



DAMASCUS NATURAL FEATURES INVENTORY

NATURAL RESOURCES REPORT

Prepared for:

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Damascus Natural Features Inventory Natural Resources Report

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Introduction

The City of Damascus, through a Goal 5 Planning grant from the Oregon Department of Land Conservation and Development, retained a consultant team led by Winterbrook Planning to conduct an inventory of natural resources within the city limits. The inventory addresses the following natural resources: wetlands, riparian corridors, wildlife habitats, groundwater resources, and Oregon scenic waterways. This inventory addresses Statewide Planning Goal 5, which requires local governments in Oregon to protect natural resources and conserve scenic and historic areas and open spaces. The inventory is part of the City's efforts to address long-term growth management goals and to complete a Comprehensive Plan for the new City, which was incorporated in November, 2004.

This report is a companion to the Damascus Goal 7 Natural Hazards Inventory Report, submitted under separated cover. The report begins with a review of study area characteristics, public involvement and agency coordination efforts. Each resource is then addressed individually, beginning with a brief overview, a review of inventory methods, a summary of inventory results, and a review of significance determinations. Site-specific documentation on the location, quantity, and quality of individual sites is provided in the maps and appendices to this report. Report appendices also include a glossary of terms, list of references, and staff qualifications.

The inventory maps show the location and extent of significant wetlands, riparian corridors and wildlife habitat areas, as well as their impact areas. The maps also identify significant groundwater resources and scenic waterways, as identified by the State.

The Goal 5 inventory and associated maps provide the basis for subsequent steps in the Comprehensive Planning process. As part of that process, the consequences of alternative conservation and development strategies will be weighed, and after a public review process concluding with public hearings, the City's elected policy makers will decide what type of conservation program is appropriate for inventoried resources.

Summary of Findings

The following is a brief synopsis of key findings of the Damascus Natural Resource Inventory, including the recommendations from the Natural Features Topic Specific Team (a representative group of Damascus residents). Methods for collecting information for these reports included analyzing existing maps and other data from Clackamas County, Metro, Department of State Lands, Department of Environmental Quality, and other public agencies as well as onsite fieldwork where local property owners granted access. The inventory was completed to address State Land Use Goal 5 (Natural Resources).



Wetlands

Twenty-six wetlands were identified within the City, in addition to numerous “possible wetlands” of less than one-half acre in size. Wetlands were evaluated against the state’s wetland significance criteria as well as two additional criteria that the Natural Features TST recommended.

Significance Outcome

- 23 wetlands were determined to be significant. Total area of significant wetlands is 145.46 acres or 1.4 percent of total land within Damascus.

Riparian Corridors

Twenty riparian sites were identified along streams and rivers. These sites included reaches of Noyer, Richardson and Rock Creeks, which are tributaries to the Clackamas River, and Sunshine, Kelley and Badger Creeks, which are tributaries to Johnson Creek.

Significance Outcome

- All mapped streams are considered significant for the purpose of Goal 5, as recommended by the Natural Features TST. Total area of significant riparian corridors is 1,674.31 acres or 15 percent of land within Damascus.

Wildlife Habitat

Twenty-one habitat sites were identified within the City. The inventory followed an integrated approach which incorporated wetland, riparian and upland habitats. On the recommendation of the Natural Features TST, significance thresholds were established and habitats were ranked based on a three-tiered set of evaluation factors.

Significance Outcome

- Significant wildlife habitat includes significant wetlands and riparian corridors, and mapped upland habitats meeting minimum thresholds for size and other factors. Total area of significant wildlife habitat is 3,337.82 acres or 32 percent of land within Damascus. Approximately 19 percent of land within Damascus is considered high quality habitat.

Groundwater Resources

Groundwater resources were mapped based primarily on information and data from state agencies.



Significance Outcome

- Much of Damascus is included in one of the three categories of groundwater that qualifies as significant under Goal 5. This category is the “limited groundwater area” designated by the Oregon Water Resources Commission. The total area of significant groundwater resources (i.e., limited groundwater areas) in Damascus is 8,805 acres or 85 percent of the City.

Scenic Waterways

There is one designated Oregon Scenic Waterway (OSW) within the City. This OSW is the Clackamas River, upstream of the Carver Bridge.

Significance Outcome

- The Clackamas River OSW and its “related adjacent land” (land within one-quarter mile) is considered significant under Goal 5. The total area of significant Oregon Scenic Waterway in Damascus is 235 acres or 2 percent of the City.

Study Area Overview

The City of Damascus is located in northern Clackamas County, south of Gresham and the Pleasant Valley area, and east of Happy Valley. The City includes the community of Carver to the southwest and borders the Clackamas River to the south in this area. Highway 212 traverses the City from east to west, and defines the city limits in certain locations (see Figure 1).

The study area for the Natural Features Inventory is generally defined as the City Limits, with a total size of 10,333 acres¹. The city/study area extends outside the Urban Growth Boundary to the southeast, near the junction of Highway 224 and 232nd Avenue.

Climate

Weather patterns generally move west to east across the region, originating in the Pacific Ocean and crossing the Coast Range and the Willamette River valley before reaching Damascus. The region’s climate is greatly tempered by the winds from the Pacific Ocean. The closest National Weather Service to the study area is the Troutdale Station, where annual average precipitation is approximately 42.94 inches, more than 87 percent of which falls between October and May.² From November through January, monthly precipitation averages approximately six inches.²

¹ This area was calculated using GIS based on the original City boundary provided in September 2006. Some refinements to the boundary have occurred since then, and the area of the City likely has changed.

² Accessed at <http://www.weather.gov/climate/index.php?wfo=pqr>



Locally, temperatures, winds and rainfall vary with elevation, slope aspect, and degree of vegetative cover. The Happy Valley/Scouter’s Mountain buttes create a mild rain shadow effect, with slightly lower rainfall east of the ridge on the leeward slopes and lowlands in Damascus.

Precipitation during the course of the field inventory was generally consistent with the average for the area; however, November 2006 rainfall of more than 12 inches was nearly double the average for the month. Table 1 shows a comparison of rainfall averages with actual levels for the six month period beginning in October 2006.

Table 1. Rainfall averages and actual levels for the 2006-2007 Water Year.

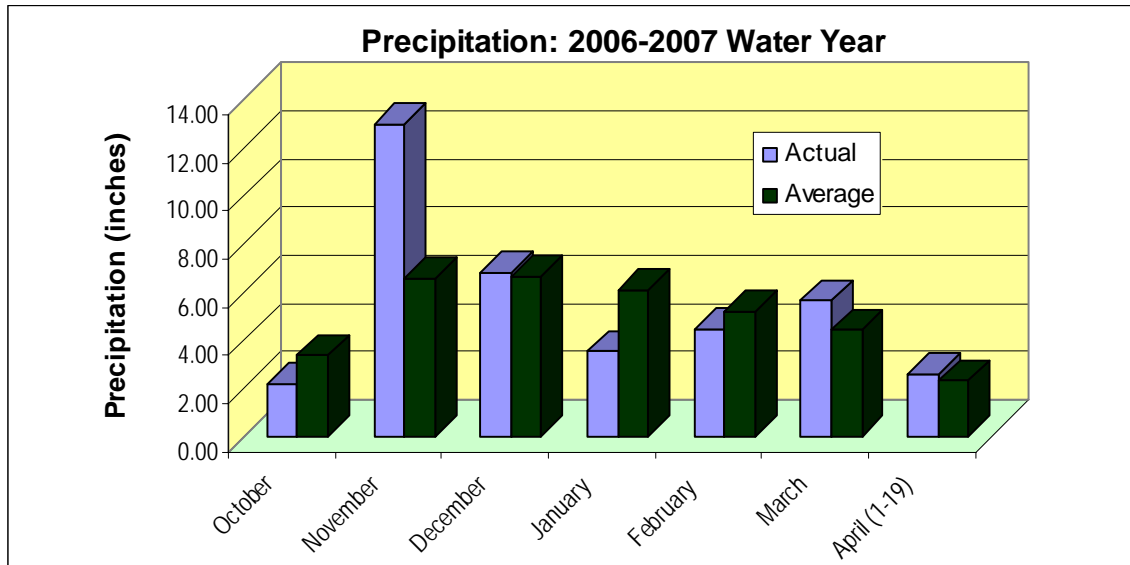
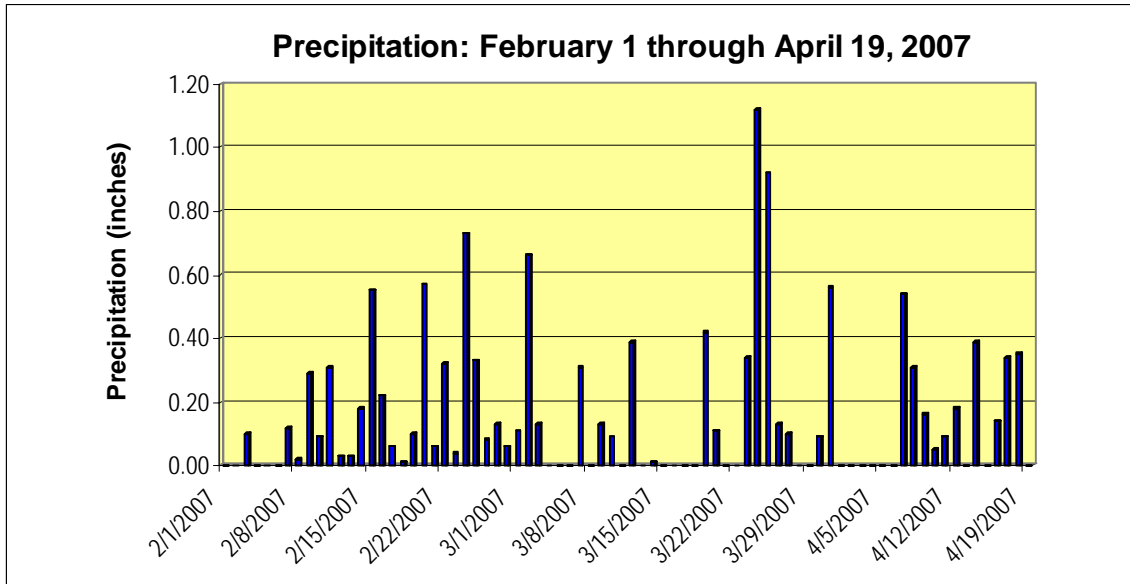


Table 2 shows daily rainfall measurements beginning approximately two weeks before the field work began (February 22) and continuing through the first three weeks of April. Actual and average rainfall for the two weeks prior to each on-site wetland sample site is recorded on the wetland data sheets contained in Appendix F of this report.

Table 2. Daily Rainfall, February through April, 2007.



Topography

The study area is comprised of three basic landforms: the steeper East Buttes/ Boring Lava Domes complex and their immediate slopes (including the upper Rock and Kelley Creek drainages), the inter-butte valleys with low to moderate gradient drainages (Damascus Town Centre, upper Noyer and Sunshine Creek areas), and the Clackamas River valley characterized by steep valley margins and stream canyons (e.g., Richardson and Noyer Creeks).

Ground elevations within the study area range between 80 feet (NGVD) along the Clackamas River at Carver, to 530 feet in the town center area, to 1,129 feet at the top of North Butler Butte in the northwest part of the City.

Hydrology

The City is split between two major drainage basins: the Clackamas River and Johnson Creek. Approximately three quarters (7,765 acres) of the City is located in the Clackamas basin, with one quarter (2,568 acres) located in the Johnson Creek basin.

Within the larger Clackamas River basin are four sub-basins: Deep Creek, Noyer Creek, Richardson Creek and Rock Creek. Within the Johnson Creek basin are three sub-basins: Badger Creek, Kelley Creek and Sunshine Creek. These basins are shown on the Wetlands and Water Resource Inventory map. Table 3 shows that area of each of these sub-basins within the City limits.



Table 3. Damascus Sub-basins and Acreages

Subwatersheds	Basin Area (acres)
Badger Creek	121
Clackamas River	595
Deep Creek	292
Kelley Creek	425
Noyer Creek	1,326
Richardson Creek	2,048
Rock Creek	3,504
Sunshine Creek	2,022
TOTAL	10,333

The existing drainage system has been modified in areas, primarily by agricultural activities, but remains a largely natural hydrologic system. The drainage system includes many areas of ditches and culverts, but natural or mostly natural streams and drainages predominate. Floodplains cover a relatively small area (140 acres) of the City along the Clackamas River lowlands. Areas of seasonally perched water tables are common throughout the City, however, and in certain areas such as Sunshine Creek, winter rains often trigger local flooding. Efforts to improve drainage caused by this shallow, perched water table have included the installation of drain tile and the excavation of ponds, ditches and swales.

Geology

Geologic events leading to the formation of the Damascus area began more than 17 million years ago during the Miocene period. Volcanic fissures far to the east began discharging hundreds of cubic miles of molten lava that flowed through an ancient Columbia River Gorge, flooding the Willamette River valley. The solidified lava, Columbia River Basalt, covered the Scappoose Formation, a siltstone and shale deposit formed 22 million years ago when the region was submerged under marine waters.

The Columbia River Basalt is locally overlain by sandstone and shale deposits known as the Troutdale Formation. This formation has two distinct compositions: the lower facies consists of gravels containing quartzite, schists and granites which tie it to the ancestral Columbia River; the upper facies is primarily sandstone of basaltic origin, presumably eroded from the Cascades.

The Damascus buttes are volcanic in origin, formed several hundred thousand years ago when a group of shield and cinder cone volcanoes erupted across the lower Willamette Valley. These now-dormant volcanoes are comprised mainly of high-alumina basalts, but locally contain ash, cinders and other materials. The basalts are similar to those of Mount Hood and other Cascade Mountains and the buttes are therefore believed to be tied to the uplift of the Cascade Range.



Later, silts were eroded from the Columbia River floodplain, carried down the gorge, and wind-deposited on the Damascus buttes and valleys. The massive Bretz Floods (a.k.a. Missoula Floods) between 12,000 to 19,000 years ago eroded this silt away from areas below approximately 300 feet, replacing it with lacustrine deposits of silt and sand as the flood waters receded.

Soils

Soils in the Damascus study area belong to two primary soil groups: Cascade-Powell and Bornstedt-Cottrell. Cascade silt loam is the dominant soil covering nearly half of the City and generally located north of Sunnyside Road and Highway 212. This soil is somewhat poorly drained soil formed in silty material and underlain by a cemented (hardpan) layer. Bornstedt silt loam covers some 2,300 acres of the City. It is located in the southern part of the City and generally south of the Cascade silt loam soils.

Table 4 provides a summary of key features of the soils within Damascus. These features include slope, drainage class, hydric soils, and erosion potential. The total area of the soil type within the study area is also provided. Figure 2 provides a map of the soil types within the study area. The source of the information is the Natural Resources Conservation Service (formerly Soil Conservation Service). Acreages in the table below were calculated using GIS.

Table 4. Damascus Soil Characteristics

Soil series	Map unit	Slope	Drainage class	Hydric	Erosion Potential	Acres
Aloha silt loam	1A	0-3%	somewhat poorly drained	no	slight	3.15
Amity silt loam	3	0-3%	somewhat poorly drained	no	slight	17.94
Borges silty clay loam	7B	0-8%	poorly drained	yes	slight	46.35
Bornstedt silt loam	8B, C, D	0-8, 8-15, 15-30%	moderately well drained	no	slight to severe	2,328.93
Cascade silt loam	13B, C, D, E	3-8, 8-15, 15-30, 30-60%	somewhat poorly drained	no	slight to severe	4,783.40
Cascade silt loam, Stony substratum	14C, D, E	3-15, 15-30, 30-60%	somewhat poorly drained	no	slight to severe	496.18
Coloquato silt loam	19	0-3%	well drained	no	moderate	47.87
Cornelius silt loam	23B	3-8%	moderately well drained	no	slight	11.54
Delena silt loam	30C	3-12%	poorly drained	yes	slight	540.37
Hardscrabble silt loam	36B, C	2-7, 7-20%	somewhat poorly drained	no	slight to moderate	24.10
Huberly silt loam	41	0-3%	poorly drained	yes	slight	33.16
Jory silty clay loam	45	8-15%	well drained	no	slight	3.72
Klickitat stony loam	51E	30-60%	well drained	no	severe	23.68
Newberg loam	68	0-3%	somewhat excessively drained	no	slight	42.53
Pits	69	-	-	-	-	21.80
Powell silt loam	70B, C, D	0-8, 8-15, 15-30%	somewhat poorly drained	no	slight to severe	986.29
Quatama loam	71B, C	3-8, 8-15%	moderately well drained	no	slight to	25.01



Soil series	Map unit	Slope	Drainage class	Hydric	Erosion Potential	Acres
					moderate	
Riverwash	73	0-3%	-	yes	N/A	19.55
Salem silt loam	76B, C	0-7, 7-12%	well drained	no	slight to moderate	29.10
Salem gravelly silt loam	77B	0-7%	well drained	no	slight	2.26
Saum silt loam	78B, C, D, E	3-8, 8-15, 15-30, 30-60%	well drained	no	slight to severe	318.85
Wapato silt loam	83	0-3%	poorly drained	yes	slight	8.34
Wapato silty clay loam	84	0-3%	poorly drained	yes	slight	33.42
Woodburn silt loam	91B, C	3-8, 8-15%	moderately well drained	no	slight to moderate	124.72
Xerochrepts and Haploxerolls	92F	20-60%	well drained	no	severe	317.95

Public Involvement and Agency Coordination

Public Involvement

Public involvement and outreach for the Damascus Natural Feature Inventory project began in the fall, 2006 and continued through June, 2007. Articles about the project were published in *The Observer* beginning in late 2006. As part of the City's visioning process, a series of "What Makes Sense" meetings were held in November. At these meetings, participants were introduced to the Natural Features project.

In November, 2006, a landowner notice was prepared with input from the City Council and DSL. In December, the letter was sent to approximately 1,500 potentially affected landowners, and related information was published in *The Observer* and on City website. The letter included an invitation to a series of Open Houses in January 2007 and described ways that property owners and other interested parties could become involved in the project. The letter also included a right-of-entry request for landowners whose property might potentially contain natural resources or natural hazards. The City prepared a spreadsheet identifying the access status of all potential Goal 5 and Goal 7 properties, with contact information where provided. Landowner contacts and property visits occurred between February and May, 2007. Field visits consisted primarily of visual observations of natural resource conditions. Where potential wetlands were observed, small soil sample holes were hand dug to assess wetland characteristics; these holes were then backfilled before leaving the site.

Two city-wide Open Houses were held in January, 2007 with members of the City Council, DSL and DLCDC present. The Open Houses provided information about the process, status and preliminary findings for Goal 5 resources and Goal 7 hazards based on available information. Draft inventory maps showing the best available data were reviewed with the public, and written



and oral public comments were noted. The draft maps were also posted on the City's website and at City Hall. Follow-up articles on the public meetings were published in *The Observer*.

A Natural Features Topic Specific Team (Natural Features TST) was established to review the inventory work and make recommendations on the guidelines and criteria for determining resource significance. The Natural Features TST is an advisory committee to the City Council. The committee was composed of a representative group of six citizens from the Damascus community, chaired by Larry Thompson. The City attracted members to serve on the TST through the City's website, notice in *The Observer*, announcements at the January open houses, and invitations to participants in previous city planning meetings such as the coffee klatches and summer socials. Committee meetings were held between March and June, 2007. Meetings were open to the public and included opportunities for public comment. Meeting agendas and summaries were posted on the City website.

Three city-wide Open Houses were held in May, 2007 with members of the Natural Features TST, City Council, DSL and DLCDC present. Notice for the meetings went to the approximately 1,500 landowners contacted originally, and was posted in *The Observer*, on the City's website, and at City Hall. The Open Houses provided information about the inventory process, input from the public and the Natural Features TST to date, and the draft findings from the field work. Draft inventory maps showing Goal 5 resources and Goal 7 hazards were presented at the meetings. These maps were also posted on the City's website and at City Hall, with related articles appearing in *The Observer*. Public comments were reviewed and follow-up site visits were performed in late May 2007.

Updated and revised maps were then prepared reflecting the input received from the public and the recommendations from the Natural Features TST, which held its last meeting on June 6, 2007. These maps were then revised based on the TST comments and delivered to the City together with the Goal 5 and Goal 7 inventory reports. A City Council work session was held on July 17, 2007 to review the inventory and maps, and to receive the recommendations from the Natural Features TST.

Additional public meetings and open houses are planned for subsequent steps in the Goal 5 and 7 planning process, as part of the Comprehensive Plan public involvement plan.

Agency Coordination

The consultant team coordinated with public agencies throughout the inventory process. Representatives from several agencies also attended the public open houses in January and May. Agencies contacted included the following:

- Clackamas County;
- Metro (Parks, Greenspaces, Data Resources);
- Oregon Department of Environmental Quality (DEQ);



- Oregon Department of Fish and Wildlife (ODFW);
- Oregon Department of Forestry (DOF);
- Oregon Department of Land Conservation and Development (DLCD);
- Oregon Department of Geology and Mineral Industries (DOGAMI);
- Oregon Department of Parks and Recreation (ODPR);
- Oregon Department of State Lands (DSL);
- Oregon Water Resources Department (WRD); and
- Oregon Natural Heritage Information Center (ORNHIC).



Wetlands

The Damascus Local Wetland Inventory (LWI) provides maps and information about wetlands throughout the City and will serve as a planning tool for balancing the protection of wetland functions with other community needs as part of the forthcoming comprehensive planning process.

The LWI was conducted in three phases to support a broad citizen involvement process and to allow the fieldwork to occur during the preferred spring season. The first phase of the inventory was the planning phase in which existing wetland maps and information was collected, public meetings were held to review this information, and base maps were then prepared for the field inventory. This phase occurred between October, 2006 and January, 2007. Phase two of the process included the on-site field inventory, functional assessments, and collaboration with the Natural Features citizen committee (TST) to determine wetland significance. This phase occurred between February and May, 2007. The third phase, between May and June, involved another series of public meetings to review preliminary findings, follow-up field visits to respond to public comments, and preparation of a revised LWI draft for submittal to the Department of State Lands (DSL). A detailed review of the public involvement process for this project is provided in the *Public Involvement and Agency Coordination* section of this report.



A Damascus wetland containing Oregon ash and a diverse native plant community.

Once approved by the DSL, the LWI replaces the National Wetlands Inventory (NWI) and is incorporated into the Statewide Wetlands Inventory. A LWI fulfills the location and quantity information required for Goal 5 inventories, but does not provide quality information. A wetland quality assessment was conducted concurrently with the LWI using the Oregon Freshwater Wetland Assessment Methodology (OFWAM) method developed by DSL. Data collected for the LWI will assist local landowners and the City in making decisions about the future growth of the Damascus community.

Inventory Methods

The inventory of wetlands followed the guidelines and rules for conducting LWIs adopted by DSL in 1990, and updated in 2001. Key elements of the inventory methodology are summarized in this section.



Two levels of investigation were conducted for the inventory of wetlands: a review of existing information and a field inventory.

Review of Existing Information

A review of existing literature, maps, and other materials was conducted to identify wetlands or site characteristics indicative of wetlands within the Damascus planning area. The review of existing information is summarized in a January 18, 2007 memorandum, "Review of Best Available Data."³ This information was updated as new data was received from public agencies and other sources. Data received since the preliminary review of available data includes:

- City plat map correction – western part of City (Clackamas County GIS);
- Fish presence and fish barriers data (Oregon Department of Fish and Wildlife);
- Groundwater Restricted Areas (Oregon Water Resources Department); and
- Local knowledge of area (obtained from residents and local resource experts during course of public involvement process).

Other base sources of information included:

- Clackamas County Soil Survey (NRCS), and lists of hydric soils and soils with hydric inclusions;
- National Wetland Inventory (NWI) maps;
- FEMA Floodplain maps;
- DSL wetland determination and permit files;
- Color aerial photography (RLIS 2006); and
- Oregon Natural Heritage Information Center data.

