDATIONS** The site is private property and subject to the uses desired by surrounding landowners.

\* Based on best professional judgment and field assessment methods

**SITE W84**





LOST DOG CREEK

PECAN CREEK

BLUE HERON CREEK

W-84

W-87

W-88

W-92

W-37

L-5

T-3

T-4



WESTPORT SCHOOL

LAKE OSWEGO MUNICIPAL GOLF COURSE

LAKE OSWEGO HIGH SCHOOL

PALMBOISE GRADE SCHOOL

ATHLETIC CLUB

CHURCH OF LUTHERANS

HERBERT LAKE

WICKY

BRASSER

WALTON

WALTON

WALTON

WALTON

WALTON

WALTON

WALTON

WALTON

WALTON

WALTON

WALTON

*Lake Oswego Natural Resource Inventory*

**SITE SUMMARY**

**SITE NO.:** W93    **SIZE:** \_\_\_\_\_

**HABITAT CLASS:** Lake

**LOCATION:** Oswego Lake

**SEC. MAP NO.:** 8,9,10    **DNA #:** 54

**DATE OF INVENTORY:** 10-10-91

**GENERAL DESCRIPTION** Oswego Lake is the focus of the City of Lake Oswego. It is surrounded by boat docks, residential development, and rocky bluffs. Banks are artificial, and there are limited wetlands fringing the lake margin. Vegetation in the emergent wetlands fringing the lake is dominated by iris, touch-me-not and reed canarygrass. Small pockets of emergent wetlands generally occur at stream mouths. Vegetation in these pockets is more diverse than the lake margins and includes creeping buttercup, rushes and a variety of grasses. There are a few remaining natural areas surrounding the lake. These are forested areas on steep slopes. The forest is typically Douglas fir on the north-facing slopes with deep soils and oak/madrone on the south facing rocky bluffs. The Tualatin River is the main source of water for the lake and enters through the Oswego Canal constructed in the early 1900's.

**NATURAL RESOURCE VALUE** Oswego Lake is a heavily used recreation resource for boating, swimming, and fishing. It is also an important refuge for wintering waterfowl. Dabblers, diving ducks, and Canada geese are common. Other species include great blue heron. The surrounding forests provide potential nest sites for osprey. Fish species in the lake include bass, catfish, bluegill and other panfish, and an occasional trout.

**IMPACTS/DISTURBANCES** Residential development has cleared much of the natural vegetation surrounding the lake. Forests provide important perch sites for birds that pursue prey on the lake such as osprey, heron, great horned owl, and red-tailed hawk. Removing it reduces the possibility that these birds will inhabit the area. The water in Oswego is rich in nutrients derived from the source, the Tualatin River.

**MANAGEMENT RECOMMENDATIONS** Preserve forest vegetation for raptors. Provide grassy areas for grazing waterfowl. Provide cover and nesting areas for waterfowl. Methods to reduce the nutrient loads of the source water from the Tualatin River as well as potential non-point sources from residential runoff or drain fields could improve the water quality of the Lake greatly.

\* *Based on best professional judgment and field assessment methods*

SITE W93