The existing information was used as the basis for preparing GIS base maps, which included the locations of potential wetland sites.

Field Inventory

The inventory methods followed the Oregon Division of State Lands' (DSL) LWI procedures as outlined in OAR 141-86-180 through 240, as amended July 1, 2001.

Where property access was permitted, wetland determinations were made using the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987). The manual requires independent evidence of three parameters for an area to be declared as wetland: hydric soils, hydrophytic vegetation, and wetland hydrology. Location of sample points and mapping conventions followed state LWI standards and were not intended to define the limits of regulatory jurisdiction. Under state guidelines, mapped LWI wetland boundaries are considered

³ This memorandum is included here by reference and available from the City.



accurate to within 25 feet. A wetland boundary delineation may be needed to determine whether state or federal regulations apply to a particular development proposal.

Each inventoried wetland was assigned a unique code based on the subwatershed in which it was located. For example, the subwatershed containing the lower Rock Creek tributary was coded “RO-A.” Wetlands within this subwatershed were then numbered accordingly (e.g., “RO-A-01,” “RO-A-02,” etc.).

For wetlands where access was granted, the consultant team typically established between two and six sample plots at locations that best characterized the wetland. Consultants recorded information regarding each of the three wetland parameters (i.e., soils, vegetation, and hydrology) to distinguish wetlands from non-wetlands. The LWI map shows the location of wetlands and the individual sample plots. General characteristics of each wetland were documented, including approximate wetland size, classification⁴, soil type, hydrologic source, dominant plant species, field dates, field investigators, a summary of the wetland context, and other relevant data. Wetland characteristics were recorded on individual summary sheets contained in Appendix C. Appendix F contains completed Wetland Determination Forms for wetlands sampled using the on-site method.⁵

Wetlands with DSL-approved determinations were field-verified where accessible to determine whether wetlands were still present and of the same size and configuration as when delineated. Wetland boundaries were verified through visual on-site observation of vegetation and hydrology. In cases where boundaries could not be reliably verified through visual observation, sample plots were established. Where revisions to recorded boundaries were warranted, the wetland mapping was adjusted to reflect the approximate current boundary and corresponding notations were made in the wetland summary sheets.

In cases where property access was denied, off-site determination methods were employed using existing information and maps, and off-site observation from nearby public rights-of-way or properties where access was granted. Areas exhibiting wetland indicators such as wetland hydrology or dominant hydrophytic vegetation were noted. Off-site determinations were based on off-site viewing, interpretation based on photo signatures of adjacent wetlands, review of topography and soils data, and other available information.

Wetland Function and Condition Assessment

Wetland quality was assessed using the Oregon Freshwater Wetland Assessment Methodology (OFWAM). The OFWAM evaluates the extent to which a wetland performs certain functions based on specific characteristics. It assesses characteristics including wildlife habitat, fish habitat, water quality, hydrologic control, education, recreation, sensitivity to impact, enhancement potential, and aesthetic quality. On the suggestion of DSL staff, only the first four

⁴ This includes both Cowardin and hydrogeomorphic (HGM) classifications as described in Appendix A, Definitions.

⁵ Data from certain off-site determinations is also included in this appendix.



characteristics (wildlife habitat, fish habitat, water quality and hydrologic control) were assessed for this project, as these characteristics have a direct bearing on the wetlands significance criteria. In addition, where a wetland was located on public lands, education functions were also assessed to determine whether the wetland was significant as an educational resource.

An OFWAM field form was used to characterize wetlands and address specific functions that required field observation. Data collected in the field included the presence and extent of Cowardin classes, vegetative cover, wetland hydrology (source, storage, and discharge), character of adjacent water bodies, and other field data essential to the OFWAM assessment. The field evaluations were generally conducted from viewing areas near wetland sample plots, or from neighboring public rights-of-way where property access was not granted.

The OFWAM assessments were completed in the office using field data, aerial photographs, maps, and information gathered from public agencies (e.g., water quality, sensitive species, and related resource data). Several public agencies were contacted, including:

- Oregon Department of Environmental Quality (DEQ);
- Oregon Department of Fish and Wildlife (ODFW);
- Oregon Department of Forestry (DOF);
- Oregon Natural Heritage Information Center (ORNHIC); and
- U.S. Fish and Wildlife Service (USFWS).

The assessment result is a determination of whether a function is high (intact or diverse), moderate (impacted/degraded), or low (lost or not present). Factors such as size of wetland, biological diversity, presence of rare or sensitive species, and adjacent land uses are used in the rating system. These ratings are used in the evaluation of wetland significance; for example, any wetland with a “diverse” wildlife habitat function, or an “intact” fish habitat, water quality or hydrologic control function meets a criterion for a “locally significant wetland.”

The OFWAM also includes a set of questions to assess whether any wetlands within the study area should be considered Wetlands of Special Interest for Protection (WSIP). The questions address whether a wetland is in a management plan, is protected by regulatory rules and statutes, or is uncommon in Oregon. An affirmative answer to any one of the ten questions will place the wetland into the WSIP category and management decisions should be made to protect the site.

Following completion of the LWI and the OFWAM functional assessment, all wetlands were evaluated against the state’s wetlands significance criteria (OAR 141-086-0350). In addition to a high rating for any of the four functions noted above, the state’s mandatory criteria include wetlands that:

- Are located within 1/4-mile of a “water quality limited stream” and have “intact” or “impacted or degraded” water quality function;
- Contain one or more rare plant communities;



- Are inhabited by any species listed by the federal government as threatened or endangered, or listed by the state as sensitive, threatened or endangered; or
- Have a direct surface water connection to a stream segment mapped by the ODFW as habitat for indigenous anadromous salmonids, and have “intact” or “impacted or degraded” fish habitat function.

The City’s Natural Features TST recommended that two additional (“optional”) criteria be used to determine the significance of wetlands in Damascus. These criteria are:

- The wetland represents a locally unique native plant community; or
- The wetland is publicly owned and determined to "have educational uses" using OFWAM, and such use by a school or organization is documented for that site.

The following summary and data sheets are contained in the appendices to this report:

- Wetland Characterization Sheets
- Wetland Assessment Summary Sheets
- OFWAM Summary Sheets
- Wetland Data Sheets

Mapping Procedures

Field maps were prepared using 2005 digital color ortho-photographs at a scale of 1 inch = 400 feet. All data were geo-referenced with the aerial imagery; the City parcel data were not reliable and Clackamas County GIS is in the process of correcting the parcel layer (expected to be completed by December 2007). Information shown on the field maps included existing wetland data (including DSL wetland determinations and NWI wetlands), photo-interpreted potential wetland sites, hydric soils, streams, water bodies, hydrologic basin boundaries, property boundaries, and public rights-of-way.

Wetlands and sample plots were mapped on the field maps and GPS waypoints were taken at wetland edges and sample plots, where property access was granted. A combination of other reference points was used in conjunction with GPS waypoints to establish the location and perimeter of each wetland polygon and the location of sample plots. These references included property lines (e.g., survey corner markers), streams, building lines, streets, utilities, trees and other mapped physical features that could be used to determine location and distances on the ground.

Wetland boundaries and sample plots were digitized and registered with the base map in GIS. Inventory maps were prepared following the requirements of OAR 141-086-0210 and the Digital Map Standards of OAR 141-086-0225.



Inventory Results

The wetland inventory field work was performed between February and June, 2007. Twenty-six wetlands of one-half acre or larger were identified as part of the Local Wetland Inventory (Figure 3). Numerous additional “possible wetlands” were identified and noted on maps, but these were generally less than the one-half acre threshold identified by the state.⁶ Wetlands varied in size from approximately 0.7 acre to 27 acres, with a total combined acreage of approximately 150 acres. Wetlands were distributed within six subwatersheds: Badger Creek, Clackamas River, Noyer Creek, Richardson Creek, Rock Creek and Sunshine Creek.

Several additional subwatersheds were identified in the study area but did not contain wetlands. Subwatersheds are shown on the Wetlands and Water Resources Inventory map (Figure 3). Table 5 summarizes the distribution and relative size of wetlands by subwatershed. The basin areas in the table reflect the acreage of the basin located within the study area.

Table 5. Wetland Size by Subwatershed

Subwatershed	Basin Area (acres)	Wetland (acres)	Percent wetland in basin
Badger Creek	121	3.71	3.07%
Clackamas River	595	4.74	0.80%
Deep Creek	292	0	0.00%
Kelley Creek	425	0	0.00%
Noyer Creek	1,326	39.26	2.96%
Richardson Creek	2,048	12.71	0.62%
Rock Creek	3,504	60.88	1.74%
Sunshine Creek	2,022	28.04	1.39%
TOTAL	10,333	149.34	

Wetland Classes

Wetlands in the Damascus area fall into two primary (Cowardin) classifications: Palustrine Emergent and Palustrine Forested wetlands. Palustrine Scrub-shrub and Open Water wetlands also occur, but in smaller numbers. These four wetland types are summarized below.

Palustrine Forested Wetlands (PFO)

Forested wetlands generally include wetlands or portions of wetlands dominated by woody species over 30 feet in height. Forested wetlands are distributed primarily in the Noyer and Rock Creek basins.

⁶ The “possible wetlands” were mapped according to DSL requirements and are not included in the wetland calculations that follow.



Forested wetlands in Damascus include a combination of deciduous species dominated by Oregon ash (*Fraxinus latifolia*) and black cottonwood (*Populus trichocarpa* v. *balsamifera*). Other common tree species include red alder (*Alnus rubra*) and western red cedar (*Thuja plicata*). Understory vegetation varies widely, from native shrub and emergent species to sites dominated by reed canarygrass (*Phalaris arundinacea*).

These wetland habitats generally provide high quality habitat for a wide variety of birds, mammals, amphibians and aquatic organisms. Structural and species diversity is moderately high, though limited in areas dominated by a reed canarygrass understory.

Palustrine Scrub-Shrub Wetlands (PSS)

Scrub-shrub wetlands are transitional habitats characterized by woody species less than 30 feet in height. These wetlands are distributed in small pockets within the Damascus study area.

Scrub-shrub wetlands in Damascus include a wide variety of deciduous species dominated by red-osier dogwood (*Cornus sericea* v. *stolonifera*), Douglas spirea (*Spiraea douglasii*), and several species of willows (*Salix* spp.). Emergent species at these sites tend to be limited in diversity and often dominated by reed canarygrass.

These wetland habitats provide food, cover, and nesting habitat for insect-eating bird species such as warblers, flycatchers and swallows. Structural and species diversity is low to moderate.

Palustrine Emergent Wetlands (PEM)

Emergent wetlands include marshes and shallow ponds dominated by grasses and other herbaceous plants. This is the most common wetland type within the study area, occurring in every subwatershed that contains wetlands.

Many emergent wetlands in Damascus are dominated by the invasive, non-native reed canarygrass. Native species dominated associations include slough sedge, skunk cabbage, and soft rush.

Small mammals and snakes are commonly found within this habitat type, which in turn attract northern harriers, red tail hawks, owls, and coyotes that feed upon them. Overall habitat value of this wetland type is low to moderate, depending of the extent of reed canarygrass infestation.

Palustrine Open Water Wetlands (POW)

Open water habitats generally include ponds and standing water habitats greater than six feet in depth. Open water areas provide important and necessary habitat for fish, aquatic invertebrates, water dependent mammals such as river otter, fish-eating birds (kingfisher, osprey, eagles), waterfowl and shorebirds. The off-channel open water habitats along the Clackamas River also



provide important refuge habitat for fish, particularly juvenile salmon. Open water areas are commonly associated with other wetland types (e.g., emergent, scrub/shrub, and forested).

Table 6 summarizes the distribution of wetlands by Cowardin classification within the study area. It should be noted that several wetlands had multiple classifications and generally only distinct Cowardin classes of more than one-half acre were mapped.

Table 6. Wetland Cowardin Classifications

Cowardin Class	Area (acres)
Forested Wetlands (PFO)	30.3
Scrub-Shrub Wetlands (PSS)	1.2
Emergent Wetlands (PEM)	115.2
Open Water (POW)	2.7
Total	149.4

All but a few wetlands were associated with local streams or the Clackamas River. Another classification system used by DSL is the hydrogeomorphic (HGM) classification. Table 7 summarizes the number and size of wetlands by HGM class and subclass. Because some wetlands may consist of more than one such classification, this table reflects only the dominant HGM class for each wetland.

Table 7. Wetland Hydrogeomorphic Classifications

Hydrogeomorphic Class / subclass	Area (acres)	Number of Wetlands
Riverine Flow-Through (RFT)	22.76	14
Slope - Headwater (SH)	28.25	2
Slope - Valley (SV)	51.89	5
Slope (S)	11.18	1
Slope / Flats (S/F)	31.55	3
Flats (F)	3.71	1
Total	126.58	26



Summary

Table 8 provides a summary of the distribution and size of wetlands within each sub-watershed. The subwatersheds and wetlands are shown in Figure 3.

Table 8. Wetlands by Subwatershed

Subwatershed	Wetland code	Area (acres)
Badger Creek (BA)	BA-A-01	3.71
Clackamas River (CL)	CL-A-01	2.70
	CL-A-02	0.69
	CL-A-03	1.35
Noyer Creek (NO)	NO-A-01	12.92
	NO-A-02	13.96
	NO-A-03	11.18
	NO-A-04	1.22
Richardson Creek (RI)	RI-A-01	1.39
	RI-C-01	4.67
	RI-C-02	1.73
	RI-D-01	1.19
	RI-D-02	1.61
	RI-E-01	2.13
Rock Creek (RO)	RO-A-01	0.81
	RO-A-02	1.86
	RO-A-03	3.47
	RO-B-01	1.16
	RO-D-01	26.86
	RO-D-02	2.19
	RO-E-01	19.43
	RO-F-01	1.14
RO-F-02	3.96	
Sunshine Creek (SU)	SU-A-01	1.39
	SU-A-02	25.48
	SU-A-03	1.16*
TOTAL		149.35

* This area includes the wetland portion of the mosaic area (60% of the 1.94 acre polygon).



Wetland Assessment Results

Wetland quality was assessed for each wetland unit using the Oregon Freshwater Wetland Assessment Methodology (OFWAM). As noted previously, DSL staff suggested that only the four wetland functions (wildlife habitat, fish habitat, water quality, hydrologic control) needed to be assessed for this project, as these relate directly to the wetland significance criteria. In addition, where a wetland was located on public lands, education functions were also assessed to determine whether the wetland was significant as an educational resource.⁷

Table 9 provides the results of the OFWAM assessments for each wetland unit in the study area. Certain categories were not applicable to particular wetlands. For example, if a wetland was not connected to a stream or other water body, fish habitat functions were not assessed.

⁷ As described in the Methods section, the Natural Features TST recommended adding this “optional” criterion for wetland significance. To evaluate whether the criterion was met, the OFWAM education value was also assessed for wetlands on public lands.



Table 9. OFWAM Wetland Assessment and LSW Results

Wetland Code	Acres	Exempt	Mandatory Criteria								Optional Criteria		Significant?
			OFWAM				¼ Mile of WQL Stream	Rare Plant Community	Listed Species	Connects to Salmon Habitat	Local Unique Native Plant Community	Public With Educational Use	
			Wildlife	Fish	Water Quality	Hydrologic Control							
BA-A-01	3.71	No	Provides	Impacted	Intact	Impacted	No	No	N/D	No	No	No	Yes
CL-A-01	2.70	No	Provides	Intact	Intact	Intact	Yes	No	N/D	Yes	No	No	Yes
CL-A-02	0.69	No	Provides	Impacted	Impacted	Intact	Yes	No	N/D	Yes	No	No	Yes
CL-A-03	1.35	No	Provides	N/A	Impacted	Impacted	No	No	N/D	No	No	No	No
NO-A-01	12.92	No	Diverse	Impacted	Impacted	Intact	No	No	N/D	No	No	No	Yes
NO-A-02	13.96	No	Diverse	Impacted	Intact	Intact	No	No	N/D	No	No	No	Yes
NO-A-03	11.18	No	Diverse	Impacted	Intact	Intact	No	No	N/D	No	No	No	Yes
NO-A-04	1.22	No	Diverse	Impacted	Impacted	Intact	No	No	N/D	No	Yes	No	Yes
RI-A-01	1.39	No	Provides	N/A	Impacted	Impacted	No	No	N/D	No	No	No	No
RI-C-01	4.67	No	Provides	Impacted	Intact	Impacted	No	No	N/D	Yes	No	No	Yes
RI-C-02	1.73	No	Diverse	Impacted	Intact	Intact	No	No	N/D	Yes	No	No	Yes
RI-D-01	1.19	No	Diverse	Impacted	Intact	Impacted	No	No	N/D	Yes	No	No	Yes
RI-D-02	1.61	No	Provides	Impacted	Impacted	Intact	No	No	N/D	Yes	No	No	Yes
RI-E-01	2.13	No	Provides	Impacted	Intact	Impacted	No	No	N/D	Yes	No	No	Yes
RO-A-01	0.81	No	Provides	Impacted	Intact	Impacted	No	No	N/D	No	No	Potential*	Yes
RO-A-02	1.86	No	Diverse	Impacted	Impacted	Intact	Yes	No	N/D	No	No	No	Yes
RO-A-03	3.47	No	Diverse	Impacted	Impacted	Impacted	No	No	N/D	No	No	No	Yes
RO-B-01	1.16	No	Diverse	Impacted	Intact	Impacted	No	No	N/D	No	No	No	Yes
RO-D-01	26.86	No	Diverse	Impacted	Impacted	Impacted	No	No	N/D	No	No	No	Yes



Wetland Code	Acres	Exempt	Mandatory Criteria							Optional Criteria		Significant?	
			OFWAM				¼ Mile of WQL Stream	Rare Plant Community	Listed Species	Connects to Salmon Habitat	Local Unique Native Plant Community		Public With Educational Use
			Wildlife	Fish	Water Quality	Hydrologic Control							
RO-D-02	2.19	No	Provides	Impacted	Intact	Impacted	No	No	N/D	No	No	No	Yes
RO-E-01	19.43	No	Diverse	Intact	Impacted	Intact	No	No	N/D	No	Yes	No	Yes
RO-F-01	1.14	No	Provides	Impacted	Impacted	Impacted	Yes	No	N/D	No	No	No	Yes
RO-F-02	3.96	No	Provides	Impacted	Impacted	Intact	Yes	No	N/D	No	No	No	Yes
SU-A-01	1.39	No	Provides	Impacted	Intact	Impacted	No	No	N/D	No	No	No	Yes
SU-A-02	25.48	No	Diverse	Impacted	Impacted	Intact	No	No	N/D	No	Yes	Potential*	Yes
SU-A-03	1.16	No	Provides	Impacted	Impacted	Impacted	No	No	N/D	No	No	No	No

WQL: Water quality limited

N/D: None Detected (a formal sensitive species survey was not part of the scope for this project).

* These wetlands may not meet the letter of the education criterion, but that is due in part to the very recent incorporation of the City and the fact that future school sites and educational activities are currently being evaluated. The Gresham-Barlow School District, for example, is currently considering purchase of a property that includes a portion of wetland SU-A-02. The DSL staff is aware of the Natural Features TST recommendation to include the education criterion and will review this question (whether these wetlands qualify under the criterion) as part of their LWI review.



Table 10 summarizes the relative distribution of assessments for each function, with the percentage of total wetlands ranking high in each category.

Table 10. Wetland Assessment Results for Key Wetland Functions

Function	High	Moderate	Low	N/A	% Wetlands Assessed High
Wildlife habitat	12	14	0		46%
Fish habitat	2	24	0	2	8%
Water quality	12	14	0		46%
Hydrologic control	12	14	3		46%

Each wetland was assessed to determine whether it should be considered a Wetland of Special Interest for Protection (WSIP). The questions in the WSIP category cover the presence of federal or state listed species and habitats, existing local, state or federal protections, and existing management plans. The following wetlands were found to be WSIP wetlands:

- CL-A-01. Wetland provides essential habitat for spring Chinook (Lower Columbia ESU), winter Steelhead (Lower Columbia ESU), and Coho (Lower Columbia ESU); critical habitat for spring Chinook (Lower Columbia ESU), winter Steelhead (Lower Columbia ESU); and
- CL-A-02. Wetland provides essential habitat for spring Chinook (Lower Columbia ESU), winter Steelhead (Lower Columbia ESU), and Coho (Lower Columbia ESU); critical habitat for spring Chinook (Lower Columbia ESU), winter Steelhead (Lower Columbia ESU).

In addition to the two WSIP wetlands that meet specific state criteria as “special interest” wetlands, seven wetlands received high ratings based on the local assessment. The following wetlands were deemed of high quality by virtue of: 1) receiving high ratings for three of the OFWAM functions, or 2) receiving high ratings for two OFWAM functions and meeting the significance criteria for salmon habitat connection or locally unique native plant communities.

- NO-A-02
- NO-A-03
- NO-A-04
- RI-C-02
- RI-D-01
- RO-E-01
- SU-A-02

During field investigations, the field team reviewed potential wetland mitigation or restoration sites. These sites are defined by DSL as “vacant, former wetlands, consisting mostly of relict (dewatered) hydric soils, which are five acres or larger in size.” Several areas were observed that are currently in farm use and contain extensive drain tile systems, some functioning and some



not. Some of these lands are in areas of mapped hydric soils and could be assumed to be former wetlands. However, most of these areas were less than five acres in size. One site that potentially meets this size threshold adjoins the west side of wetland SU-A-02. This land is currently used as pasture for a local farm. Aerial photographs reveal evidence of a formerly meandering Sunshine Creek channel that has been straightened, suggesting that wetlands extended further west than they do today. The west slope rising up from Sunshine Creek may have had characteristics similar to the east slope, which is currently wetland fed by groundwater seepage. Thus, the area immediately west of wetland SU-A-02 is considered a potential wetland mitigation or restoration site.

Significant Wetlands Determination

Following completion of the wetland inventory and functional assessment, all wetlands were evaluated against the state's wetlands significance criteria. These include the following mandatory criteria:

1. wetland provides a diverse wildlife habitat, intact fish habitat, intact water quality function, or intact hydrologic control function;
2. wetland is located within 1/4-mile of a "water quality limited stream" and has "intact" or "impacted or degraded" water quality function;
3. wetland contains one or more rare plant communities;
4. wetland is inhabited by any species listed by the federal government as threatened or endangered, or listed by the state as sensitive, threatened or endangered; or
5. wetland has a surface water connection to a stream that is habitat for indigenous anadromous salmonids and has "intact" or "impacted or degraded" fish habitat function.

As discussed previously, the City's Natural Features TST recommended that two additional criteria be used to determine the significance of wetlands in Damascus. These criteria are:

1. wetland represents a locally unique native plant community; or
2. wetland is publicly owned and has educational uses.

A total of 23 wetlands met one or more of the above criteria and were determined to be significant. The three wetlands that do not qualify as significant are CL-A-03, RI-A-01 and SU-A-03. As shown in Table 9, most of the significant wetlands provided high wildlife or fish habitat, water quality, or hydrologic control function. A few wetlands also met the other significance criteria, including being located within a quarter-mile of a water quality limited stream, having a surface water connection to a salmonid stream, or meeting the optional criteria applied on the recommendation of the Natural Features TST.



Riparian Corridors

The inventory of riparian corridors was conducted concurrently with the wetlands inventory. Similar to the LWI, the inventory was organized into three phases:

- Planning (October, 2006 - January, 2007). Collection and review of existing maps and information, public review and field base map preparation;
- Field inventory (February - May, 2007). Field inventory and assessment, and meetings with the Natural Features TST; and
- Public meetings and review (May - June, 2007). Second series of public meetings, follow-up field visits, meetings with the Natural Features TST, and preparation of a revised maps and report.



Riparian corridors ranged in size from large rivers (Clackamas) to small streams.

A summary of the public involvement process for this project is provided in the *Public Involvement and Agency Coordination* section of this report.

Inventory Methods

Unlike the preceding Local Wetlands Inventory, the state has not adopted special rules related to riparian corridor inventories. Riparian corridor inventories normally follow the inventory requirements of the Goal 5 Administrative Rule. However, with the acknowledgement of Metro's Title 13 ordinance addressing Goal 5 riparian corridors within the region, the Damascus riparian inventory approach was adapted for consistency with Metro's requirements, while at the same time maintaining consistency with the standard inventory provisions of Goal 5.

The City's Natural Features TST, a representative group of citizens from the Damascus community, played an important role in the evaluation of inventory methods and significance determination. This committee met four times with members of the project team to review inventory methods and findings, and to make recommendations on the guidelines and criteria for determining resource significance.

The riparian inventory for the City of Damascus followed an ecological functions approach to riparian corridor assessment. Among the functions evaluated were water quality protection, streamflow moderation and water storage, provision of fish and wildlife habitat, and biodiversity support. Surface water conveyance was another basic function of streams recognized by the Natural Features TST.



The approach focused on field reconnaissance of Damascus stream corridors, making use of technologies such as Light Detection and Radar (LiDAR) and Global Positioning Systems (GPS), as well as Geographic Information System (GIS) mapping and analysis technology.

Two levels of investigation were conducted for the inventory of riparian corridors: a review of existing information and a field inventory.

Review of Existing Information

A review of existing literature, maps, and other materials was conducted to gather information on riparian corridors along rivers, ponds, wetlands, and streams in Damascus. The review of existing information is summarized in a January 18, 2007 memorandum, "Review of Best Available Data."⁸ As noted in the Wetlands section, updated information received since that review included:

- City plat map correction – western part of City (Clackamas County GIS);
- Fish presence and fish barriers data (Oregon Department of Fish and Wildlife);
- Groundwater Restricted Areas (Oregon Water Resources Department); and
- Local knowledge of area (obtained from residents and local resource experts during course of public involvement process).

Other base sources of riparian-related information included:

- Oregon Department of Forestry stream classification maps;
- United States Geological Service (USGS) 7.5-minute quadrangle maps
- NWI maps;
- FEMA Floodplain maps;
- Color aerial photography (RLIS 2005);
- Metro riparian inventory data and maps; and
- Oregon Natural Heritage Information Center data.

The existing information served as the basis for preparing GIS base maps showing streams and potential riparian corridor locations.

The study area was divided into riparian sites based on watersheds (the drainage areas for individual streams and rivers). These sites were assigned a code based on the watershed (first two letters of the stream name) and the subwatersheds (generally tributary basins within the larger watershed). Thus, the lower tributary to Rock Creek received a code of RO-A; one tributary upstream, RO-B; and so forth.

⁸ This memorandum is included here by reference and available at Damascus City Hall.



Field Inventory

Team scientists reviewed inventory methodologies developed by Metro, other local Goal 5 methodologies, and the state's Urban Riparian Inventory and Assessment Guide (URIAG). These methodologies rely on a combination of best available knowledge, field observations, and best professional judgment. The team also reviewed the existing available data within the study area. Based on this review of methodologies and data, and consideration of the limited "ground-truthing" scope of the inventory, the team developed an inventory and assessment method tailored to the riparian conditions in Damascus.

For the Damascus inventory, information was collected on the physical and biological characteristics of the riparian corridors within each of the City's resource sites. Each riparian site was assessed from public rights-of-way or from selected private properties where access permission was granted. Multiple observation points were used for each site where possible. GPS waypoints of stream centerlines, tops-of-bank, road crossings, and other features were collected where accessible. As noted previously, this was a reconnaissance level survey to "ground truth" existing information and data; however, supplemental information was collected for each site. Information collected included the following:

- Stream/reach name
- Other water resources
- Floodplains
- Fish barriers
- Large wood features
- Recruitment potential
- Stream gradient
- Side slopes
- Average vegetated width
- Channel shade
- Channel alteration
- Characteristic vegetation

In addition, the location and general characteristics of each riparian site were noted. Other relevant information such as associated wetland sites and adjacent land uses were also identified. Riparian characteristics were recorded on individual Riparian Corridor Summary Sheets contained in Appendix G.

Functional Assessment and Significance Determination

The riparian corridor assessment method builds on previous methodologies identified above. The project team developed a Riparian Functions Assessment form to evaluate specific functions of riparian corridors within Damascus. These functions, as endorsed by the Natural Features TST, included the following:

- water quality protection
- streamflow moderation and water storage
- fish habitat
- wildlife habitat
- biodiversity



Riparian functions were assessed based on parameters developed by the team scientists after a review of the scientific literature and the riparian assessment methods noted above. The assessment results indicate whether specific functions were high, medium, or low for a given riparian site. Overall ratings for each site were based on the functional ratings: riparian sites with two or more high values received a high rating, two or more medium or one high value received a medium rating, and all other sites received at low rating. The factors evaluated are summarized below:

- Water quality protection. Water quality factors assess the potential of the riparian corridor to protect water quality in streams and other water features associated with the corridor. These factors include the density and type of vegetation cover, width of vegetation cover along the water feature, extent of impervious surfaces, extent of shade cover, and erosion potential of soils. The highest rated sites have dense woody vegetation, wide vegetated corridors, minimal impervious surfaces, high shade cover, and slight erosion potential.
- Streamflow moderation/water storage. Streamflow moderation/water storage factors assess the potential of the riparian corridor to moderate streamflow by intercepting, absorbing and storing rainfall, and to provide water storage and conveyance during flood events. These factors include the presence of floodplains and stream-associated wetlands, extent of woody vegetation cover, degree of streambank alteration, location of the site within the basin, and connectivity to forested uplands. The highest rated sites have large floodplains or associated wetlands, dense woody vegetation, low bank alteration, are located in upper part of the basin, and are well-connected to forested uplands.
- Fish habitat. Evaluation factors assess the potential of the riparian corridor to provide habitat and migration opportunities for fish. They include the presence of fish (ODFW or other sources), degree of channel alteration, degree of channel shade, potential for large woody debris recruitment, and presence of barriers to fish migration. The highest rated sites are fish-bearing streams that have low channel alteration, a high degree of shade, high recruitment potential, and no fish barriers.
- Wildlife habitat. Evaluation factors assess the potential of the riparian corridor to provide important habitat values for wildlife. These factors include habitat patch size, extent and seasonality of surface water, habitat diversity, degree of human-caused disturbance, and habitat connectivity. The highest rated sites have contiguous habitat size of greater than 10 acres, multiple water types including permanent water sources, high habitat diversity, low human disturbance, and high connectivity to other habitat areas.
- Biodiversity. These factors assess the potential for the riparian corridors to support biodiversity. Evaluation factors include the presence of federal or state-listed species, Oregon Natural Heritage Information Program (ORNHIC) priority habitats, locally rare habitats, extent of native vegetation cover, and human disturbance. The highest rated sites have one or more listed species, priority habitats, locally rare species or habitats, high degree of native vegetation cover, and low levels of disturbance.



These functions were evaluated for each site from roads, other public lands, and selected private properties where access permission was granted. Field maps (with aerial imagery, stream locations, etc.) and other reference materials were consulted to assess broader factors such as patch size, fish presence, or average channel shade. The riparian functional assessment was recorded on Riparian Summary Sheets contained in Appendix G.

Following completion of the riparian inventory and functional assessment, riparian sites were evaluated for significance. Similar to wetlands, riparian functional assessments were used to guide the determination of significance. The Natural Features TST noted that in addition to providing one or more of the five functions noted above, each stream provides the basic function of surface water conveyance.

Inventory Results

The riparian inventory field work was performed between February and June, 2007. Eight subwatersheds containing 20 riparian corridor sites were identified during the riparian inventory. All riparian corridors were associated with streams or rivers; some corridors included streamside wetlands. Table 11 identifies the watersheds, subwatersheds, and subwatershed sizes within Damascus.

Table 11. Watersheds, Subwatersheds, and Acres within Damascus

Watershed	Subwatershed	Subwatershed Acres in Damascus
Johnson Creek	Badger Creek	121
	Kelley Creek	425
	Sunshine Creek	2,022
Clackamas River	Clackamas River	595
	Deep Creek	292
	Noyer Creek	1,326
	Richardson Creek	2,048
	Rock Creek	3,504
TOTAL		10,333

Riparian corridors in Damascus vary in size and shape with the size and condition of the surrounding subwatershed. The combined area of riparian corridors within Damascus is approximately 1,674 acres; the combined stream length is 48 miles. Table 12 summarizes riparian corridor characteristics, corridor length and area, and associated wetlands. This table is organized in alphabetical order.



Table 12. Riparian Site Characteristics, Length and Area

Riparian Site	Riparian Code	Summary	Associated Wetlands	Total stream length (miles)	Corridor area (acres)
Badger Creek	R-BA-A	Badger Creek, tributary to Johnson Creek; red alder dominated riparian corridor. Farming and low density residential uses.	BA-A-01	0.91	31.11
Clackamas River	R-CL-A	River segment at Carver, downstream from Richardson Creek confluence. Clackamas River, large riverine system with island habitat, broad floodplain, and bottomland cottonwood forest. Steep canyon walls rise above floodplain, with some basalt cliffs.	CL-A-01 CL-A-02 CL-A-03	1.98	107.96
Clackamas River Tributary	R-CL-C	Upper reach of small tributary to Clackamas River; constrained and altered by nearby development. The southern site boundary is Tong Road, approximately 1,000 north of its intersection with Oregon 224. Below the road, the stream is part of R-CL-A.		0.39	12.17
Deep Creek Lower Tributary	R-DE-A	Small tributaries to lower Deep Creek and Clackamas River; includes mature mixed forest corridor along 232 nd Avenue. Lower section of streams disturbed by road crossings and residential uses and development; riparian corridor fragmented at 232 nd and Oregon 224.		0.93	33.66
Kelley Creek Headwaters	R-KE-A	Mainstem/headwaters of Kelley Creek, with multiple tributaries; mixed deciduous and evergreen riparian habitats. Cutthroat trout noted (by ODFW) up to approximately north limit of site. Kelley Creek is a tributary to Johnson Creek.		2.20	96.43
Noyer Creek – Upper Basin	R-NO-A	Upper Noyer Creek with multiple tributaries and associated wetlands. Riparian conditions degraded by farming and development, but restoration opportunities exist and biological health of stream improves dramatically in downstream forested ravines. Noyer Creek drains to Deep Creek before the confluence of Deep Creek and Clackamas River.	NO-A-01 NO-A-02 NO-A-03 NO-A-04	5.16	194.69
Richardson Creek – West Tributary	R-RI-A	Small Richardson Creek tributary with riparian corridor partly fragmented by road and development.	RI-A-01	0.53	20.92



Riparian Site	Riparian Code	Summary	Associated Wetlands	Total stream length (miles)	Corridor area (acres)
Richardson Creek – Central Confluence	R-RI-B	Junction of Richardson Creek’s main stem and north branch. One of the core riparian habitat areas within City, supporting steelhead trout and coho salmon. Biological health of Richardson Creek increases from upper reaches to lower reaches.		2.48	78.32
Richardson Creek – Northwest Tributary	R-RI-C	Richardson Creek tributary with associated wetlands. Riparian corridor fragmented by roads and development; limited forest cover.	RI-C-01 RI-C-02	1.36	44.64
Richardson Creek – North Tributary	R-RI-D	Richardson Creek tributary through Damascus town center. Riparian corridor with wetlands upstream of Safeway in fair condition, otherwise fragmented and/or piped.	RI-D-01 RI-D-02	2.18	63.23
Richardson Creek – Northeast Tributary	R-RI-E	Richardson Creek tributary; largely farmed and developed corridor with minimal forest cover along stream channel.	RI-E-01	1.73	46.56
Richardson Creek – East Tributary	R-RI-F	Southern Richardson Creek tributary with multiple forks. Riparian corridor partly fragmented by roads, farming and development; stream piped in developed areas to northwest.		1.52	41.96
Rock Creek - South Tributary	R-RO-A	Lower Rock Creek tributary with multiple associated wetlands; generally forested riparian corridors.	RO-A-01 RO-A-02 RO-A-03	2.28	69.05
Rock Creek - Sunnyside Tributary	R-RO-B	Rock Creek tributary with ash swale. Meandering channel has been altered in several locations, and ponds excavated. Fish have been documented by ODFW downstream, west of Rock Creek Road and outside city limits.	RO-B-01	0.77	21.46
Rock Creek - Vogel Tributary	R-RO-C	Small, north-flowing Rock Creek tributary. Riparian corridor fragmented by roads and development; several stream reaches piped. Year-round spring feeds stream.		1.18	35.47
Rock Creek - Northwest Tributary	R-RO-D	Broad valley floor at boundary between Clackamas River and Johnson Creek watersheds. Upper Rock Creek tributary lined nearly its entire length by wetlands. Riparian areas largely pastureland; small forest patches to north and south.	RO-D-01 RO-D-02	1.39	60.97
Rock Creek - Northeast Tributary	R-RO-E	Headwaters of Rock Creek, with multiple tributaries. Mixed deciduous and evergreen riparian forests along stream corridor.	RO-E-01	2.85	117.45



Riparian Site	Riparian Code	Summary	Associated Wetlands	Total stream length (miles)	Corridor area (acres)
Rock Creek - Mainstem	R-RO-F	Rock Creek mainstem with multiple spring-fed tributaries and intact forested riparian corridors. Fish-bearing stream documented by ODFW; resident cutthroat trout in lower part of this reach. Red-legged frogs detected within site. High number of interspersed seeps and springs on the buttes and along streams and wetlands.	RO-F-01 RO-F-02	9.22	301.15
Sunshine Creek	R-SU-A	Mainstem of Sunshine Creek with multiple tributaries and associated wetlands. Riparian corridor impacted by farming, roads and development. Small patches of riparian forest in upper and lower (north and south) parts of the site.	SU-A-01 SU-A-02 SU-A-03	5.71	187.45
Sunshine Creek – West Tributary	R-SU-B	Sunshine Creek tributary descending from largely intact forest habitats on “North Sunshine” butte. Riparian areas include stream segments with mature cedar forest. Fish-bearing stream documented by ODFW. Red-legged frogs detected within site.		2.75	109.66
TOTAL				47.52	1674.31

Riparian Corridor Assessment Results

Riparian corridors were assessed using a Riparian Functions Assessment form, developed by the scientific team based in part on URIAG and Metro assessment methods and on the recommendations of the Damascus Natural Features TST.

Each riparian site was evaluated for its water quality, streamflow moderation/water storage, fish habitat, wildlife habitat, and biodiversity support functions. Similar to the wetlands assessment approach, the riparian ratings resulted in values of “high,” “medium,” and “low.” Table 13 summarizes the results of the riparian assessment for each site in the study area.

Table 13. Riparian Functional Assessment Summary

Riparian Corridor	Acres	Water quality	Water Storage/ Flow Moderation	Fish Habitat	Wildlife habitat	Biodiversity
R-BA-A. Badger Creek	31.11	M	L	M	L	L
R-CL-A. Clackamas River	107.96	H	M	H	H	H
R-CL-C. Clackamas River Tributary	12.17	H	L	L	L	L



Riparian Corridor	Acres	Water quality	Water Storage/ Flow Moderation	Fish Habitat	Wildlife habitat	Biodiversity
R-DE-A. Deep Creek – Lower Tributary	33.66	H	L	M	H	M
R-KE-A. Kelley Creek Headwaters	96.43	H	H	H	H	M
R-NO-A. Noyer Creek – Upper Basin	194.69	M	M	L	M	L
R-RI-A. Richardson Creek – West Tributary	20.92	H	L	L	L	L
R-RI-B. Richardson Creek – Central Confluence	78.32	H	H	H	H	H
R-RI-C. Richardson Creek – Northwest Tributary	44.64	M	M	L	L	L
R-RI-D. Richardson Creek – North Tributary	63.23	M	M	L	M	L
R-RI-E. Richardson Creek – Northeast Tributary	46.56	H	L	L	L	L
R-RI-F. Richardson Creek – East Tributary	41.96	M	M	L	L	L
R-RO-A. Rock Creek - South Tributary	69.05	H	M	M	H	M
R-RO-B. Rock Creek - Sunnyside Tributary	21.46	M	M	L	L	L
R-RO-C. Rock Creek - Vogel Tributary	35.47	H	L	M	L	L
R-RO-D. Rock Creek - Northwest Tributary	60.97	M	M	L	L	L
R-RO-E. Rock Creek - Northeast Tributary	117.45	H	H	H	H	M
R-RO-F. Rock Creek - Mainstem	301.15	H	H	H	M	M
R-SU-A. Sunshine Creek	187.45	M	M	L	L	L
R-SU-B. Sunshine Creek – West Tributary	109.66	H	M	H	H	M

Key: H: High; M: Medium; L: Low

Table 14 summarizes the relative distribution of assessments for each riparian function, with the percentage of total sites ranking high in each category.

Table 14. Riparian Functional Assessment Results

Function	High	Moderate	Low	% Riparian Sites Assessed High
Water quality	12	8	0	60%
Streamflow moderation and water storage	4	10	6	20%
Fish habitat	6	4	10	30%



Wildlife habitat	7	3	10	35%
Biodiversity	2	6	12	10%

The following riparian corridors received high overall ratings relative to other corridors within the study area:

- R-CL-A. Clackamas River
- R-DE-A. Deep Creek – Lower Tributary
- R-KE-A. Kelley Creek Headwaters
- R-RI-B. Richardson Creek – Central Confluence
- R-RO-A. Rock Creek – South Tributary
- R-RO-E. Rock Creek – Northeast Tributary
- R-RO-F. Rock Creek – Mainstem
- R-SU-B. Sunshine Creek – West Tributary

Significant Riparian Corridor Determination

In consideration of the important functions that riparian corridors provide throughout Damascus, the Natural Features TST recommended that all streams, as mapped and refined during the inventory and public review process, be considered significant for the purposes of Goal 5. Significant riparian corridors are shown as an integrated element of Figure 4, Wildlife Habitat and Riparian Corridors.



Wildlife Habitat

The inventory of wildlife habitats was conducted concurrently with the wetland and riparian inventory. Similar to wetlands and riparian areas, the habitat inventory was completed in three phases: planning (October, 2006 - January, 2007); field inventory (February - May, 2007); and public meetings⁹ and inventory refinement (May - June, 2007).

Inventory Methods

The inventory of Damascus wildlife habitats is an integrated mapping of wetland, riparian and upland habitats. Similar to the riparian inventory, the methods for the habitat inventory were adapted for consistency with Metro's Title 13 provisions and the standard inventory requirements of Goal 5. The Damascus Natural Features TST played an important role in the evaluation of habitat inventory methods and significance determination. The committee reviewed inventory methods and findings, and to made recommendations on the guidelines and criteria for determining resource significance.



Habitat area on butte, with associated spring, headwater stream, and forest cover

The approach focused on field reconnaissance of Damascus wildlife habitats, which included upland, riparian and wetland habitats. The goal of the fieldwork was to ground truth and supplement existing habitat data within the study area. Tools such as GIS mapping and analysis technology, GPS waypoints, and LiDAR were also employed during the study.

Two levels of investigation were conducted for the inventory of wildlife habitats: a review of existing information and a field inventory.

Review of Existing Information

A review of existing literature, maps, and other materials was conducted to gather information on wildlife habitats within Damascus. Information sources included those identified in the wetlands and riparian methods sections.

Other base sources of wildlife habitat information included:

- ODFW wildlife habitat and sensitive species information;
- Oregon Natural Heritage Information Center data on threatened, endangered, or sensitive species in the Damascus area;
- Metro wildlife habitat inventory data and maps;

⁹ A summary of the public involvement process for this project is provided in the *Public Involvement and Agency Coordination* section of this report.

- Local inventories prepared for landowners and provided to the project team for review; and
- Consultations with resource agency staff (e.g., ODFW, Metro, Clackamas Watershed Council).

The existing information served as the basis for preparing GIS base maps showing data on species and habitat occurrence within Damascus. Habitat sites were defined in a manner consistent with other resources, with coding generally based on subwatersheds. Cover type classifications were based on National Vegetation Classification System (NVCS) definitions.

Field Inventory

Wildlife habitat sites were evaluated using combination of tools including ground truthing of existing habitat information, GIS mapping and spatial analysis, and collection of data using the Wildlife Habitat Assessment (WHA) methodology adapted for use in Damascus. The WHA method has proven effective for assessing and ranking Goal 5 habitats throughout the Willamette Valley. The methodology is a scientifically accepted system for determining the relative value of different habitat types within a community. The Oregon DLCDC has found the WHA to be an acceptable method for Goal 5 wildlife inventory compliance.

The WHA rating system evaluates each site in terms of its potential for wildlife. The WHA method is designed primarily to assess three major components of wildlife habitat: presence and quality of water, food and cover. The rating system is weighted, and reflects the presence or absence of each of these factors, plus three additional factors: human disturbance, rare features, and important habitat features. Team scientists reviewed recent refinements to the WHA methodology made by Metro; they concurred with some changes but found others to be inappropriate for Damascus, as noted below. Following is a summary of each WHA assessment factor.

- **Water.** Water resources on a site are evaluated based on four characteristics: quantity and seasonality; quality; proximity to cover; and diversity. All of these factors play an important role in a site's value to wildlife. Metro's version of the WHA form replaced water quality with "channel morphology, complexity, alteration." Team scientists determined that the original "water quality" parameter could be adequately measured in Damascus (using recent macroinvertebrate sampling, DEQ 303(d) data and other available data). The highest rated sites have multiple water sources including perennial sources, high quality water, with adjacent vegetation cover.
- **Food.** Food is a basic requirement for any organism. Wildlife species cannot survive in one area for any appreciable period of time without food. The greater the variety and quantity of food, the greater the potential for serving the needs of a range of wildlife species. The three factors considered in the assessment of forage habitat are variety, quantity, and seasonality. The highest rated sites have a wide variety of food sources available all year and in good quantity.



- Cover. Cover habitat provides important shelter and refuge for wildlife, and key cover parameters include structural diversity (e.g., vegetation layers, downed wood), variety and seasonality of cover (e.g., species diversity, evergreen vs. deciduous), and nesting/denning sites (e.g., snags, logs, rocks), and access/escape (refuge opportunities). The highest rated sites have multiple layers of vegetation, snags and logs, and a wide variety of evergreen and deciduous species in all layers, and an abundance of potential nesting and denning sites.
- Human Disturbance. This parameter assesses disturbance factors that influence the relative value of habitat areas including physical habitat modification (e.g., development, forest clearing, invasive species) and direct human disturbance (e.g., traffic, trails, pets). The highest rated sites have little or no human disturbance.
- Unique Features. This parameter assesses the presence or potential occurrence of sensitive species or habitats within the site. The project team found this to be an important element of the original methodology. Published and field-collected data on sensitive species or habitats, or potential habitat for such species, is recorded. If such species or habitats are present, the site receives additional weighted points.
- Important Habitat Features. This section examines three additional habitat features: connectivity, large wood components, and the percentage of nonnative species in each vegetation strata. The team viewed connectivity as a critical feature of habitat, without which certain animals could not reach a habitat site. Connectivity to other habitats is important to allow migration and serve the life cycle needs of many wildlife species. The highest rated sites are well connected in multiple directions to varied habitats, have accumulated downed wood and snags, and have a low proportion of nonnative species.

The scoring of each factor on the sheet is weighted based on its estimated importance for wildlife. In particular, habitats with a water source nearby will rate higher in this system, as most terrestrial wildlife species need access to water, and all species need some amount of cover while drinking at a water source. However, habitat assessments are also intended to reflect the needs of the types of species that would be expected to occur within the habitat site. Thus, an upland habitat site without on-site water may outscore a riparian site in some cases, by providing high quality forage or nesting habitat for certain species, or the presence of sensitive species or habitats. The WHA method, as adapted for Damascus, provides an assessment approach that adds greater emphasis on the value of natural communities while preserving elements of the original survey that remain relevant to Damascus habitats.

Similar to the wetland and riparian inventories, wildlife habitats were assessed from public rights-of-way or from selected private properties where access permission was granted. Multiple observation points were used for each habitat site where possible. GPS waypoints of streams, wetlands, and notable habitat features were collected where appropriate. Thresholds established for minimum habitat patch size was generally one acre (except where sensitive species or nest sites were documented). Under the project scope, this was a reconnaissance level survey with a focus on “ground truthing” of existing information and habitats.



The Natural Features TST considered a range of factors that were important to the assessment of wildlife habitat. These factors included the following:

- Wildlife Habitat Assessment ratings;
- Connectivity to other habitats and to sources of water;
- Habitat patch size;
- Presence of state or federally listed sensitive species;
- Presence of locally rare species or habitats; and
- Habitats of Concern identified by ODFW, Metro or consultants.

Inventory Results

The wildlife habitat field inventory was performed between February and May, 2007. Twenty one habitat sites were identified during the inventory. Many sites were associated with streams or rivers and included riparian and/or wetland habitats. Other significant habitats included forested upland habitats located on the Damascus buttes.

Table 15 summarizes the size, general boundaries, and associated wetland and riparian sites for habitat sites within the Damascus study area. The sites are organized alphabetically by site name.

Table 15. Summary of Habitat Site Characteristics

Habitat Site	Habitat Code	Site Acres	Habitat Resource Acres	Site Description	Wetland Habitats	Riparian Habitats
Badger Creek and Upland Habitats	BA-A	121	44.38	Badger Creek, wetlands, and small ponds provide aquatic habitat. Limited upland deciduous and mixed forest habitats. High bird use with good connection to forested butte to southwest.	BA-A-01	R-BA-A
Clackamas River Corridor Habitats	CL-A	273	188.74	Diverse Clackamas River floodplain habitats with bottomland cottonwood forest, large wetland complex, island habitat. Mature mixed forest upland habitats climb the canyon walls extending across Oregon 224. These habitats include pockets of basalt cliffs and remnant Oak Savanna habitat.	CL-A-01 CL-A-02 CL-A-03	R-CL-A



Habitat Site	Habitat Code	Site Acres	Habitat Resource Acres	Site Description	Wetland Habitats	Riparian Habitats
Clackamas River Uplands	CL-B	244	112.74	Large block of shrub/grassland area on hillside surrounded by forested edge. Provides forage and limited cover habitat for terrestrial wildlife, and serves as a linkage between Clackamas River and Rock Creek habitats. Douglas fir forest with blackberry, Scot's broom and other shrubs.		
Clackamas River Tributary Habitat	CL-C	78	15.71	Site includes the upper reach of small tributary to Clackamas River, and is degraded by nearby development. Limited Douglas fir, alder and cottonwood forest habitat.		R-CL-C
Deep Creek and Upland Habitats	DE-A	292	137.86	Diverse wildlife habitat above Clackamas River and Deep Creek confluence. Habitats include mature mixed forest riparian corridors, mature mixed and evergreen upland forests, basalt cliffs, small cobble talus.		R-DE-A
Kelley Creek/North Butler Butte Habitats	KE-A	425	285.75	Largely intact, mixed forest habitat dominated by Douglas fir, bigleaf maple and red alder. Headwaters of Kelley Creek, with multiple tributaries; mixed riparian forest habitats. Good wildlife linkages to forested buttes north, south, and east.		R-KE-A
Noyer Creek Basin Habitats	NO-A	1326	242.14	Multiple large and significant wetland habitats within site. Upper Noyer Creek riparian habitats degraded by farming and development. Limited upland forests in western and eastern parts of site	NO-A-01 NO-A-02 NO-A-03 NO-A-04	R-NO-A
Richardson Creek West Habitat	RI-A	173	31.21	Stream drops into an intact forested ravine before joining Richardson Creek in core habitat area. Riparian habitat partly fragmented by road and development. Douglas fir forest patches near stream	RI-A-01	R-RI-A
Richardson Creek Confluence Habitats	RI-B	139	105.25	One of highest quality riparian and upland habitats within the City. Confluence of Richardson Creek's main stem and north branch. Uplands of high quality; continuous connection to riparian corridors.		R-RI-B



Habitat Site	Habitat Code	Site Acres	Habitat Resource Acres	Site Description	Wetland Habitats	Riparian Habitats
Richardson Creek Northwest Habitat	RI-C	386	79.26	Richardson Creek tributary with significant stream-associated wetland habitats. Riparian habitat fragmented by roads and development. Small areas of grassland and forest habitat outside riparian/wetland corridor.	RI-C-01 RI-C-02	R-RI-C
Richardson Creek North Habitat	RI-D	609	116.17	Richardson Creek tributary through Damascus town center. Riparian habitats generally fragmented. Upland forest habitat primarily on steeper slopes at north end of site.	RI-D-01 RI-D-02	R-RI-D
Richardson Creek Northeast Habitat	RI-E	399	62.54	A largely farmed and developed habitat site with minimal forest cover along stream. One stream-associated wetland habitat.	RI-E-01	R-RI-E
Richardson Creek East Habitat	RI-F	342	62.25	High bird use with good connection to forested Clackamas River canyon to south. Riparian habitats partly fragmented by roads, farming and development. Mixed upland forest is scattered throughout site; shrub and grasslands provide some connective habitat.		R-RI-F
Rock Creek South Tributary Habitats	RO-A	445	115.35	Lower Rock Creek tributary with multiple and diverse wetlands connected to forest habitats. Mature upland forests connected to forested riparian corridors.	RO-A-01 RO-A-02 RO-A-03	R-RO-A
Rock Creek Sunnyside Tributary Habitat	RO-B	246	31.80	Rock Creek tributary with ash swale riparian habitat; degraded elsewhere. Small forested upland habitat patches.	RO-B-01	R-RO-B
Rock Creek Vogel Tributary Habitat	RO-C	313	82.87	Mature forest habitat area near confluence of two stream branches. Riparian corridor fragmented by roads and development; Douglas fir dominated upland forest patches.		R-RO-C
Rock Creek Northwest Habitats	RO-D	180	64.65	Large wetland complex, linked to Johnson Creek wetland habitats to the north (this site is part of a saddle between basins). Riparian areas largely pastureland; small forest patches to north and south.	RO-D-01 RO-D-02	R-RO-D



Habitat Site	Habitat Code	Site Acres	Habitat Resource Acres	Site Description	Wetland Habitats	Riparian Habitats
Rock Creek Northeast Tributary and Butte Habitats	RO-E	752	369.20	Site contains large habitat patches and one of most significant wetlands in City. Mixed riparian forests along stream corridor. Douglas fir and bigleaf maple dominated forest habitats occur in large blocks on buttes.	RO-E-01	R-RO-E
Rock Creek and Butte Habitats	RO-F	1567	602.97	Diverse wetland, riparian and upland habitats with high number of interspersed seeps and springs. Large blocks of intact mixed forest habitats on buttes and connected to stream corridors; good quality grassland habitats connected to forest habitats. Mature cedars are common in forests throughout site.	RO-F-01 RO-F-02	R-RO-F
Sunshine Creek Habitats	SU-A	1489	303.55	Sunshine Creek riparian habitat impacted by farming, roads and development. Smaller patches of upland forest occur primarily in eastern portion of site, with limited riparian forests to the north and south. Key restoration opportunities in the wetland and stream areas.	SU-A-01 SU-A-02 SU-A-03	R-SU-A
Sunshine Creek West Tributary and Butte Habitats	SU-B	533	283.43	Mature cedar forest and large blocks of intact mixed forest habitats on "North Sunshine" butte connected to riparian habitats.		R-SU-B

Assessment Summary

The assessment resulted in a detailed mapping of habitat values within each site: high (A), medium (B), or low (C). Individual site ratings including acres of high, medium, and low habitats within each site are provided in Table 16. Consistent with the review and general recommendations of the Natural Features TST, high ranked habitats include those with the following characteristics:

- Located within Clackamas River or Lower Richardson Creek habitat corridor;
- Intact forested riparian corridor, plus adjacent mature or maturing upland forest;
- Locally significant wetlands;
- Habitats containing sensitive species;
- Contain locally rare species or habitats;
- Provide connectivity between any of the above habitats;
- High quality wildlife habitat (WHA); and
- Forested habitat in public ownership.



Medium ranked habitats generally include those that did not meet the high ranking and were:

- Mature or maturing forest outside (or with minimal connection to) riparian areas and wetlands;
- Young or low structure forest/vegetation within riparian areas or providing connection between habitats; and
- Medium quality riparian areas.

Lower ranked habitats generally include those that did not meet the other conditions and were:

- Young or low structure forest/vegetation outside riparian areas and wetlands; and
- Isolated upland habitats less than 5 acres.

The Natural Features TST also supported the concept of designating restoration opportunity sites. These sites include the following:

- Wetlands (degraded or not “locally significant” wetlands)
- Riparian Corridors (segments in degraded condition or dominated by non-native shrub/herbaceous cover)
- Uplands (degraded forest, shrub or herbaceous areas)

These habitats are mapped on the Wildlife Habitat and Riparian Corridor Map (Figure 4). Table 16 identifies habitat classes and the area of each class by habitat site. The Wildlife Habitat Assessment summary forms are contained in Appendix H of this report; as indicated above these assessments were one factor in the overall weighting of relative habitat values. These forms include summaries of potential habitat enhancement measures for each site.

Table 16. Habitat Assessment Summary

Habitat Site	Habitat Code	Habitat Classes	Acreage by Class
Badger Creek and Upland Habitats	BA-A	A	3.72
		B	40.66
Clackamas River Corridor Habitats	CL-A	A	188.74
Clackamas River Uplands	CL-B	A	5.45
		B	57.55
		C	49.75
Clackamas River Tributary Habitat	CL-C	A	1.22
		B	14.49
Deep Creek and Upland Habitats	DE-A	A	137.86
Kelley Creek/North Butler Butte Habitats	KE-A	A	406.67
		B	16.94
Noyer Creek Basin Habitats	NO-A	A	52.42
		B	185.20
		C	4.52



Habitat Site	Habitat Code	Habitat Classes	Acreeage by Class
Richardson Creek West Habitat	RI-A	A	4.03
		B	22.65
		C	4.53
Richardson Creek Confluence Habitats	RI-B	A	94.30
		B	10.95
Richardson Creek Northwest Habitat	RI-C	A	10.21
		B	39.79
		C	29.26
Richardson Creek North Habitat	RI-D	A	18.86
		B	78.66
		C	18.65
Richardson Creek Northeast Habitat	RI-E	A	4.56
		B	42.16
		C	15.82
Richardson Creek East Habitat	RI-F	A	0.95
		B	55.78
		C	5.53
Rock Creek South Tributary Habitats	RO-A	A	52.73
		B	39.29
		C	23.32
Rock Creek Sunnyside Tributary Habitat	RO-B	A	1.16
		B	25.81
		C	4.82
Rock Creek Vogel Tributary Habitat	RO-C	B	72.92
		C	9.94
Rock Creek Northwest Habitats	RO-D	A	50.55
		B	8.38
		C	5.72
Rock Creek Northeast Tributary and Butte Habitats	RO-E	A	189.74
		B	169.79
		C	9.67
Rock Creek and Butte Habitats	RO-F	A	424.07
		B	149.58
		C	29.31
Sunshine Creek Habitats	SU-A	A	42.66
		B	240.35
		C	20.54
Sunshine Creek West Tributary and Butte Habitats	SU-B	A	175.57
		B	107.86

Significant Habitat Determination

The habitat inventory is an integrated mapping of wetland, riparian and upland habitats. The Damascus Natural Features TST recommended that three gradations of habitat significance be identified, as described above: higher quality (A) habitats, medium quality (B) habitats, and relatively lower quality (C) habitats. The Natural Features TST determined that all mapped (A, B and C) habitats should be considered significant Goal 5 resources, recognizing that the



gradations of habitat quality would be a useful tool for policy-makers as they weigh the future growth needs of the community against the conservation of natural resources.

The Natural Features TST recommended further that the impact area for the Damascus inventory be the entire watershed. Under Goal 5, an “impact area” is the area within which conflicting uses could adversely affect a significant Goal 5 resource. The TST recognized that significant development within Damascus could adversely affect wetlands, streams and wildlife habitats a significant distance away. For example, urbanization could have adverse impacts on the area’s hydrology, reducing groundwater inputs to streams and wetlands and potentially drying them up over time. To address this, the TST determined that the entire watershed for any given site should be considered the impact area, so that low impact development strategies would be evaluated in the future as part of the ongoing Comprehensive Planning process.



Groundwater Resources

Inventory Methods

Goal 5 groundwater resource inventories generally entail preparation of a map based on information provided by state agencies, particularly the Oregon Water Resources Department and Oregon Department of Environmental Quality. The Oregon Water Resources Commission (OWRC) designates certain groundwater resources as critical groundwater areas or restrictively classified areas. These are two of the categories of groundwater areas that qualify as “significant” groundwater resources under Goal 5. The categories are:

- Critical groundwater areas, as designated by the OWRC;
- Restrictively classified areas, as designated by the OWRC; and
- Wellhead protection areas, as delineated by a local government or water provider.

Due to the narrow scope of Goal 5 groundwater inventories, no specific field inventory was completed for this part of the study. Field observations of groundwater features such as shallow water tables and the presence of groundwater seeps and springs were made throughout the course of the project, and these observations were generally consistent with the findings of the existing groundwater information (data and maps) reviewed as part of this study. Thus, the groundwater section of this report focuses on the review of existing information.

General information on groundwater resources in the Damascus area was available from several sources, including:

- *Rock and Richardson Creek Watershed Assessment* (Ecotrust, 2000), which includes an analysis of the hydrology of the two basins, identifying wells, discharge sites, and points of diversion;
- *Origins of the Damascus Area Buttes and Their Relationships to Regional Groundwater Recharge* (Brody-Hein, 2005), which includes an assessment of the recharge and groundwater movement in the vicinity of the buttes;
- Oregon Water Resources Department (OWRD) data, including information on the Damascus Groundwater Limited Area;
- Oregon Department of Environmental Quality (DEQ) data on groundwater drinking source areas and potential contaminant sites; and
- Oregon Department of Geology and Mineral Industries (DOGAMI) data on high groundwater areas.

Because most current water supplies are private, there are no comprehensive analyses of water resources and quality. The OWRC has classified much of the Damascus area as a Groundwater Limited Area. Under the Goal 5 administrative rule, restrictively classified areas such as the



Damascus Groundwater Limited Area are significant groundwater resources, and “local plans shall declare such areas as significant groundwater resources.”

Inventory Results

Groundwater is considered a critical resource in the Damascus area because of limited (or undefined) recharge potential to deeper aquifers and limited shallow aquifer production capacity. In addition, the DEQ Oregon Drinking Water Program lists Damascus as a Tier 1 concern due to the potential for Volatile Organic Contaminants (VOCs). As noted above, most of the study area is included in the Damascus Groundwater Limited Area (Figure 5, Groundwater Resource Map). The Sandy-Boring Ground Water Limited Area lies approximately one mile to the east.¹⁰ This Groundwater Limited Area classification generally applies to sites where heavy pumping from Columbia River Basalt and the Troutdale Formation have caused declines in local aquifers. The Groundwater Limited designation is intended to help protect existing water rights by preventing excessive ground water declines, restoring aquifer stability, and preserving aquifers with limited storage capacity for designated high public value uses. The OWRD restricts new water rights in these areas to a few designated uses.

Previous studies (Brody-Hein, 2005) indicate that soils have limited storage and infiltration capacity and most rainfall appears quickly as stream flow. As noted in earlier studies (Ecotrust, 2000), some areas of higher recharge potential and higher yield may be associated with coarser grained volcanic deposits in the butte complex, but these areas were not mapped. The U.S.G.S. Quadrangle map for Damascus (1981) includes an area identified as Elliot Springs in the lower Richardson Creek area north of Walgreen Road. Data on the capacity, quality, and potential source for this spring were not available for review.

The large number of individual water supplies reported by Ecotrust (2000) would indicate that the aquifer is generally suitable as a potable water supply.¹¹ However, based on area geology and the OWRD Groundwater Limited Area classification, it should be assumed that larger volume groundwater resources, except those that are permitted under OWRD rules, are not available in the area unless it can be demonstrated that withdrawals come from portions of the Troutdale aquifer that are not currently declining. Additional sources of water will require specific studies on the availability of deeper water sources, importation of water from outside the area, or collection and storage of rainwater.

High groundwater areas in the Damascus area have been mapped by DOGAMI, as noted in the Damascus Goal 7 Natural Hazard Report. In general the high groundwater conditions are defined as water levels being within at least 1.5 feet of the ground surface during the wet season. The conditions are a result of poorly drained or clayey soils, porous soils resting on a clay layer

¹⁰ The basis for leaving a non-limited area between the Damascus Groundwater Limited area and the Sandy-Boring Groundwater Limited is not entirely clear. It is assumed that groundwater conditions are not significantly different between the two limited areas, but this assumption has not been verified.

¹¹ Information on quality of the shallow aquifer was not available for review.



that retards infiltration, or relatively thin soils developed on gently sloping bedrock. The high groundwater areas generally include the entire City of Damascus, but some of the exceptions are:

- A few isolated slopes along the Clackamas River and other incised drainages where the slopes are extremely steep and the soils very thin;
- A few acres of bluff top areas where Boring Lava is near the ground surface, both above the Clackamas River and the top of the butte along Debora Street; and
- Some of the gravelly terraces along the Clackamas River.

As noted in the Goal 7 report, the project team's general recommendation is to assume that high groundwater will be present throughout Damascus during the wet season, and that provisions should be made to control surface and subsurface water in all new construction.

Another development-related recommendation is to map areas of high and low recharge potential for use in storm water management planning. Storm runoff routing from development has the potential to affect both shallow aquifer recharge as well as stream flows. The potentials for "green" recharge, temporary storage, stream flow enhancement, and wetland protection should be included in this assessment. It is anticipated that different storm water management approaches will be appropriate in different areas.

Significant Groundwater Resource Determination

Under Goal 5, there are three categories of groundwater areas that qualify as "significant" groundwater resources:

- Critical groundwater areas, as designated by the OWRC;
- Restrictively classified areas, as designated by the OWRC; and
- Wellhead protection areas, as delineated by a local government or water provider.

As discussed above, much of Damascus is included within one of these areas: the restrictively classified area known as the Damascus. This area, as shown on the Groundwater Inventory Map (Figure 5), reflects the area of significant Goal 5 groundwater resources in Damascus. The size of the Groundwater Limited Area within the Damascus study area is 8,805 acres.



Oregon Scenic Waterways

Overview

Oregon Scenic Waterways are treated differently from other Goal 5 resources by the state. The Goal 5 rule (OAR 660-023-0130) directs local governments to bypass the steps in the standard inventory process and simply designate Oregon Scenic Waterways as significant Goal 5 resources. Hence, the inventory of Oregon Scenic Waterways is essentially a mapping exercise to show the boundaries of the scenic waterway as defined by the state.

There is one designated Oregon Scenic Waterway (OSW) within the City of Damascus. This OSW is the Clackamas River. The scenic designation applies to the river corridor located upstream of the bridge at Carver. The designation includes the river and “related adjacent land” which is defined as “all land within one-fourth of one mile of the bank on the side of...a river or segment of river within a scenic waterway.”

Significant Oregon Scenic Waterway Determination

Under Goal 5, the inventory “shall follow only the requirements of OAR 660-023-0030(5) by designating OSWs as significant Goal 5 resources.” Hence, the inventory map of significant scenic waterways will show the river and land area within ¼ mile of river bank, upstream of the Carver bridge.

The Clackamas River Scenic Waterway and its related adjacent land is shown on the Oregon Scenic Waterway map (Figure 6). The total area of this Scenic Waterway corridor is 235 acres.

Implementation Options

In terms of the next steps for Goal 5 implementation, the City has two options. First, it may adopt a Goal 5 program for the OSW and associated corridor by following either the Economic, Social, Environmental and Energy (ESEE) standards and procedures of OAR 660-023-0040 and 660-023-0050.

The second option is to follow the “safe harbor” provisions and adopt “only those plan and implementing ordinance provisions necessary to carry out the management plan adopted by the Oregon Parks and Recreation Commission (OPRC).” The OPRC adopted a management plan for this section of the Clackamas River in October, 1985. The plan is the *Clackamas River Scenic Waterway Management Program and Background Report*, which is included in Appendix I of this report.

This ESEE approach may offer the City greater flexibility in terms of the conservation measures it chooses to implement, but the project team recommends that the City pursue this approach only after determining that the safe harbor approach will not meet the City’s needs.



Appendix A. Definitions

Anadromous Salmonids – Chum, sockeye, Chinook and Coho salmon, and steelhead and cutthroat trout that are members of the family Salmonidae and are listed as sensitive, threatened or endangered by a state or federal authority.

Basin – a topographical entity within which all the surface water draining to a single point falls; some of the surface water may have come from groundwater fed by geological strata outside the basin.

Cowardin Class – the wetland classification according to the U.S. Fish and Wildlife Service's Classification of Wetlands and Deepwater Habitats of the United States, Cowardin et al., 1979. The two primary Cowardin systems occurring in Damascus are:

- **palustrine** - freshwater (less than 0.5 parts per thousand ocean-derived salts) area dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens. They can be non-tidal or tidal. Palustrine also includes wetlands lacking this vegetation, but having the following characteristics: (1) area less than 20 acres; (2) no active wave-formed or bedrock shoreline; (3) water depth in the deepest part is less than 6.6 feet at low water.
- **riverine** - freshwater (less than 0.5 parts per thousand ocean-derived salts) areas that are contained within a channel and which are not dominated by trees, shrubs, and persistent emergents (for example, rivers and streams).

Emergent – a plant that grows rooted in shallow water, the bulk of which emerges from the water and stands vertically. Usually applied to non-woody vegetation.

Emergent Wetland – a subclass of palustrine system (see Cowardin Class above), a wetland characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens.

Enhancement – an improvement in the functions and values of an existing wetland, forest, or other natural resource.

Exotic species – -plants that are not indigenous to the Pacific Northwest (see invasive species).

Field Verification – to walk over and/or visually check an area, for example, to make a wetland determination and map wetlands (this may or may not include collecting sample plot data).

Fish habitat – those areas upon which fish depend in order to meet their requirements for spawning, rearing, food supply, and migration.

Floodplain – river valley apart from the river channel which is inundated only in a flood event, attenuating the flood discharge. The 100-year floodplain shows the flood with a 100-year recurrence interval.

Forested Wetland – a subclass of palustrine system (see Cowardin Class above), a wetland characterized by woody vegetation that is six meters (20 feet) tall or taller.

Geographic Information System (GIS) – a system of hardware, software and data storage that allows for the analysis and display of information that has been geographically referenced.

Global Positioning System (GPS) – is a navigation satellite system transmitting signals that allow GPS receivers to determine the receiver's location, speed and direction. Its primary use for the Damascus inventory is to provide accurate field position data for use in GIS (see above) to verify the location of natural features such as landslide areas, wetlands and streams.

Goal 5 – Statewide Planning Goal (OAR Chapter 660, Division 23) intended to protect natural resources and conserve scenic and historic areas and open spaces.

Goal 5 Inventory – a survey, map, or description of one or more resource sites that is prepared by a local government, state or federal agency, private citizen, or other organization and that includes information about the resource values and features associated with such sites.

Growing season – the portion of the year when soil temperatures are above biologic zero at 50 cm (19.7").

Herbaceous – with the characteristics of an herb; a plant with no persistent woody stem above ground.

Hydric soil – a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part.

Hydrogeomorphic Method or **HGM** – a scientific method of wetland classification and functional assessment based on a wetland's location in the landscape and the sources and duration of water flow. The HGM approach identifies the wetland classes present in each region, defines the functions that each class of wetlands performs, and establishes reference sites to define the range of functioning of each wetland class. **HGM class** or **subclass** means the hydrogeomorphic classification of the wetland based upon its landscape position and hydrology characteristics, according to the HGM key developed by the Division of State Lands.

Hydrology – The properties, distribution, and circulation of water.

Hydrophyte – Any plant growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content.

Hydrophytic vegetation – See hydrophyte.

Invasive species – Those species which become established easily in disturbed conditions, reproduce readily, and often establish monocultures. Most invasive plants are non-native species. Examples of common invasive species in Damascus are: Himalayan blackberry, English ivy, and reed canarygrass.

Indicator – The soil, vegetation, and hydrology characteristics or other field evidence that indicate that wetlands are present.

Indigenous Anadromous Salmonids – Chum, sockeye, Chinook and Coho salmon, and steelhead and cutthroat trout that are members of the family Salmonidae and are listed as sensitive, threatened or endangered by a state or federal authority.

Light Detection and Ranging (LIDAR) is an optical remote sensing technology which measures properties of scattered light to find range and/or other information of a distant target. Its primary use for the Damascus inventory is to map landforms and allow detailed assessment of potential landslide hazards, wetlands and streams.

Local Wetlands Inventory (LWI) – A collection of maps and information about wetlands throughout a local community that provides a planning tool for balancing the protection of wetland functions with other community needs. LWIs satisfy the requirements for wetland inventories under Statewide Planning Goal 5 (Natural Resources). Once approved, LWIs become part of the Statewide Wetlands Inventory. Mapped LWI wetland boundaries are generally accurate to within 25 feet, but may be less in areas that could not be field verified. A wetland boundary delineation may be needed to determine whether regulations apply to a particular development proposal.

Locally Significant Wetlands (LSW) – Those wetland sites that provide functions or exhibit characteristics that are pertinent to community planning decisions made at a local scale, for example, within a UGB. These wetland sites shall be identified by local governments according to the criteria and procedures in sections 141-086-0340 and 141-086-0350.

Native Plant Community – A recognized assemblage of plant species indigenous to Oregon. All such wetland plant communities are listed in the most recent version of Classification and Catalog of Native Wetland Plant Communities in Oregon (Oregon Natural Heritage Information Center).

Offsite Determination – A wetland determination conducted without field verification using NWI maps, soils maps, and aerial photographs.

Ordinary high-water mark – The line on the shore established by the fluctuations of water and indicated by physical characteristics such as: a clear, natural line impressed on the bank; changes in the character of soil or vegetation; shelving; or the presence of a line of litter or debris.

Oregon Freshwater Wetland Assessment Methodology (OFWAM) – The method adopted by the State to evaluate and rate the relative quality of a wetland by measuring its

condition and its capacity to perform certain functions, including wildlife habitat, fish habitat, water quality, and hydrologic control. The results of the OFWAM rating is used as a basis for determination of wetland significance.

OFWAM Evaluation Descriptor – a summary statement describing whether the wetland is (1) intact, (2) impacted or degraded, or (3) function is lost or not present.

Rare Plant Community – Relictual, uncommon or unique in Oregon, determined by number of occurrences and threats following national heritage program criteria (i.e., rarity ranking of G1-G3 or S1-S3).

Reach – A length of channel with uniform characteristics.

Restoration – Restoration is the process of repairing damage to the diversity and dynamics of ecosystems. Ecological restoration is the process of returning an ecosystem as closely as possible to predisturbance conditions and functions.

Riparian area – The area adjacent to a river, lake, or stream, consisting of the area of transition from an aquatic ecosystem to a terrestrial ecosystem.

Riparian corridor – A Goal 5 resource that includes the water areas, fish habitat, adjacent riparian areas, and wetlands within the riparian area boundary.

Riparian corridor boundary – An imaginary line that is a certain distance upland from the top bank.

Sample Plot – A specific area on the ground where soils, vegetation and hydrology data are recorded on a field data form in order to make a wetland determination.

Scrub-shrub Wetland – A subclass of palustrine system (see Cowardin Class above), areas dominated by woody vegetation less than 6 meters (20 feet) tall. The species include tree shrubs, young trees, and trees or shrubs that are stunted because of environmental conditions.

Significance determination – The determination of significance of a Goal 5 resource is based on:

- (a) The quality, quantity, and location information;
- (b) Supplemental or superseding significance criteria set out in OAR 660-023-0090 through 660-023-0230; and
- (c) Any additional criteria adopted by the local government, provided these criteria do not conflict with the requirements of OAR 660-023-0090 through 660-023-0230.

Stream – A channel such as a river or creek that carries flowing surface water, including perennial streams and intermittent streams with defined channels, and excluding man-made irrigation channels.

Top of bank – Has the same meaning as “bankfull stage” defined in OAR 141-085-0010(2). The stage or elevation at which water overflows the natural banks of streams or other waters of this state and begins to inundate the upland. In the absence of physical evidence, the two-year recurrence interval flood elevation may be used to approximate the bankfull stage

Wetland – an area that is inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances does support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Wetland Assessment or Functional Assessment – An evaluation and rating of the relative quality of a wetland by measuring its condition and its capacity to perform certain functions.

Wetland Boundary – A line marked on a map that identifies the approximate wetland/non-wetland boundary.

Wetland Condition – The integrity of a wetland’s physical and biological structure, which determines the wetland’s ability to perform specific functions, as well as its resilience and enhancement opportunities.

Wetland Delineation – A determination of wetland presence that includes marking the wetland boundaries on the ground and/or on a detailed map prepared by professional land survey or similar accurate methods.

Wetland Delineation Manual or 1987 Manual – Provides technical guidelines and methods to determine whether an area is a wetland for purposes of Section 404 of the Federal Clean Water Act. The objective of the Act is to maintain and restore the chemical, physical, and biological integrity of the waters of the United States.

Wetland Determination – Identification of an area as wetland or non-wetland.

Wetland Function – Characteristic action or behavior associated with a wetland that contributes to a larger ecological condition such as wildlife habitat, fish habitat, water quality, and/or flood control.

Wetland hydrology – The total of all wetness characteristics in areas that are inundated or have saturated soils for a sufficient duration to support hydrophytic vegetation.

Wetland Indicator Status – Categories of plant species based upon the estimated probabilities (expressed as a frequency of occurrence) of a species occurring in a wetland or non-wetland. Wetland indicator status (WIS) includes the following:

- Obligate (OBL): species that almost always occur in wetlands under natural conditions (estimated probability >99%).
- Facultative wetland (FACW): species that usually occur in wetlands (estimated probability 67 to 99%), but are occasionally found in non-wetlands.

- Facultative (FAC): Species that are equally likely to occur in wetlands or non-wetlands (estimated probability 34 to 66%).
- Facultative upland (FACU): species that usually occur in non-wetlands (estimated probability 67 to 99%), but are occasionally found in wetlands.
- Upland (UPL): species that almost always occur in non-wetlands under normal conditions (estimated probability >99%).
- Not listed (NL): species that are not listed and are presumed to be upland species.
- No indicator status (NI): species that have not yet been evaluated.

A (+) or (-) following the WIS signifies a greater or lesser likelihood of being found in wetland condition.

Wetland Mosaic – A complex of several wetlands smaller than one-half (0.50) acres in size each that are interspersed between areas of non-wetland.

Wildlife Habitat – an area upon which wildlife depend in order to meet their requirements for food, water, shelter, and reproduction.

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Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: BA-A-01	Method: Offsite
Wetland Size: 3.71 acres	Field Date(s): 3/16/2007
Cowardin Class: PEM	Data Plot #: Off Site
HGM Class: RFT, F	Investigators: T. Brooks, A.C. Smyth

LOCATION

Street/landmark: West of Highway 26; south of Stone Rd., Sheet A7
Legal description: T.1S., R.3E., Section 25; Lot ____
Basin/sub-basin: Johnson Creek/Badger Creek

WETLAND CHARACTERISTICS

<p>Description: This feature is a broad swale through a pasture with some areas of PFO downstream. The plant community where the wetland was observed consisted of a reed canarygrass monoculture; to the north and south, the plant community became more varied, both in terms of strata and species though the species were not discernable from a distance: common rush, willows and Oregon ash. The site is the subject of a DSL review (file #ENF-3899).</p> <p>Soils: Wapato silty clay loam, 0 to 3 percent slopes</p> <p>Hydrologic Source: Surface flow and direct precipitation</p> <p>Dominant Vegetation:</p>		
Trees	Shrubs	Vines/Herbs
		reed canarygrass

<p>Potential Enhancement Opportunities:</p> <p>The area is currently used for grazing/hay. Enhancement opportunities would require the cooperation of the landowner. Potential enhancement measures would include:</p> <ul style="list-style-type: none"> - a removal of noxious species - supplemental planting of native species – species diversity, habitat

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: CL-A-01	Method: Onsite
Wetland Size: 2.7 acres	Field Date(s): 3/1/07, 4/4/07
Cowardin Class: PEM, PSS, PFO, POW	Data Plot #s: 1 - 5
HGM Class: RFT	Investigators: T. Brooks, A.C. Smyth, M. Bushman, R. Ruggiero

LOCATION

Street/landmark: South of Hwy. 224 and Eilers Circle; Sheet G2
Legal description: T.2S., R.3E., Section 18; TL 600
Basin/sub-basin: Clackamas River

WETLAND CHARACTERISTICS

Description: This feature is a backwater complex fed by a combination of river water backflow during periods of high flow and streamflow from adjacent higher ground. The wetland includes interspersed backwater sloughs, open water ponds, and streams all connected along two lineal corridors. The vegetation is a combination emergent, scrub-shrub and forested community dominated by red alder, black cottonwood, dogwood, reed canarygrass, tall fescue and soft rush. Previously mapped wetlands (DET 02-0606) at this site have evolved into the current configuration due to bank armoring and recent floods (see Plot #5 in former wetland). The bank has been armored with sheet pile and riprap through this reach of the river.

Soils: Cloquato silt loam, 0-3% slopes; and Wapato silt loam 0-3% slopes

Hydrologic Source: Clackamas River

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
black cottonwood	red osier dogwood	tall fescue
red alder		soft rush
		reed canary grass

Potential Enhancement Opportunities:

- supplemental planting of trees, shrubs – thermal cover, soil stabilization, habitat
- supplemental planting of groundcover – soil stabilization, species diversity

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: CL-A-02	Method: Onsite
Wetland Size: 0.69 acre	Field Date(s): 3/1/2007
Cowardin Class: PEM, PSS, POW	Data Plot #s: 1 – 4
HGM Class: RFT	Investigators: T. Brooks, A.C. Smyth, R. Ruggiero

LOCATION

Street/landmark: South of Hwy. 224 and Eilers Circle; Sheet G2
Legal description: T.2S. R.3E., Section 18; Lots _____
Basin/sub-basin: Clackamas River

WETLAND CHARACTERISTICS

Description: This feature is a backwater complex fed by a combination of river water backflow during periods of high flow and streamflow from adjacent higher ground. Vegetation is a combination of scrub-shrub, emergent, and open-water marshes dominated by willows, red alder, and reed canarygrass, with Himalayan blackberry present at the margins and in adjacent uplands.

Soils: Riverwash

Hydrologic Source: Clackamas River; unnamed small tributaries

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
red alder	willows	reed canarygrass
		Himalayan blackberry

Potential Enhancement Opportunities:

-- removal of noxious species (Himalayan blackberry and reed canarygrass)

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: CL-A-03	Method: Off site
Wetland Size: 1.35 acres	Field Date(s): N/A
Cowardin Class: PEM	Data Plot #s: Off site
HGM Class: S	Investigators: N/A

LOCATION

Street/landmark: West of Hwy. 224 near river; Sheet G1
Legal description: T.2S. R.2E., Section 13; TL _____
Basin/sub-basin: Clackamas River

WETLAND CHARACTERISTICS

<p>Description: This site consists of a group of shallow swales and depressional wetlands generally dominated by reed canarygrass and stinging nettle with some areas of red-osier dogwood, red alder, and Pacific willow. The wetlands were delineated in 2004 as part of file WD# 04-0263. No access or off-site viewing was possible as part of the present study. The area mapped on the LWI is slightly larger than the 2004 delineation, which noted wetland "extends outside the study area."</p> <p>Soils: Newberg loam, 0-3% slopes</p> <p>Hydrologic Source: upslope seepage, surface flow</p> <p>Dominant Vegetation:</p>		
Trees	Shrubs	Vines/Herbs
red alder	red-osier dogwood	reed canarygrass
Pacific willow		stinging nettle

<p>Potential Enhancement Opportunities:</p> <ul style="list-style-type: none"> - noxious vegetation removal
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Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code:	NO-A-01	Method:	Onsite
Wetland Size:	12.92 acres	Field Date(s):	3/9/07, 3/16/07
Cowardin Class:	PFO, PSS, PEM	Data Plot #s:	1- 2
HGM Class:	S/F	Investigators:	T. Brooks, AC Smyth

LOCATION

Street/landmark:	North of Hoffmeister Rd., west of 242 nd ; Sheet D5
Legal description:	T.2S., R.3E., Section 3; TL _____
Basin/sub-basin:	Clackamas River / Noyer Creek

WETLAND CHARACTERISTICS

Description: This feature lies in the northwest portion of the Noyer Creek watershed. The dominant vegetation includes a moderate cover of Oregon ash and red alder in the overstory, heavy shrub cover provided by red-osier dogwood and Himalayan blackberry, and a variable herbaceous layer, dominated here by creeping buttercup. Surface flow from offsite diffuses through this area, creating a mosaic of surface ponding and subsurface soil saturation.

Adjacent uplands are dominated by Douglas fir, which, with the presence or absence of redox features, defines the wetland boundary at this location. Red alder and red-osier dogwood cross the wetland boundary.

Soils: Delena silt loam, 3 to 12 percent slopes

Hydrologic Source: Groundwater seepage; some surface flow from offsite

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
Oregon ash	red osier dogwood	Himalayan blackberry
red alder		creeping buttercup

Potential Enhancement Opportunities:

- Removal of Himalayan blackberry and other noxious species.

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code:	NO-A-02	Method:	Offsite
Wetland Size:	13.96 acres	Field Date(s):	3/9/07
Cowardin Class:	PFO, PEM	Data Plot #s:	Off Site
HGM Class:	S/F	Investigators:	T. Brooks, R. Ruggiero

LOCATION

Street/landmark: South of Hoffmeister Rd., west of 242nd; Sheet D5
Legal description: T.2S., R.3E. Section 3; TL _____
Basin/sub-basin: Clackamas River / Noyer Creek

WETLAND CHARACTERISTICS

Description: This feature is a palustrine emergent marsh dominated by a blend of soft rush and tall fescue. The margin transitions to a palustrine forested condition with Oregon ash and black cottonwood as the dominant species. Red-osier dogwood is also a dominant in this wetland. The southern part of the wetland was apparently recently cleared of trees but conditions there were not visible. From what could be viewed from off site, the NWI mapping appeared reasonably accurate and was retained as shown.

Soils: Delena silt loam, 3 to 12 percent slopes

Hydrologic Source: Stream flow and direct precipitation

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
Oregon ash	red osier dogwood	tall fescue
black cottonwood (margin)		soft rush

Potential Enhancement Opportunities:

- supplemental planting of trees, shrubs – thermal cover, habitat
- supplemental planting of groundcover – soil stabilization, species diversity

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code:	NO-A-03	Method:	Onsite
Wetland Size:	11.18 acres	Field Date(s):	3/13/07, 5/16/07
Cowardin Class:	PEM, PFO, POW	Data Plot #s:	1 - 2
HGM Class:	RFT, SV	Investigators:	A. C. Smyth, M. Bushman, T. Brooks

LOCATION

Street/landmark:	North of Hoffmeister Rd., east of 242 nd ; Sheet D6
Legal description:	T.2S., R.3E., Section 2; TL 600
Basin/sub-basin code:	Clackamas River / Noyer Creek

WETLAND CHARACTERISTICS

Description: This site lies alongside Noyer Creek. An impoundment was recently removed from the stream, allowing water to fall to a lower level than was previously present. Consequently, the Riverine Flowthrough component of the wetland is now limited to the area immediately adjacent to the stream. Wetland vegetation extends well up the slope from the streambank; this portion of the wetland is driven by groundwater discharge and direct precipitation. The vegetation community is dominated by bentgrass, bird's-foot trefoil, soft rush, and patches of Himalayan blackberry. Increased presence of blackberry, English hawthorn, quackgrass, and presence of sweet vernalgrass are indicative of drier conditions. The eastern portion of the wetland includes ash forest and emergent (pasture) components.

Soils: Delena silt loam, 3 to 12 slopes

Hydrologic Source: creek; surface flow, groundwater discharge

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
Oregon ash	Douglas spirea	bird's-foot trefoil
		reed canarygrass
		quackgrass

Potential Enhancement Opportunities:

- noxious vegetation removal
- replant bare areas exposed by dropping the water level to stabilize substrate
- increase cover over stream and in buffer to reduce heat gain, extend habitat and movement corridor

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: NO-A-04	Method: Offsite
Wetland Size: 1.22 acres	Field Date(s): 4/4/2007
Cowardin Class: PFO	Data Plot #: Off Site
HGM Class: RFT	Investigators: T. Brooks, A. C. Smyth

LOCATION

Street/landmark: North of Hwy. 212, west of 232 nd ; Sheet E5
Legal description: T.2S., R.3E., Section 3; TL _____
Basin/sub-basin code: Clackamas River / Noyer Creek

WETLAND CHARACTERISTICS

Description: This feature is a broad area of shallow inundation. This is the headwaters of a western branch of Noyer Creek. Water is backed up by a driveway then conveyed by culvert to a ditched segment of stream. The forested character extends upstream to Highway 212. The plant community has multiple strata and a variety of subdominant species.

Soils: Delena silt loam, 0-3% slopes

Hydrologic Source: groundwater seepage, streamflow

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
Oregon ash	Douglas spirea	corn lily
	peafruit rose	creeping buttercup

Potential Enhancement Opportunities:

- noxious vegetation removal

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RI-A-01	Method: Offsite
Wetland Size: 1.39 acres	Field Date(s): 4/4/2007
Cowardin Class: PEM	Data Plot #: Off Site
HGM Class: RFT	Investigators: T. Brooks, A. C. Smyth

LOCATION

Street/landmark: East of Tong Rd, south of Keller Rd; Sheet F3
Legal description: T.2S., R.3E., Section 8; Lot _____
Basin/sub-basin: Clackamas River / Richardson Creek

WETLAND CHARACTERISTICS

<p>Description: This feature occurs on a gentle slope that fans out at the low end. The wetland comprises a narrow swale that bells out into a larger wet area at the low end of the topographic feature. The vegetation consists of pasture grasses (likely a <i>Poa - Agrostis</i>) and minor component of sedges and rushes with occasional clumps of peafruit rose and Himalayan blackberry occurring mainly on the periphery. The low end of the feature is bordered by a Douglas fir forest with a nearby mapped tributary to Richardson Creek. Soil survey notes area as "wet spot."</p> <p>Soils: Bornstedt silt loam, 0 to 3 percent slopes</p> <p>Hydrologic Source: Stream flow; some seepage from adjacent slope</p> <p>Dominant Vegetation:</p>		
Trees	Shrubs	Vines/Herbs
	Peafruit rose	Pasture grasses
		Himalayan blackberry

Potential Enhancement Opportunities: Current land use is livestock-related and current functions are low. Enhancement opportunities would require homeowner cooperation to alter the existing use or isolate the resource from those activities. Opportunities include the following:

- elimination of noxious weeds
- supplemental planting of trees, shrubs
- supplemental planting of groundcover
- treatment of roadway runoff prior to discharge to the swale
- preservation of headwater hydrology sources

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RI-C-01	Method: Off Site
Wetland Size: 4.67 acres	Field Date(s): 3/9/07, 3/21/07
Cowardin Class: PEM	Data Plot #s: Off Site
HGM Class: S/F	Investigators: T. Brooks, A. Smyth, R. Ruggiero

LOCATION

Street/landmark: West of Foster Road, north of Sunnyside Road; Sheet E3
Legal description: T.2S. R.3E., Section 5; Lot _____
Basin/sub-basin: Clackamas River / Richardson Creek

WETLAND CHARACTERISTICS

<p>Description: A large reed canarygrass dominated wetland extending north of Sunnyside Road. Wetland appears fed by two small drainageways, and by precipitation and groundwater seepage. Sunnyside Road and driveway may act as a berm, restricting outflow before discharge to culvert. Saturated soils with patchy ponding were visible in March. Soils are mapped hydric.</p> <p>Soils: Borges silty clay loam, 0 to 8 percent slopes</p> <p>Hydrologic Source: Direct precipitation; groundwater discharge</p> <p>Dominant Vegetation:</p>		
Trees	Shrubs	Vines/Herbs
Oregon ash	red-osier dogwood	reed canarygrass

<p>Potential Enhancement Opportunities:</p> <p>Portions of wetland are highly compacted or bare ground as a result of livestock grazing. Isolation of portions of wetlands from these activities would provide some enhancement. Other opportunities include:</p> <ul style="list-style-type: none"> - elimination of reed canarygrass - planting of trees and shrubs

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RI-C-02	Method: Offsite
Wetland Size: 1.73 acres	Field Date(s): 3/9, 3/21/2007
Cowardin Class: PEM, PSS	Data Plot #s: Off Site
HGM Class: RFT	Investigators: T. Brooks, A. Smyth

LOCATION

Street/landmark: North of Hwy. 212, near Red Dirt Ln.; Sheet E3
Legal description: T.2S., R.3E, Section 8, Lot 5; Lot _____
Basin/sub-basin: Clackamas River / Richardson Creek

WETLAND CHARACTERISTICS

Description: This wetland has a variety of strata with relatively good interspersions of wetland types. Scrub-shrub component is dominated by red-osier dogwood (northern end). Emergent component is dispersed through wetland, but dominated by slough sedge near Hwy. 212. Some noxious species are present and heavy in places. Wetland fed in part by stream from wetland RI-C-01. Boundary defined by vegetation and topography. Wetland was part of a DSL review (file ENF-3688).

Soils: Borges silt loam

Hydrologic Source: Stream flow

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
Oregon ash	red-osier dogwood	slough sedge
weeping willow		

Potential Enhancement Opportunities:

- elimination of noxious weeds and replanting of bare areas

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RI-D-01	Method: Offsite
Wetland Size: 1.19 acres	Field Date(s): 3/21/2007
Cowardin Class: PEM, PSS	Data Plot #: Off Site
HGM Class: RFT	Investigators: T. Brooks, A. C. Smyth

LOCATION

Street/landmark: West of Wiese, south of Alder Springs Ct.; Sheet E3
Legal description: T.2S., R.3E., Section 4, Lots _____
Basin/sub-basin: Clackamas River / Richardson Creek

WETLAND CHARACTERISTICS

Description: This feature is a narrow, incised drainage with a wetland margin. Wetland hydrology is driven by high flows into the narrow floodplain and groundwater support from hyporheic flows. Vegetation in the areas subject to flooding consists of red alder, salmonberry, and lawn/pasture grasses (likely blue- and bentgrasses). Adjacent uplands are dominated by red alder, red elderberry, and Himalayan blackberry. Douglas fir, osoberry, and sword fern are subdominant in the uplands. Lower section of wetland widens before being constrained by fills/embankments associated with development and parking areas. Lower section was mapped as part of DET 99-0117.

Soils: Cascade silt loam

Hydrologic Source: Stream flow

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
red alder	salmonberry	grasses

Potential Enhancement Opportunities:

- elimination of noxious weeds
- stabilization of upstream sediment sources
- treatment of roadway runoff prior to discharge to the stream

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RI-D-02	Method: Offsite
Wetland Size: 1.61 acres	Field Date(s): 4/4/2007
Cowardin Class: PEM, PSS, POW	Data Plot #: Off Site
HGM Class: RFT	Investigators: T. Brooks, A. C. Smyth

LOCATION

Street/landmark: South of Old Barn Ln, East of Royer Rd, Sheet E4
Legal description: T.2S. R.3E. Section 60; Lots _____
Basin/sub-basin: Clackamas River / Richardson Creek

WETLAND CHARACTERISTICS

<p>Description: Stream-associated wetland with 2-3 on-line, excavated ponds. Outside of ponds (open water), scrub-shrub area is dominated by a willow thicket. Slough sedge and skunk cabbage visible in part of emergent area. Exposed soils of low chroma and many redox. features.</p> <p>Soils: Bornstedt silt loam, 0-8% slopes</p> <p>Hydrologic Source: Stream flow</p> <p>Dominant Vegetation:</p>		
Trees	Shrubs	Vines/Herbs
	willow	slough sedge
	Douglas spirea	

<p>Potential Enhancement Opportunities:</p> <ul style="list-style-type: none"> - supplemental planting of trees, shrubs – thermal cover, habitat - supplemental planting of groundcover to improve diversity - removal of noxious species in the riparian area

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RI-E-01	Method: Onsite
Wetland Size: 2.13 acres	Field Date(s): 3/16/07
Cowardin Class: PEM, PSS	Data Plot #: 1 – 2
HGM Class: RFT, SH	Investigators: T. Brooks, A. C. Smyth

LOCATION

Street/landmark: North of Hwy 212, west of 232 nd , Sheet E4
Legal description: T.2S. R.3E. Section 4; Lots _____
Basin/sub-basin: Clackamas River / Richardson Creek

WETLAND CHARACTERISTICS

<p>Description: This feature is broad swale along an unnamed tributary to Richardson Creek. The wetland is dominated by reed canarygrass, with a central thicket of willows. The primary water source is the stream. Highway 212 creates a partial impoundment slowing water outflow. Soils were marginal but wetland may have developed fairly recently as a result of a failed Highway 212 culvert.</p> <p>Soils: Bornstedt silt loam, 0-8% slopes</p> <p>Hydrologic Source: Stream flow</p> <p>Dominant Vegetation:</p>		
Trees	Shrubs	Vines/Herbs
	willow	reed canarygrass

<p>Potential Enhancement Opportunities:</p> <ul style="list-style-type: none"> - noxious vegetation removal - increase cover over stream and in buffer to reduce heat gain, provide habitat and movement corridor

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RO-A-01	Method: Onsite
Wetland Size: 0.81 acre	Field Date(s): 3/9/2007
Cowardin Class: PEM	Data Plot #s: 1 – 2
HGM Class: RFT	Investigators: T. Brooks, R. Ruggiero

LOCATION

Street/landmark: South of Hwy. 212, west of Venice Ridge; Sheet F1
Legal description: T.2S., R.2E., Section 12; Lots _____
Basin/sub-basin: Clackamas River / Rock Creek

WETLAND CHARACTERISTICS

<p>Description: Stream corridor with braided channels dominated by reed canarygrass and field horsetail. Red alder and Himalayan blackberry are located at the fringes. Recent sediment deposits were observed at this location. Boundary defined by topographic drainage as floodplain transitions to steeper slopes of ravine walls. Upper end of wetland within parkland.</p> <p>Soils: Woodburn silt loam, 3 to 8 percent</p> <p>Hydrologic Source: stream flow</p> <p>Dominant Vegetation:</p>		
Trees	Shrubs	Vines/Herbs
red alder	Himalayan blackberry	field horsetail
		reed canarygrass

<p>Potential Enhancement Opportunities:</p> <ul style="list-style-type: none"> - sediment stabilization – source is upstream - noxious vegetation removal

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RO-A-02	Method: Onsite
Wetland Size: 1.86 acres	Field Date(s): 3/9/07, 4/4/07
Cowardin Class: PFO, PEM	Data Plot #: 1 – 2
HGM Class: SV	Investigators: T. Brooks, A. C. Smyth, R. Ruggiero

LOCATION

Street/landmark: East of Hwy 212-Hwy 224 intersection; Sheet F1
Legal description: T.2S., R.2E., Section 12; Lots _____
Basin/sub-basin: Clackamas River / Rock Creek

WETLAND CHARACTERISTICS

<p>Description: This feature consists of a Pacific willow – red alder – black cottonwood forest with willows in the understory. Groundcover consists of creeping buttercup and stinging nettle. The trees are generally young. Beaver have been active in this area. It appears that the adjacent stream may occasionally flood into the wet margins, but the primary hydrology source is seepage from the upslope side. Site subject to a prior DSL permit review (file #RP 8686); construction has altered wetland configuration.</p> <p>Soils: Woodburn silt loam</p> <p>Hydrologic Source: Groundwater discharge from adjacent slopes</p> <p>Dominant Vegetation:</p>		
Trees	Shrubs	Vines/Herbs
Pacific willow	willows	creeping buttercup
red alder		
black cottonwood		

<p>Potential Enhancement Opportunities:</p> <p>This area lies between two major roadways and is also a utility corridor. Enhancement opportunities are limited to the removal of noxious species where present.</p>

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RO-A-03	Method: Onsite
Wetland Size: 3.47 acres	Field Date(s): 4/4/2007
Cowardin Class: POW, PEM	Data Plot #s: 1 – 2
HGM Class: RFT	Investigators: T. Brooks, A.C. Smyth

LOCATION

Street/landmark: North of Orchard View Ln; Sheet F1
Legal description: T.2S. R.2E. Section 12; Lots _____
Basin/sub-basin: Clackamas River / Rock Creek

WETLAND CHARACTERISTICS

<p>Description: This feature comprises the riparian corridor around Rock Creek. Dominant vegetation in the wetland area is tall mannagrass with small amounts of American speedwell, skunk cabbage, and other hydrophytes. Above the sharp topographic break, the uplands are dominated by Himalayan blackberry (which exceeded 90 percent cover before the recent work to remove it) and weedy annuals. Some mature trees persist in the riparian corridor in this reach and are heavier upstream – species include western red cedar, bigleaf maple, Oregon ash, and Douglas fir. The open water component includes a large excavated pond that is a landscape feature for a housing development and hydrologically connected to the emergent wetland.</p> <p>Soils: Bornstedt silt loam</p> <p>Hydrologic Source: Surface flow and direct precipitation</p> <p>Dominant Vegetation:</p>		
Trees	Shrubs	Vines/Herbs
		tall mannagrass

<p>Potential Enhancement Opportunities:</p> <p>Much of the adjacent riparian areas are developed and planted with lawn grass and ornamental species. Enhancement opportunities would require the cooperation of the landowner.</p> <ul style="list-style-type: none"> - removal of noxious species - supplemental planting of native species – species diversity, habitat, water quality - buffer plantings to slow lawn runoff and absorb nutrients, pesticides

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RO-B-01	Method: Offsite
Wetland Size: 1.16 acres	Field Date(s): 3/21/07
Cowardin Class: PFO	Data Plot #s: Off Site
HGM Class: RFT	Investigators: T. Brooks; A. C. Smyth

LOCATION

Street/landmark: South and east of Brent Ave; Sheet E2
Legal description: T.2S. R.3E. Section 6; Lots _____
Basin/sub-basin: Clackamas River / Rock Creek

WETLAND CHARACTERISTICS

<p>Description: This feature is an ash swale along an unnamed tributary to Rock Creek. The channel is sinuous and braided in areas, and the wetland generally extends out to the edge of the channel migration zone. Small open water areas were visible from off-site; at least one of these is an on-line excavated pond. With observation limited to Brent Street, upstream, downstream, and eastern boundaries were approximated.</p> <p>Soils: Cascade silt loam, 3-8% slopes</p> <p>Hydrologic Source: stream flow</p> <p>Dominant Vegetation:</p>		
Trees	Shrubs	Vines/Herbs
Oregon ash		reed canarygrass

<p>Potential Enhancement Opportunities:</p> <ul style="list-style-type: none"> - noxious vegetation removal - increase cover over stream and in buffer to reduce heat gain, extend habitat and movement corridor
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Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RO-D-01	Method: Offsite
Wetland Size: 26.86 acres	Field Date(s): 3/6/2007
Cowardin Class: PEM, PFO, POW	Data Plot #s: 1 - 3
HGM Class: SH	Investigators: M. Bushman; T. Brooks; A. C. Smyth

LOCATION

Street/landmark: West of Foster, north of Hemrick Rd; Sheet B2
Legal description: T.1S., R.3E. Sections 30, 70; Lots _____
Basin/sub-basin: Clackamas River / Rock Creek

WETLAND CHARACTERISTICS

Description: This unit consists of a broad swale dominated by a herbaceous plant community. Reed canarygrass, soft rush, and bird's-foot trefoil dominate the swale area and the adjacent side slopes affected by groundwater discharge. The area above the groundwater discharge zone is dominated by Himalayan blackberry and Canada thistle. Smaller open water areas exist in the form of excavated ponds and one ash forest area has been preserved near the north end of the wetland.

Soils: Huberly silt loam

Hydrologic Source: Seepage, some surface flow from side slopes

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
		reed canarygrass
		bird's-foot trefoil
		soft rush
		creeping bentgrass

Potential Enhancement Opportunities: Currently, this area is in active use, in part as pasture. Any enhancement actions would require owner cooperation to change land use practices. Opportunities include the following:

- elimination of noxious weeds
- supplemental planting of trees, shrubs along stream
- supplemental planting of groundcover
- expansion of riparian corridor with native plantings in wetlands and uplands
- ash forest area may provide a useful reference site for restoration activities

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RO-D-02	Method: Offsite
Wetland Size: 2.19 acres	Field Date(s): 3/6/2007
Cowardin Class: PEM	Data Plot #s: Off Site
HGM Class: RFT	Investigators: A. C. Smyth, M Bushman

LOCATION

Street/landmark: Stream passes under driveway south of Hemrick Road; Sheet B2
Legal description: T.1S. R.3E., Section 31; Lots _____
Basin/sub-basin: Clackamas River / Rock Creek

WETLAND CHARACTERISTICS

<p>Description: This feature consists of a wetland margin vegetated with reed canarygrass (<i>Phalaris arundinacea</i>) and pasture grasses around a small area that is likely permanently ponded. The stream flows from north to south under a culverted gravel driveway. The wetland areas are variable in width depending upon the steepness of the adjacent sideslopes and the contribution of hydrology from subsurface discharge. The hydrology source is primarily stream flow, supplemented by some seepage on the west slope. The wetland boundary is defined by the absence of visible surface seepage from upslope and the transition from a <i>Phalaris</i>-dominated community to one dominated by a pasture grass-weedy forb assemblage.</p> <p>Soils: Huberly silt loam, 0 to 3 percent slopes</p> <p>Hydrologic Source: Stream flow; some seepage from adjacent slope</p> <p>Dominant Vegetation:</p>		
Trees	Shrubs	Vines/Herbs
		Reed canarygrass

<p>Potential Enhancement Opportunities:</p> <p>Opportunities include the following:</p> <ul style="list-style-type: none"> - elimination of noxious weeds - supplemental planting of trees, shrubs – thermal cover, habitat - supplemental planting of groundcover – soil stabilization
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Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RO-E-01	Method: Onsite
Wetland Size: 19.43 acres	Field Date(s): 3/16/2007
Cowardin Class: PEM / PFO / POW	Data Plot #s: 1 - 2
HGM Class: RFT / SV	Investigators: M. Bushman T. Brooks, A. C. Smyth, R. Ruggiero

LOCATION

Street/landmark: East of Foster at Hemrick Rd; Sheet B2-B3
Legal description: T.1S. R.3E. Section 29; Lots _____; TL 100
Basin/sub-basin: Clackamas River / Rock Creek

WETLAND CHARACTERISTICS

Description: The majority of this wetland consists of a cottonwood forest that was inaccessible but reviewed as part of DET 99-0021 and DET 96-0242. Access was provided to a portion of the wetland on a long slope down to a drainage. The slope is a grazed pasture dominated by bird's-foot trefoil, white clover, and creeping bentgrass. The riparian margin is dominated by black cottonwood and Himalayan blackberry, with a complex herbaceous community with pasture grasses and native wetland sedges and rushes. This area receives some overbank flow from the waterway in addition to hydrology from the slope wetland above the area influenced by the stream.

Soils: Powell silt loam, 0 to 8 percent slopes

Hydrologic Source: Seepage, some surface flow from precipitation

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
Black cottonwood		Kentucky bluegrass
		bird's-foot trefoil
		Himalayan blackberry
		creeping bentgrass

Potential Enhancement Opportunities: Currently, a portion of this wetland is in active use as a horse pasture. Any enhancement actions would require owner cooperation to change land use practices. Opportunities include the following:

- elimination of noxious weeds
- supplemental planting of trees, shrubs along stream
- supplemental planting of groundcover
- expansion of riparian corridor with native plantings in wetlands and uplands

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RO-F-01	Method: Off site
Wetland Size: 1.14 acres	Field Date(s): 3/16/2007
Cowardin Class: PEM / PFO	Data Plot #: Off site
HGM Class: RFT	Investigators: M. Bushman R. Ruggiero

LOCATION

Street/landmark: West of 22 nd , north of Tillstrom Rd; Sheet C4
Legal description: T.1S., R.3E., Section 33; Lots _____
Basin/sub-basin: Clackamas River / Rock Creek

WETLAND CHARACTERISTICS

<p>Description: This feature includes an emergent component dominated by slough sedge and cattail, and a forested area comprised mostly of cottonwood. Water enters site in a small drainage from 222nd Avenue. This site was mapped on NWI, and modified here based on off-site observation and LiDAR.</p> <p>Soils: Cascade silt loam, 15 – 30 % slopes</p> <p>Hydrologic Source: stream flow</p> <p>Dominant Vegetation:</p>		
Trees	Shrubs	Vines/Herbs
black cottonwood		slough sedge
		cattails
<p>Potential Enhancement Opportunities:</p> <p>- increase cover over stream and in buffer west of 222nd Avenue</p>		

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: RO-F-02	Method: Onsite
Wetland Size: 3.96 acres	Field Date(s): 3/16/2007
Cowardin Class: PEM / PFO	Data Plot #: 1 - 4
HGM Class: RFT / SV	Investigators: M. Bushman R. Ruggiero

LOCATION

Street/landmark: East end of Heuke Rd; Sheet C3
 Legal description: T.1S., R.3E., Section 38; Lots ____; TL 400
 Basin/sub-basin: Clackamas River / Rock Creek

WETLAND CHARACTERISTICS

Description: A stream-associated wetland with varied topographic and hydrologic elements. Emergent area includes a low lying reed canarygrass terrace north of the stream and a slope wetland fed by multiple seeps to the south. An alder forest wetland continues along the stream to the east. Seeps are common in this area and other seep-fed wetlands may exist nearby.

Soils: Delena silt loam, 3 to 12 percent slopes

Hydrologic Source: Seepage; lower areas influenced by stream flow

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
red alder	Himalayan blackberry	Kentucky bluegrass
		reed canarygrass

Potential Enhancement Opportunities:

Opportunities include the following:

- elimination of noxious weeds in riparian area
- supplemental planting of trees, shrubs – thermal cover, habitat
- supplemental planting of groundcover - erosion control
- reduce spraying of lower section of Christmas tree farm to lesson potential impacts on water quality and aquatic life. Avoid all spraying within 50' of streams and tributaries.

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: SU-A-01	Method: Off site
Wetland Size: 1.39 acres	Field Date(s): 3/4/2007
Cowardin Class: PEM, POW	Data Plot #: Off site
HGM Class: SH	Investigators: T Brooks, R Ruggiero

LOCATION

Street/landmark: West of 250 th at Victoria St; Sheet C6
Legal description: T.1S., R.3E., Section 35; Lots _____ TL 800
Basin/sub-basin: Johnson Creek / Sunshine Creek

WETLAND CHARACTERISTICS

Description: This wetland formed below drain tile outfalls. The vegetation community has a Kentucky bluegrass (*Poa palustris*) – tall fescue (*Festuca arundinacea*) dominated herbaceous layer. Patches of willow occur near the center and at the edges of the wetland. Wetland conditions are well defined by topography and a transition to a drier community dominated by Himalayan blackberry and English ivy.

Soils: Cascade silt loam, 8 to 15 percent slopes

Hydrologic Source: Precipitation and runoff collected by drain tile and discharged.

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
	Pacific willow	Kentucky bluegrass
		Tall fescue

Potential Enhancement Opportunities: Adjacent land use is farming and current functions are limited. Opportunities include the following:

- supplemental planting of trees, shrubs – thermal cover, habitat
- supplemental planting of groundcover – soil stabilization, diversity

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: SU-A-02	Method: Onsite
Wetland Size: 25.48 acres	Field Date(s): 3/6/2007
Cowardin Class: PFO, PEM	Data Plot #s: 1 – 4
HGM Class: SV, RFT	Investigators: A. C. Smyth, M Bushman

LOCATION

Street/landmark: East of 242 nd , north of Sunshine Valley Rd; Sheet B6
Legal description: T.1S., R.3E., Section 26; Lots ____; TL 200; TL 400
Basin/sub-basin: Johnson Creek / Sunshine Creek

WETLAND CHARACTERISTICS

Description: This feature consists of Sunshine Creek and its adjacent wetlands. The stream flows south through pasture used for hay production. The wetland margin immediately adjacent to Sunshine Creek receives some overbank flows and is classified as PEM/RFT. This margin supports some pasture grasses but has large bare areas near the stream. To the east is a large PEM / SV wetland fed by groundwater discharge and a spring. This broad wetland is dominated by a herbaceous community whose main components are tufted hairgrass (*Deschampsia cespitosa*), soft rush (*Juncus effusus*), redtop (*Agrostis gigantea*), and slough sedge (*Carex obnupta*).

Some small forested inclusions are also present. These are dominated by Oregon ash and slough sedge with areas of red alder, Himalayan blackberry, and pasture grasses. The stream channel shows signs of downcutting and channel erosion, possibly a result of changes in hydroperiod and water quantity.

Soils: Delena silt loam, 3 to 12 percent slopes

Hydrologic Source: Stream flow immed. adjacent to stream; aquifer discharge above.

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
Oregon ash	Himalayan blackberry	tufted hairgrass
red alder		soft rush
		Redtop
		slough sedge

Potential Enhancement Opportunities: Current land use is hay production and current functions are low. Enhancement opportunities would require homeowner cooperation to alter the existing use or isolate the resource from those activities. Opportunities include the following:

- elimination of noxious weeds
- supplemental planting of trees, shrubs – thermal cover, habitat
- supplemental planting of groundcover in bare areas – soil stabilization
- hydraulics analysis to mitigate effects of changes in hydroperiod

Damascus Goal 5 Inventory

Wetland Characterization Sheet



GENERAL INFORMATION

Wetland Code: SU-A-03	Method: Onsite
Wetland Size: 1.16 acres	Field Date(s): 2/22, 3/6/2007
Cowardin Class: PEM, PSS	Data Plot #s: 1, 2, 3
HGM Class: SV, RFT	Investigators: T. Brooks, A Smyth M Bushman, R. Ruggiero

LOCATION

Street/landmark: South end of Hideaway Ct; Sheet A6
Legal description: T.1S., R.3E., Section 26; Lots ____; TL 1908
Basin/sub-basin: Johnson Creek / Sunshine Creek

WETLAND CHARACTERISTICS

Description: This feature consists of Sunshine Creek and an adjacent wetland mosaic. The stream is somewhat incised through this reach but still exhibits overland discharge at peak flows. The riparian zone is well vegetated with a combination of native and exotic/noxious species. The adjacent wetland areas are used for pasture and rural residential uses; most of the vegetation has been converted to non-native species (pasture and ornamental).

The wetland areas in pastures receive hydrologic support from surface and subsurface water movement. Wetland conditions occur in a mosaic pattern, with wetlands present where the soil has a restrictive layer in surface or near-surface horizons. An estimated 60 percent of the mapped area of this mosaic is wetland. A drainage effect was noted near the creek where Douglas fir and other non-wetland species are present.

Soils: Powell silt loam, 0 to 8 percent slopes

Hydrologic Source: Stream flow immediately adjacent to stream; aquifer discharge and surface runoff above.

Dominant Vegetation:

Trees	Shrubs	Vines/Herbs
	red-osier dogwood	creeping bentgrass
	willows	Sedges
		Himalayan blackberry

Potential Enhancement Opportunities: Current land use is pasture and current functions are low. Enhancement opportunities would require homeowner cooperation to alter the existing use or isolate the resource from those activities. Opportunities include the following:

- supplemental planting of trees, shrubs – thermal cover, habitat, buffering
- supplemental planting of groundcover to improve diversity and add native component
- removal of noxious species in the riparian zone

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: BA-A-01	Field date: 3/16/07
Wetland Class: PEM, PFO	Investigators: AS, TB
Method: <input type="checkbox"/> on-site <input checked="" type="checkbox"/> off-site	Observation point: Highway 26

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	a	b	b	
2	b	b	a	a	
3	b	c	a	b	
4	c	a	b	b	
5	a	c	a	b	
6	a	c	c	a	
7	a			b	
8	c				
9	a				
Descriptor	some	degraded	intact	degraded	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?		
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:	Yes	No
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than 1/4 mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:	Yes	No
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?		
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: CL-A-01	Field date: 3/1/07, 4/4/07
Wetland Class: PFO, PSS PE, POW	Investigators: AS, TB, RR, MB
Method: <input checked="" type="checkbox"/> on-site <input type="checkbox"/> off-site	Observation point: Data Plots

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	a	a	a	
2	a	a	a	a	
3	a	a	a	b	
4	c	c	b	b	
5	a	a	c	a	
6	a	a	a	c	
7	c			a	
8	a				
9	a				
Descriptor	some	intact	intact	intact	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

	Yes	No
Exclusions. Wetland is not locally significant if one of the following conditions applies:		
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: CL-A-02	Field date: <u>3/1/07, 4/4/07</u>
Wetland Class: <u>PEM, PSS, POW</u>	Investigators: <u>AS, TB, RR</u>
Method: <input checked="" type="checkbox"/> on-site <input type="checkbox"/> off-site	Observation point: <u>Data Plots</u>

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	c	c	a	
2	b	a	a	a	
3	b	b	a	b	
4	c	c	b	a	
5	a	a	c	b	
6	a	a	a	c	
7	c			a	
8	a				
9	a				
Descriptor	some	degraded	degraded	intact	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: CL-A-03	Field date: No Access
Wetland Class: PEM	Investigators: NA
Method: <input type="checkbox"/> on-site <input checked="" type="checkbox"/> off-site	Observation point: DSL File notes

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	b		a	b	
2	a		b	b	
3	c		b	b	
4			b	b	
5	b		c	a	
6	b		a	c	
7	c			a	
8	a				
9	a				
Descriptor	some	n/a	degraded	degraded	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is not locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: NO-A-01	Field date: 3/9/07, 3/16/07, 5/31/07
Wetland Class: PFO, PSS, PEM	Investigators: AS, TB
Method: <input checked="" type="checkbox"/> on-site <input type="checkbox"/> off-site	Observation point: Data Plots

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	b	c	b	
2	a	b	a	a	
3	a	b	a	a	
4		a	a	c	
5	a	b	b	a	
6	a	c	c	a	
7	a			a	
8	b				
9	a				
Descriptor	diverse	degraded	degraded	intact	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: NO-A-02	Field date: <u>3/9/07</u>
Wetland Class: <u>PFO, PEM</u>	Investigators: <u>TB, RR</u>
Method: <input type="checkbox"/> on-site <input checked="" type="checkbox"/> off-site	Observation point: <u>Hoffmeister Street</u>

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	b	b	b	
2	b	c	a	a	
3	c	b	a	a	
4		a	a	b	
5	a	a	c	a	
6	a	c	c	a	
7	a			a	
8	a				
9	a				
Descriptor	diverse	degraded	intact	intact	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?		
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:	Yes	No
1. Wetland provides "diverse" wildlife habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Wetland is less than 1/4 mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:	Yes	No
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?		
	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: NO-A-03	Field date: 3/13/07, 5/16/07
Wetland Class: PEM, POW, PFO	Investigators: AS, TB, MB
Method: <input checked="" type="checkbox"/> on-site <input type="checkbox"/> off-site	Observation point: Data Plots

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	c	a	b	
2	b	b	a	a	
3	b	c	a	a	
4		a	a	b	
5	a	b	b	b	
6	a	b	c	a	
7	a			a	
8	b				
9	a				
Descriptor	diverse	degraded	intact	intact	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: NO-A-04	Field date: 4/4/07
Wetland Class: PFO	Investigators: AS, TB
Method: <input type="checkbox"/> on-site <input checked="" type="checkbox"/> off-site	Observation point: Driveway off Hwy. 212

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	a	c	b	
2	a	b	a	a	
3	b	a	a	b	
4		a	b	b	
5	a	c	a	a	
6	a	c	c	a	
7	a			a	
8	c				
9	a				
Descriptor	diverse	degraded	degraded	intact	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RI-A-01	Field date: 4/4/07
Wetland Class: PEM	Investigators: AS, TB
Method: <input type="checkbox"/> on-site <input checked="" type="checkbox"/> off-site	Observation point: Tong Road

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	c		a	b	
2	b		a	a	
3	b		b	b	
4			b	b	
5	b		b	b	
6	b		c	c	
7	a			a	
8	b				
9	b				
Descriptor	some	n/a	degraded	degraded	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is not locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RI-C-01	Field date: 3/9/07, 3/21/07
Wetland Class: PEM	Investigators: AS, TB, RR
Method: <input type="checkbox"/> on-site <input checked="" type="checkbox"/> off-site	Observation point: Sunnyside Road

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	c	c	b	b	
2	b	c	a	a	
3	c	c	a	b	
4		a	b	b	
5	a	b	b	b	
6	a	c	c	a	
7	a			a	
8	b				
9	a				
Descriptor	some	degraded	intact	degraded	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RI-C-02	Field date: 3/9/07, 3/21/07
Wetland Class: PEM, PSS	Investigators: AS, TB, RR
Method: <input type="checkbox"/> on-site <input checked="" type="checkbox"/> off-site	Observation point: Highway 212

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	a	a	b	
2	b	b	a	a	
3	b	b	a	b	
4		a	b	b	
5	a	c	a	a	
6	a	c	c	a	
7	a			a	
8	c				
9	a				
Descriptor	diverse	degraded	intact	intact	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Wetland is less than 1/4 mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RI-D-01	Field date: <u>3/21/07</u>
Wetland Class: <u>PEM, PSS</u>	Investigators: <u>AS, TB</u>
Method: <input type="checkbox"/> on-site <input checked="" type="checkbox"/> off-site	Observation point: <u>Alder Spring</u>

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	a	a	b	
2	b	a	a	a	
3	b	b	a	b	
4		a	b	b	
5	a	c	a	b	
6	a	c	c	a	
7	a			a	
8	c				
9	a				
Descriptor	diverse	degraded	intact	degraded	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RI-D-02	Field date: 4/4/07
Wetland Class: PEM, PSS, POW	Investigators: AS, TB
Method: <input type="checkbox"/> on-site <input checked="" type="checkbox"/> off-site	Observation point: Lot 2400

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	a	a	b	
2	a	b	a	a	
3	a	b	b	b	
4	c	a	b	b	
5	a	c	a	a	
6	a	b	c	a	
7	a			a	
8	c				
9	a				
Descriptor	some	degraded	degraded	intact	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RI-E01	Field date: 3/16/07
Wetland Class: PMM, PSS	Investigators: AS, TB
Method: <input checked="" type="checkbox"/> on-site <input type="checkbox"/> off-site	Observation point: Data plots

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	c	a	b	
2	c	b	a	a	
3	c	c	a	b	
4		a	b	b	
5	a	b	b	b	
6	a	c	c	a	
7	a			a	
8	b				
9	b				
Descriptor	some	degraded	intact	degraded	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RO-A-01	Field date: <u>3/9/07</u>
Wetland Class: <u>PEM</u>	Investigators: <u>TB, RR</u>
Method: <input checked="" type="checkbox"/> on-site <input type="checkbox"/> off-site	Observation point: <u>Data plots</u>

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	b	a	a	b	
2	b	a	a	a	
3	c	a	a	b	
4		a	b	c	
5	a	c	a	b	
6	a	c	c	a	
7	a			a	
8	c				
9	a				
Descriptor	some	degraded	intact	degraded	potential

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site. [technically, this criterion may not be met, but City believes it could be in future]	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RO-A-02	Field date: 3/9/07 4/4/07
Wetland Class: PFO, PEM	Investigators: AS, TB, RR
Method: <input checked="" type="checkbox"/> on-site <input type="checkbox"/> off-site	Observation point: Data plots

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	a	c	b	
2	a	b	a	a	
3	b	b	a	b	
4		a	b	a	
5	a	c	a	a	
6	a	b	c	a	
7	a			a	
8	c				
9	a				
Descriptor	diverse	degraded	degraded	intact	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RO-A-03	Field date: 4/4/07
Wetland Class: POW, PEM	Investigators: AS, TB
Method: <input checked="" type="checkbox"/> on-site <input type="checkbox"/> off-site	Observation point: Data plots

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	A	c	a	b	
2	b	b	a	a	
3	b	b	c	b	
4	b	a	b	b	
5	a	c	a	b	
6	a	b	c	a	
7	a			a	
8	c				
9	b				
Descriptor	diverse	degraded	degraded	degraded	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RO-B-01	Field date: 3/21/07
Wetland Class: PFO	Investigators: AS, TB
Method: <input type="checkbox"/> on-site <input checked="" type="checkbox"/> off-site	Observation point: Brent Street

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	b	a	a	b	
2	a	b	a	a	
3	b	b	a	b	
4		a	b	b	
5	a	b	b	a	
6	a	c	c	b	
7	a			a	
8	b				
9	a				
Descriptor	diverse	degraded	intact	degraded	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RO-D-01	Field date: 3/6/07
Wetland Class: PFO, PEM, POW	Investigators: AS, TB, MB
Method: <input checked="" type="checkbox"/> on-site <input type="checkbox"/> off-site	Observation point: Data plots

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	c	c	b	
2	b	b	a	a	
3	b	c	a	a	
4	b	a	a	b	
5	a	b	b	b	
6	a	b	c	b	
7	a			b	
8	b				
9	a				
Descriptor	diverse	degraded	degraded	degraded	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RO-D-02	Field date: <u>3/6/07</u>
Wetland Class: <u>PEM</u>	Investigators: <u>AS, MB</u>
Method: <input type="checkbox"/> on-site <input checked="" type="checkbox"/> off-site	Observation point: <u>Hemrick Road</u>

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	c	c	a	b	
2	b	b	a	a	
3	c	c	a	b	
4		a	b	b	
5	a	b	b	b	
6	a	c	c	b	
7	a			a	
8	b				
9	a				
Descriptor	some	degraded	intact	degraded	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RO-E-01	Field date: 3/16/07
Wetland Class: PFO, PEM, POW	Investigators: AS, TB, RR, MB
Method: <input checked="" type="checkbox"/> on-site <input type="checkbox"/> off-site	Observation point: Data plots

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	a	c	b	
2	a	a	a	a	
3	a	a	a	a	
4	b	a	a	b	
5	a	b	b	a	
6	a	a	c	a	
7	a			a	
8	b				
9	a				
Descriptor	diverse	intact	degraded	intact	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RO-F-01	Field date: <u>3/16/07</u>
Wetland Class: <u>PFO, PEM</u>	Investigators: <u>RR, MB</u>
Method: <input type="checkbox"/> on-site <input checked="" type="checkbox"/> off-site	Observation point: <u>Lot 800</u>

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	a	A	b	
2	a	b	b	b	
3	b	b	a	b	
4		c	b	c	
5	a	c	a	a	
6	a	c	a	a	
7	c			a	
8	c				
9	a				
Descriptor	some	degraded	degraded	degraded	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: RO-F-02	Field date: 3/16/07
Wetland Class: PEM, PFO	Investigators: RR, MB
Method: <input checked="" type="checkbox"/> on-site <input type="checkbox"/> off-site	Observation point: Data plots

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	b	c	b	
2	a	b	a	a	
3	b	b	a	b	
4		c	b	b	
5	a	c	a	a	
6	b	b	a	a	
7	c			a	
8	c				
9	a				
Descriptor	some	degraded	degraded	intact	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: SU-A-01	Field date: 3/4/07
Wetland Class: PEM, POW	Investigators: TB, RR
Method: <input type="checkbox"/> on-site <input checked="" type="checkbox"/> off-site	Observation point: Lot 800

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	a	a	b	
2	b	a	a	a	
3	c	c	a	b	
4	c	a	b	b	
5	a	b	b	b	
6	a	c	a	a	
7	a			b	
8	b				
9	a				
Descriptor	some	degraded	intact	degraded	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: SU-A-02	Field date: 3/6/07
Wetland Class: PFO, PEM	Investigators: AS, MB
Method: <input checked="" type="checkbox"/> on-site <input type="checkbox"/> off-site	Observation point: Data plots

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	c	c	b	
2	b	c	a	a	
3	c	c	a	a	
4		a	a	a	
5	a	b	b	b	
6	a	c	a	a	
7	a			a	
8	b				
9	b				
Descriptor	diverse	degraded	degraded	intact	potential

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Wetland is less than 1/4 mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site. [technically, this criterion may not be met, but City believes it could be in future]	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Optional LSW criteria met?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Determination: Wetland is locally significant		

Damascus Natural Features Inventory

Wetland Assessment Summary Sheet



GENERAL INFORMATION

Wetland Code: SU-A-03	Field date: 2/22/07, 3/6/07
Wetland Class: PEM, PSS	Investigators: AS, TB, RR, MB
Method: <input checked="" type="checkbox"/> on-site <input type="checkbox"/> off-site	Observation point: Data plots

FUNCTION AND CONDITION ASSESSMENT ANSWERS

OFWAM Question	Wildlife Habitat	Fish Habitat	Water Quality	Hydrologic Control	Education
1	a	b	c	b	
2	b	a	a	a	
3	c	b	a	b	
4		a	b	b	
5	a	c	a	b	
6	a	b	a	c	
7	a			a	
8	c				
9	a				
Descriptor	some	degraded	degraded	degraded	not approp.

LOCALLY SIGNIFICANT WETLAND (LSW) DETERMINATION

Exclusions. Wetland is not locally significant if one of the following conditions applies:	Yes	No
1. Wetland is artificially created entirely from upland AND is either: a) created for the purpose of controlling, storing, or maintaining stormwater; b) used for active surface mining or active log ponds; c) a ditch without free and open connection to natural waters of the state and no food or game fish; d) less than one acre in size and created unintentionally from irrigation or construction; or e) created for the purpose of wastewater treatment, cranberry production, farm or stock watering, settling of sediment, cooling industrial water, or as a golf course hazard.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland or portion thereof is contaminated by hazardous substances, materials or wastes per 141-086.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exclusion criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland provides "diverse" wildlife habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland provides "intact" fish habitat.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Wetland provides "intact" water quality function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Wetland provides "intact" hydrologic control function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Wetland is less than ¼ mile from a DEQ water quality limited water body (303 (d) list) and the wetland's water quality function is described as "intact" or "impacted or degraded."	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Wetland contains one or more rare plant communities.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Wetland is inhabited by any species listed federally as threatened or endangered, or state listed as sensitive, threatened or endangered.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Wetland has a direct surface water connection to a stream segment mapped by ODFW as habitat for indigenous anadromous salmonids, and has "intact" or "impacted or degraded" fish habitat function.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW Criteria. Wetland is locally significant if it meets one or more of the following criteria:		
1. Wetland represents a locally unique native plant community AND provides: a) "diverse habitat" or "habitat for some wildlife species"; b) "intact" or "impacted or degraded" fish habitat; c) "intact" or "impacted or degraded" water quality; or d) "intact" or "impacted or degraded" hydrologic control.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Wetland is publicly owned and has "educational uses" and such use is documented for that site.	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Optional LSW criteria met?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Determination: Wetland is not locally significant		

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: BA-A-01

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Moderate interspersions	Adjacent land is primarily developed uses
	Less than 0.5 acre of open water	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	More than 75% of stream is shaded	No adjacent Water Quality Limited streams
	Only portions of stream are modified	Adjacent land use is primarily developed uses
	<10% of stream has instream structures	No fish present in stream
Water Quality:	Intact	
Rationale:	Primary water source is precipitation	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily developed uses
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Development downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Agriculture upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: CL-A-01

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by woody vegetation	One or more Water Quality limited streams
	High interspersion	Adjacent land is primarily open space
	Less than 0.5 acre of open water	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Intact	
Rationale:	More than 75% of stream is shaded	One or more adjacent Water Quality limited streams
	Stream is in a natural channel	Adjacent land is primarily open space
	>25% of stream has instream structures	Salmon and/or trout present in stream
Water Quality:	Intact	
Rationale:	Primary water source is surface flow	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land is primarily open space
	High wetland vegetation cover	One or more adjacent Water Quality limited streams
Hydrologic Control:	Intact	
Rationale:	Wetland is within 100 year floodplain	Dominated by woody vegetation
	Wetland floods or ponds	Open space downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: CL-A-02

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	One or more Water Quality limited streams
	Moderate interspersions	Adjacent land is primarily open space
	Less than 0.5 acre of open water	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	Less than 50% of stream is shaded	One or more adjacent Water Quality limited streams
	Stream is in a natural channel	Adjacent land is primarily open space
	10% to 25% of stream has instream structures	Salmon and/or trout present in stream
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is groundwater	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land is primarily open space
	High wetland vegetation cover	One or more adjacent Water Quality limited streams
Hydrologic Control:	Intact	
Rationale:	Wetland is within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Open space downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has restricted outlet	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: CL-A-03

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	One Cowardin class with >5 species	No surface connection, but wetlands w/in 3 miles
	Dominated by woody vegetation	One or more Water Quality limited streams
	Low interspersion	Adjacent land is primarily open space
	N/A	Wetland buffer is greater than 40%
	No surface connection, but waterbody w/in 1 mile	
Fish Habitat:	Not Applicable	
Rationale:	N/A	N/A
	N/A	N/A
	N/A	N/A
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is surface flow	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Can't determine if wetland floods or ponds	Adjacent land is primarily open space
	Moderate wetland vegetation cover	One or more adjacent Water Quality limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation
	Can't determine if wetland floods or ponds	Open space downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: NO-A-01

Wildlife Habitat:	Provides diverse habitat for wildlife	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by woody vegetation	No adjacent Water Quality limited streams
	High interspersion	Adjacent land is primarily agriculture
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	Between 50% and 75% of stream is shaded	No adjacent Water Quality Limited streams
	Only portions of stream are modified	Adjacent land use is primarily agriculture
	10% to 25% of stream has instream structures	No fish present in stream
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is groundwater	Wetland is more than 5 acres
	Wetland floods or ponds	Adjacent land use is primarily agriculture
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Intact	
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation
	Wetland floods or ponds	Development downslope of wetland
	Wetland is more than 5 acres	Urban uses upslope of wetland
	Water has unrestricted flow out of wetland	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: NO-A-02

Wildlife Habitat:	Provides diverse habitat for wildlife	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Low interspersion	Adjacent land is primarily open space
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	Between 50% and 75% of stream is shaded	No adjacent Water Quality Limited streams
	Stream banks are extensively modified	Adjacent land is primarily open space
	10% to 25% of stream has instream structures	No fish present in stream
Water Quality:	Intact	
Rationale:	Primary water source is precipitation	Wetland is more than 5 acres
	Wetland floods or ponds	Adjacent land is primarily open space
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Intact	
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation
	Wetland floods or ponds	Development downslope of wetland
	Wetland is more than 5 acres	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: NO-A-03

Wildlife Habitat:	Provides diverse habitat for wildlife	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Moderate interspersion	Adjacent land is primarily agriculture
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	Less than 50% of stream is shaded	No adjacent Water Quality Limited streams
	Only portions of stream are modified	Adjacent land use is primarily agriculture
	<10% of stream has instream structures	Some non-salmonid fish species present in stream
Water Quality:	Intact	
Rationale:	Primary water source is surface flow	Wetland is more than 5 acres
	Wetland floods or ponds	Adjacent land use is primarily agriculture
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Intact	
Rationale:	Wetland is not within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Development downslope of wetland
	Wetland is more than 5 acres	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: NO-A-04

Wildlife Habitat:	Provides diverse habitat for wildlife	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by woody vegetation	No adjacent Water Quality limited streams
	Moderate interspersion	Adjacent land is primarily developed uses
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	More than 75% of stream is shaded	No adjacent Water Quality Limited streams
	Only portions of stream are modified	Adjacent land use is primarily developed uses
	>25% of stream has instream structures	No fish present in stream
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is groundwater	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily developed uses
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Intact	
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation
	Wetland floods or ponds	Development downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RI-A-01

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	One Cowardin class with <5 species	No surface connection, but wetlands w/in 3 miles
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Moderate interspersion	Adjacent land is primarily agriculture
	N/A	Wetland buffer is between 10 and 40%
	No surface connection, but waterbody w/in 1 mile	
Fish Habitat:	N/A	
Rationale:	N/A	N/A
	N/A	N/A
	N/A	N/A
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is surface flow	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily agriculture
	Moderate wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Open space downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RI-C-01

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	One Cowardin class with <5 species	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Low interspersion	Adjacent land is primarily agriculture
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	Less than 50% of stream is shaded	No adjacent Water Quality Limited streams
	Stream banks are extensively modified	Adjacent land use is primarily agriculture
	<10% of stream has instream structures	No fish present in stream
Water Quality:	Intact	
Rationale:	Primary water source is precipitation	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily agriculture
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Development downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RI-C-02

Wildlife Habitat:	Provides diverse habitat for wildlife	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Moderate interspersion	Adjacent land is primarily developed uses
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	More than 75% of stream is shaded	No adjacent Water Quality Limited streams
	Only portions of stream are modified	Adjacent land use is primarily developed uses
	10% to 25% of stream has instream structures	No fish present in stream
Water Quality:	Intact	
Rationale:	Primary water source is surface flow	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily developed uses
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Intact	
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation
	Wetland floods or ponds	Development downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RI-D-01

Wildlife Habitat:	Provides diverse habitat for wildlife	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Moderate interspersion	Adjacent land is primarily developed uses
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	More than 75% of stream is shaded	No adjacent Water Quality Limited streams
	Stream is in a natural channel	Adjacent land use is primarily developed uses
	10% to 25% of stream has instream structures	No fish present in stream
Water Quality:	Intact	
Rationale:	Primary water source is surface flow	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily developed uses
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Development downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RI-D-02

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by woody vegetation	No adjacent Water Quality limited streams
	High interspersion	Adjacent land is primarily developed uses
	Less than 0.5 acre of open water	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	More than 75% of stream is shaded	No adjacent Water Quality Limited streams
	Only portions of stream are modified	Adjacent land use is primarily developed uses
	10% to 25% of stream has instream structures	Some non-salmonid fish species present in stream
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is surface flow	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily developed uses
	Moderate wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Intact	
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation
	Wetland floods or ponds	Development downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RI-E-01

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by emergent vegetation	No adjacent Water Quality limited streams
	Low interspersions	Adjacent land is primarily agriculture
	N/A	Wetland buffer is between 10 and 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	Less than 50% of stream is shaded	No adjacent Water Quality Limited streams
	Only portions of stream are modified	Adjacent land use is primarily agriculture
	<10% of stream has instream structures	No fish present in stream
Water Quality:	Intact	
Rationale:	Primary water source is surface flow	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily agriculture
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Development downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RO-A-01

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	One Cowardin class with >5 species	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Low interspersion	Adjacent land is primarily developed uses
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	More than 75% of stream is shaded	No adjacent Water Quality Limited streams
	Stream is in a natural channel	Adjacent land use is primarily developed uses
	>25% of stream has instream structures	No fish present in stream
Water Quality:	Intact	
Rationale:	Primary water source is surface flow	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily developed uses
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Development downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Water has unrestricted flow out of wetland	
Education:	Potential for education uses	
Rationale:	Wetland is open to the public	Public access to other habitats exist
	One or two visible hazards to public	No access point to wetland exists
	No intact fish or wildlife, but both functions not los	Wetland is not limited mobility accessible

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RO-A-02

Wildlife Habitat:	Provides diverse habitat for wildlife	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by woody vegetation	No adjacent Water Quality limited streams
	Moderate interspersions	Adjacent land is primarily developed uses
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	More than 75% of stream is shaded	No adjacent Water Quality Limited streams
	Only portions of stream are modified	Adjacent land use is primarily developed uses
	10% to 25% of stream has instream structures	Some non-salmonid fish species present in stream
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is groundwater	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily developed uses
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Intact	
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation
	Wetland floods or ponds	Development downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has restricted outlet	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RO-A-03

Wildlife Habitat:	Provides diverse habitat for wildlife	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Moderate interspersions	Adjacent land is primarily developed uses
	Between 0.5 and 1 acre of open water	Wetland buffer is between 10 and 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	Less than 50% of stream is shaded	No adjacent Water Quality Limited streams
	Only portions of stream are modified	Adjacent land use is primarily developed uses
	10% to 25% of stream has instream structures	Some non-salmonid fish species present in stream
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is surface flow	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily developed uses
	Low wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Development downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RO-B-01

Wildlife Habitat:	Provides diverse habitat for wildlife	
Rationale:	One Cowardin class with >5 species	Surface water connection to other wetland
	Dominated by woody vegetation	No adjacent Water Quality limited streams
	Moderate interspersation	Adjacent land is primarily agriculture
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	More than 75% of stream is shaded	No adjacent Water Quality Limited streams
	Only portions of stream are modified	Adjacent land use is primarily agriculture
	10% to 25% of stream has instream structures	No fish present in stream
Water Quality:	Intact	
Rationale:	Primary water source is surface flow	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily agriculture
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation
	Wetland floods or ponds	Agriculture downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RO-D-01

Wildlife Habitat:	Provides diverse habitat for wildlife	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Moderate interspersions	Adjacent land is primarily agriculture
	Between 0.5 and 1 acre of open water	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	Less than 50% of stream is shaded	No adjacent Water Quality Limited streams
	Only portions of stream are modified	Adjacent land use is primarily agriculture
	<10% of stream has instream structures	Some non-salmonid fish species present in stream
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is groundwater	Wetland is more than 5 acres
	Wetland floods or ponds	Adjacent land use is primarily agriculture
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Agriculture downslope of wetland
	Wetland is more than 5 acres	Agriculture upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RO-D-02

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	One Cowardin class with <5 species	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Low interspersion	Adjacent land is primarily agriculture
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	Less than 50% of stream is shaded	No adjacent Water Quality Limited streams
	Only portions of stream are modified	Adjacent land use is primarily agriculture
	<10% of stream has instream structures	No fish present in stream
Water Quality:	Intact	
Rationale:	Primary water source is surface flow	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily agriculture
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Agriculture downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RO-E-01

Wildlife Habitat:	Provides diverse habitat for wildlife	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by woody vegetation	No adjacent Water Quality limited streams
	High interspersion	Adjacent land is primarily agriculture
	Between 0.5 and 1 acre of open water	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Intact	
Rationale:	More than 75% of stream is shaded	No adjacent Water Quality Limited streams
	Stream is in a natural channel	Adjacent land use is primarily agriculture
	>25% of stream has instream structures	Salmon and/or trout present in stream
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is groundwater	Wetland is more than 5 acres
	Wetland floods or ponds	Adjacent land use is primarily agriculture
	High wetland vegetation cover	No adjacent Water Quality Limited streams
Hydrologic Control:	Intact	
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation
	Wetland floods or ponds	Development downslope of wetland
	Wetland is more than 5 acres	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RO-F-01

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by woody vegetation	One or more Water Quality limited streams
	Moderate interspersions	Adjacent land is primarily developed uses
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	More than 75% of stream is shaded	One or more adjacent Water Quality limited streams
	Only portions of stream are modified	Adjacent land use is primarily developed uses
	10% to 25% of stream has instream structures	No fish present in stream
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is surface flow	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Can't determine if wetland floods or ponds	Adjacent land use is primarily developed uses
	High wetland vegetation cover	One or more adjacent Water Quality limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation
	Can't determine if wetland floods or ponds	Development downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Water has unrestricted flow out of wetland	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: RO-F-02

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	More than one Cowardin class	No surface connection, but wetlands w/in 3 miles
	Dominated by woody vegetation	One or more Water Quality limited streams
	Moderate interspersed	Adjacent land is primarily developed uses
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	Between 50% and 75% of stream is shaded	One or more adjacent Water Quality limited streams
	Only portions of stream are modified	Adjacent land use is primarily developed uses
	10% to 25% of stream has instream structures	Some non-salmonid fish species present in stream
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is groundwater	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily developed uses
	High wetland vegetation cover	One or more adjacent Water Quality limited streams
Hydrologic Control:	Intact	
Rationale:	Wetland is not within 100 year floodplain	Dominated by woody vegetation
	Wetland floods or ponds	Development downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: SU-A-01

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Low interspersion	Adjacent land is primarily agriculture
	Less than 0.5 acre of open water	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	More than 75% of stream is shaded	No adjacent Water Quality Limited streams
	Stream is in a natural channel	Adjacent land use is primarily agriculture
	<10% of stream has instream structures	No fish present in stream
Water Quality:	Intact	
Rationale:	Primary water source is surface flow	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily agriculture
	High wetland vegetation cover	One or more adjacent Water Quality limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Development downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Agriculture upslope of wetland
	Wetland has minor flow restrictions	

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: SU-A-02

Wildlife Habitat:	Provides diverse habitat for wildlife	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Low interspersion	Adjacent land is primarily agriculture
	N/A	Wetland buffer is between 10 and 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	Less than 50% of stream is shaded	No adjacent Water Quality Limited streams
	Stream banks are extensively modified	Adjacent land use is primarily agriculture
	<10% of stream has instream structures	No fish present in stream
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is groundwater	Wetland is more than 5 acres
	Wetland floods or ponds	Adjacent land use is primarily agriculture
	High wetland vegetation cover	One or more adjacent Water Quality limited streams
Hydrologic Control:	Intact	
Rationale:	Wetland is not within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Development downslope of wetland
	Wetland is more than 5 acres	Urban uses upslope of wetland
	Wetland has restricted outlet	
Education:	Potential for education uses	
Rationale:	Access allowed by permission only	Other habitats can be observed not accessed
	One or two visible hazards to public	No access point to wetland exists
	No intact fish or wildlife, but both functions not los	Wetland is not limited mobility accessible

Damascus LWI

OFWAM Functions and Conditions Summary Sheet

Wetland Assessment Unit: SU-A-03

Wildlife Habitat:	Provides habitat for some wildlife species	
Rationale:	More than one Cowardin class	Surface water connection to other wetland
	Dominated by emergent vegetation and ponding	No adjacent Water Quality limited streams
	Low interspersion	Adjacent land is primarily developed uses
	N/A	Wetland buffer is greater than 40%
	Surface water connection to water body	
Fish Habitat:	Impacted or degraded	
Rationale:	Between 50% and 75% of stream is shaded	No adjacent Water Quality Limited streams
	Stream is in a natural channel	Adjacent land use is primarily developed uses
	10% to 25% of stream has instream structures	Some non-salmonid fish species present in stream
Water Quality:	Impacted or degraded	
Rationale:	Primary water source is groundwater	Wetland is 0.5 to 5 acres, or <0.5 and connected
	Wetland floods or ponds	Adjacent land use is primarily developed uses
	High wetland vegetation cover	One or more adjacent Water Quality limited streams
Hydrologic Control:	Impacted or degraded	
Rationale:	Wetland is not within 100 year floodplain	Dominated by emergent vegetation and ponding
	Wetland floods or ponds	Open space downslope of wetland
	Wetland is 0.5 to 5 acres, or <0.5 and connected	Urban uses upslope of wetland
	Wetland has minor flow restrictions	

Wetland Determination Data Form

Damascus Natural Features Inventory

Location: West of Hwy. 26, south of Stone Rd.
 Cowardin Class: PEM, PFO
 HGM Class: RFT, F
 Field Investigator(s): ACS, TB
 Recent Weather: 1.72" precipitation in previous 14 days, 88% of average
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

WETLAND: BA-A-01 OFF-SITE
 Map # A7
 Plot No. OFF-SITE
 WET/UPL: WET
 Date: 3/16/2007

Vegetation: Dominant Plant Species

Herb Stratum				Tree Stratum			
Ind. status	% Cover	% rel. cover	Total cover:	Ind. status	% Cover	% rel. cover	Total cover:
	100%				0%		
<i>Phalaris arundinacea</i>	FACW	100%	100%	<i>Alnus rubra</i>	FAC	T	
Sapling/ Shrub Stratum							
Ind. status	% Cover	% rel. cover	Total cover:	Ind. status	% Cover	% rel. cover	Total cover:
			0%				

Percent of dominant species that are OBL, FACW, and/or FAC : 1 of 1 = 100%
 Remarks: Some areas mowed. Some areas include soft rush, alder, ash

Soils:

Map Unit Name: Wapato silty clay loam, 0-3% Drainage Class: poorly drained
 Taxonomy: Fluvaquent Haplaquolis Hydric soil? Yes Hydric inclusions? Yes
 Depth Horizon Matrix Color Redox Conc. Redox Desc. Texture/Structure/etc
 off-site

Hydric soil indicators:

Histosol _____ Reducing Conditions _____ Organic streaking (in sandy soils) _____
 Hist. Epipedon _____ Redox. Features (w/in 10") _____ Organic pan (in sandy soils) _____
 Sulfidic Odor _____ Concretions/Nodules (w/in 3"; >2mm) _____ Listed on Hydric Soils List X _____
 Gley/low chroma _____ High organic content in surface (in sandy soils) _____ Other ponded _____

Remarks: _____

Hydrology:

Recorded Data Available? Yes Aerial photos X Strm. gauge _____ Other: _____
Primary Hydrology Indicators Secondary Hydrology Indicators
 Depth of inundation: _____ Inundated X Oxidized Root Channels (upper 12") _____
 Depth to saturation: _____ Saturated in upper 12" _____ Water-stained leaves _____
 Depth to free water: _____ Water marks _____ Local Soil Survey Data _____
 _____ Drift lines _____ FAC-Neutral Test _____
 _____ Sediment deposits _____ Other: _____
 _____ Drainage patterns X _____

Remarks: Patchy surface ponding in meadow. Drainage patterns along toe on west side

Wetland Determination:

Is the hydrophytic vegetation criterion met? Yes
 Is the hydric soil criterion met? Yes
 Is the specific hydrology criterion met? Yes
 Is this sampling point within a wetland? Yes

Comments: Boundary along topographic break on west side, near row line of alder; generally follows hydric soil line on Hwy. 26 side

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: CL-A-01

Location: South of Hwy. 224/Eilers Cir. near Clackamas R.

Map # G2

Cowardin Class: PFO

Plot No. DP-1

HGM Class: RFT

WET/UPL: WET

Field Investigator(s): MB/RR/ACS

Date: 3/1/2007

Recent Weather: 3.26" precipitation in previous 14 days, 29% above avg.

Do normal conditions exist on the site? Yes

Is the site significantly disturbed? No

Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	85%			Total cover:	50%		
<i>Phalaris arundinacea</i>	FACW	60%	70.6%	<i>Populus balsamifera v. trich</i>	FAC	50%	100.0%
<i>Ranunculus repens</i>	FACW	15%	17.6%				0.0%
<i>Rubus ursinus</i>	FACU	5%	5.9%				0.0%
<i>Hedera helix</i>	UPL	5%	5.9%				0.0%
<i>Iris pseudacorus</i>	OBL	T	0.0%				0.0%
<i>Melissa officinalis</i>	UPL	T	0.0%	Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
<i>Carex species</i>	-	T	0.0%	Total cover:	40%		
			0.0%	<i>Alnus rubra</i>	FAC	15%	37.5%
			0.0%	<i>Cornus stolonifera</i> [<i>sericea</i>]	FACW	15%	37.5%
			0.0%	<i>Symphoricarpos albus</i>	FACU	10%	25.0%

Percent of dominant species that are OBL, FACW, and/or FAC : 4 of 5 = 80%

Remarks: Some Polygonum near plot

Soils:

Map Unit Name:	Cloquato silt loam 0-3%	Drainage Class:	well drained
Taxonomy:	Cumulic Ultichaploxerolls	Hydric soil?	No
Depth	Horizon	Matrix Color	Redox Conc.
0-4"		10 YR 3/2	NONE
4-16"		10 YR 3/2	10 YR 3/3
			many med faint N3;pores
			many med distinct
			LOAMY SAND

Hydric soil indicators:

Histosol	Reducing Conditions	Organic streaking (in sandy soils)
Hist. Epipedon	Redox. Features (w/in 10") X	Organic pan (in sandy soils)
Sulfidic Odor	Concretions/Nodules (w/in 3"; >2mm)	On Hydric Soils List
Gley/low chroma X	High organic content in surface (in sandy soils)	Other

Remarks: Depletions larger, more prevalent with depth; halo around depletions

Hydrology:

Recorded Data Available?	Yes	Aerial photos	X	Strm. gauge		Other:	
		Primary Hydrology Indicators				Secondary Hydrology Indicators	
Depth of inundation:	NONE	Inundated		Oxidized Root Channels (upper 12")		Water-stained leaves	
Depth to saturation:	SURFACE	Saturated in upper 12"	X	Local Soil Survey Data		FAC-Neutral Test	
Depth to free water:	4"	Water marks		Other:			
		Drift lines	X				
Primary water source:	stream drainage	Sediment deposits	X				
Secondary:	Clackamas River backflow	Drainage patterns	X				

Remarks:

Wetland Determination:

Is the hydrophytic vegetation criterion met?	Yes
Is the hydric soil criterion met?	Yes
Is the specific hydrology criterion met?	Yes
Is this sampling point within a wetland?	Yes

Comments: Floodplain with small drainage flowing through. Channel is avg. 12' wide, 12" deep. Plot taken on bench above channel bank. Likely occasionally, briefly flooded. Alder regenerating.

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: CL-A-01
 Map # G2
 Plot No. DP-2
 WET/UPL: UPL
 Date: 3/1/2007

Location: South of Hwy. 224/Eilers Cir. near Clackamas R.
 Cowardin Class: _____
 HGM Class: _____
 Field Investigator(s): MB/RR/ACS
 Recent Weather: 3.26" precipitation in previous 14 days, 29% above avg.
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	5%			Total cover:	80%		
<i>Phalaris arundinacea</i>	FACW	5%	100.0%	<i>Populus balsamifera v. trich</i>	FAC	70%	87.5%
<i>Polystichum munitum</i>	FACU	T		<i>Acer macrophyllum</i>	FACU	10%	12.5%
<i>Polypodium glycyrrhiza</i>	UPL	T					
				Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
				Total cover:	120%		
				<i>Symphoricarpos albus</i>	FACU	50%	41.7%
				<i>Cornus stolonifera</i> [[<i>sericea</i>]	FACW	10%	8.3%
				<i>Rubus spectabilis</i>	FAC+	5%	4.2%
				<i>Rubus ursinus</i>	FACU	10%	8.3%
				<i>Crataegus douglasii</i>	FAC	5%	4.2%
				<i>Hedera helix</i>	UPL	40%	33.3%
				2	of	4	= 50%

Percent of dominant species that are OBL, FACW, and/or FAC :
 Remarks: Rubus lac. 5%, Rubus dis. 5%

Soils:

Map Unit Name:	<u>Cloquato silt loam 0-3%</u>	Drainage Class:	<u>well drained</u>
Taxonomy:	<u>Cumulic Ultic Haploxerolls</u>	Hydric soil?	<u>No</u>
Depth	Horizon	Matrix Color	Redox Conc.
0-16"		<u>10 YR 3/2</u>	<u>NONE</u>
		Redox Desc.	Texture/Structure/etc
			<u>Silt Loam -sandy fraction increasing with depth</u>

Hydric soil indicators:

Histosol	Reducing Conditions	Organic streaking (in sandy soils)
Hist. Epipedon	Redox. Features (w/in 10")	Organic pan (in sandy soils)
Sulfidic Odor	Concretions/Nodules (w/in 3"; >2mm)	On Hydric Soils List
Gley/low chroma	High organic content in surface (in sandy soils)	Other

Remarks: _____

Hydrology:

Recorded Data Available?	<u>Yes</u>	Aerial photos	<u>X</u>	Strm. gauge	_____	Other:	_____
		<i>Primary Hydrology Indicators</i>		<i>Secondary Hydrology Indicators</i>			
Depth of inundation:	<u>NONE</u>	Inundated	_____	Oxidized Root Channels (upper 12")	_____		
Depth to saturation:	<u>>16"</u>	Saturated in upper 12"	_____	Water-stained leaves	_____		
Depth to free water:	<u>>16"</u>	Water marks	_____	Local Soil Survey Data	_____		
		Drift lines	<u>X</u>	FAC-Neutral Test	_____		
		Sediment deposits	_____	Other:	_____		
		Drainage patterns	_____				

Remarks: Flooding did get this high this winter (sediment in tree bark, debris in shrubs) but does not appear frequent enough to discourage upland vegetation

Wetland Determination:

Is the hydrophytic vegetation criterion met? No
 Is the hydric soil criterion met? No
 Is the specific hydrology criterion met? Yes
 Is this sampling point within a wetland? No

Comments: Higher ground above small stream in Clackamas River riparian fringe. May experience ephemeral flooding rarely.

Wetland Determination Data Form

Damascus Natural Features Inventory

Location: South of Hwy. 224/Eilers Cir. near Clackamas R.
 Cowardin Class: PEM
 HGM Class: RFT
 Field Investigator(s): MB/RR
 Recent Weather: 3.26" precipitation in previous 14 days, 29% above avg.

WETLAND: CL-A-01
 Map # G2
 Plot No. DP-3
 WET/UPL: WET
 Date: 3/1/2007

Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	55%			Total cover:			
<i>Phalaris arundinacea</i>	FACW	55%	100.0%				
				Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
				Total cover:	20%		
				<i>Salix sp.</i>	FAC-FACW	20%	100.0%

Percent of dominant species that are OBL, FACW, and/or FAC : 2 of 2 = 100%
 Remarks: Community around pond margin

Soils:

Map Unit Name:	<u>Wapato silt loam</u>	Drainage Class:	<u>poorly drained</u>
Taxonomy:	<u>Fluvaquentic Haplaquolis</u>	Hydric soil?	<u>Yes</u>
Depth	Horizon	Matrix Color	Redox Conc.
0-16"		10 YR 3/2	7.5 YR 4/6
			common, med, distinct
			N4/ begins at 10" few, med, distinct

Hydric soil indicators:
 Histosol Reducing Conditions X Organic streaking (in sandy soils)
 Hist. Epipedon Redox. Features (w/in 10") X Organic pan (in sandy soils)
 Sulfidic Odor Concretions/Nodules (w/in 3"; >2mm) On Hydric Soils List
 Gley/low chroma X High organic content in surface (in sandy soils) Other

Remarks: Texture is loose, friable silt loam. Near pond, the pores fill and drain in response to water levels in pond, overbank events in nearby Clackamas River. Upslope on higher ground, texture/porosity is similar by higher elev/distance from pond = water table/sat < 16"

Hydrology:

Recorded Data Available? Yes Aerial photos X Strm. gauge Other:
Primary Hydrology Indicators *Secondary Hydrology Indicators*
 Depth of inundation: NONE Inundated Oxidized Root Channels (upper 12")
 Depth to saturation: 0" Saturated in upper 12" X Water-stained leaves
 Depth to free water: 3" Water marks Local Soil Survey Data
Drift lines X FAC-Neutral Test
Sediment deposits X Other:
Drainage patterns X

Remarks: Source: surface runoff, precip, groundwater discharge at toe of slope

Wetland Determination:

Is the hydrophytic vegetation criterion met? Yes
 Is the hydric soil criterion met? Yes
 Is the specific hydrology criterion met? Yes
 Is this sampling point within a wetland? Yes

Comments: shallow layer of recently deposited sand (top 2" of soil)

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: CL-A-01
 Map # G2
 Plot No. DP-4
 WET/UPL: UPL
 Date: 3/1/2007

Location: South of Hwy. 224/Eilers Cir. near Clackamas R.
 Cowardin Class:
 HGM Class:
 Field Investigator(s): MB/RR
 Recent Weather: 3.26" precipitation in previous 14 days, 29% above avg.
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Vegetation:				Dominant Plant Species			
Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover: 95%				Total cover:			
<i>Phalaris arundinacea</i>	FACW	90%	94.7%				
<i>Galium aparine</i>	FACU	5%	5.3%				
				Sapling/ Shrub Stratum			
				Ind. status			
				% Cover			
				% rel. cover			
				Total cover: 10%			
				<i>Rubus discolor</i> [<i>R. armeniac</i>] FACU			
				10%			
				100.0%			

Percent of dominant species that are OBL, FACW, and/or FAC : 1 of 2 = 50%
 Remarks: Community around pond margin

Soils:

Map Unit Name:	Wapato silt loam	Drainage Class:	poorly drained
Taxonomy:	Fluvaquentic Haplaquolis	Hydric soil?	Yes
Depth	Horizon	Matrix Color	Redox Conc.
0-16"		10 YR 3/2	10 YR 4/4
		Redox Desc.	Texture/Structure/etc
		common, med, distinct	SILT LOAM

Hydric soil indicators:

Histosol _____ Reducing Conditions _____ Organic streaking (in sandy soils) _____
 Hist. Epipedon _____ Redox. Features (w/in 10") X _____ Organic pan (in sandy soils) _____
 Sulfidic Odor _____ Concretions/Nodules (w/in 3"; >2mm) _____ On Hydric Soils List X _____
 Gley/low chroma _____ High organic content in surface (in sandy soils) _____ Other _____

Remarks: recent sand deposits

Hydrology:

Recorded Data Available? Yes _____ Aerial photos X _____ Strm. gauge _____ Other: _____

Depth of inundation: NONE _____ Inundated _____ Oxidized Root Channels (upper 12") _____
 Depth to saturation: >16" _____ Saturated in upper 12" _____ Water-stained leaves _____
 Depth to free water: >16" _____ Water marks _____ Local Soil Survey Data _____
 _____ Drift lines _____ FAC-Neutral Test _____
 _____ Sediment deposits _____ Other: _____
 _____ Drainage patterns _____

Wetland Determination:

Is the hydrophytic vegetation criterion met? No
 Is the hydric soil criterion met? Yes
 Is the specific hydrology criterion met? No
 Is this sampling point within a wetland? No

Comments: _____

Wetland Determination Data Form

Damascus Natural Features Inventory

Location: South of Hwy. 224/Eilers Cir. near Clackamas R.
 Cowardin Class: _____
 HGM Class: _____
 Field Investigator(s): ACS/TB
 Recent Weather: 3.26" precipitation in previous 14 days, 69% above avg.

WETLAND: CL-A-01
 Map # G2
 Plot No. DP-5
 WET/UPL: UPL
 Date: 4/4/2007

Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Herb Stratum				Tree Stratum			
Ind. status	% Cover	% rel. cover		Ind. status	% Cover	% rel. cover	
Total cover: 60%				Total cover: _____			
<i>Festuca arundinacea</i>	FAC-	20%	33.3%				
<i>Dactylis glomerata</i>	FACU	10%	16.7%				
<i>Trisetum spicatum</i>	UPL	10%	16.7%				
<i>Plantago lanceolata</i>	FAC	10%	16.7%				
<i>Hypericum perforatum</i>	UPL	10%	16.7%				
<i>Vicia sp</i>							
				Sapling/ Shrub Stratum			
Ind. status	% Cover	% rel. cover		Ind. status	% Cover	% rel. cover	
Total cover: _____				Total cover: _____			

Percent of dominant species that are OBL, FACW, and/or FAC : 1 of 5 = 20%
 Remarks: Populous balsamifera nearby

Soils:

Map Unit Name:	<u>Wapato silt loam</u>	Drainage Class:	<u>poorly drained</u>
Taxonomy:	<u>Fluvaquentic Haplaquolis</u>	Hydric soil?	<u>Yes</u>
Depth	Horizon	Matrix Color	Redox Conc.
0-6"		<u>2.5 Y 3/2</u>	
6-18"		<u>10 YR 4/3</u>	
		Redox Desc.	Texture/Structure/etc
			<u>loamy sand</u>
			<u>sandy loam</u>

Hydric soil indicators:

Histosol _____ Reducing Conditions _____ Organic streaking (in sandy soils) _____
 Hist. Epipedon _____ Redox. Features (w/in 10") X _____ Organic pan (in sandy soils) _____
 Sulfidic Odor _____ Concretions/Nodules (w/in 3"; >2mm) _____ On Hydric Soils List X _____
 Gley/low chroma _____ High organic content in surface (in sandy soils) _____ Other _____

Remarks: Lens of silt at 10", 10 YR 4/2 silt loam with 10 YR 4/4 Fe staining on ped faces. Soil is loose, no restriction to downward movement of water

Hydrology:

Recorded Data Available? Yes Aerial photos X Strm. gauge _____ Other: _____
Primary Hydrology Indicators Secondary Hydrology Indicators
 Depth of inundation: NONE Inundated Oxidized Root Channels (upper 12")
 Depth to saturation: >16" Saturated in upper 12" Water-stained leaves
 Depth to free water: >16" Water marks Local Soil Survey Data
Drift lines FAC-Neutral Test
Sediment deposits Other: _____
Drainage patterns _____

Remarks: Sand deposits from overbank flow in winter (November)

Wetland Determination:

Is the hydrophytic vegetation criterion met? No
 Is the hydric soil criterion met? No
 Is the specific hydrology criterion met? No
 Is this sampling point within a wetland? No

Comments: Plot is 55' to edge of riprap/sheet pile. Riprap is 20' from edge of water. This point is in the area previously mapped wetland as part of DET 02-0606, which has changed in part due to flood events

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: CL-A-02

Location: South of Hwy. 224 and Eilers Circle
 Cowardin Class: _____
 HGM Class: _____
 Field Investigator(s): ACS/TB/RR
 Recent Weather: 3.26" precipitation in previous 14 days, 29% above average
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Map No: G2
 Plot No: DP 2
 WET/UPL: UPL
 Date: 3/1/2007

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	70%			Total cover:	10%		
<i>Tanacetum vulgare</i>	NI	20%	28.6%	<i>Salix lasiandra</i> [flucida var. . FACW+		10%	100.0%
<i>Phalaris arundinacea</i>	FACW	30%	42.9%				
Unidentified grasses	-	20%	28.6%				
				Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
				Total cover:	30%		
				<i>Cytisus scoparius</i>	UPL	5%	16.7%
				<i>Salix lasiandra</i> [flucida var. . FACW+		10%	33.3%
				<i>Rubus discolor</i> [R. armeniac FACU		15%	50.0%
				<i>Rubus ursinus</i>	FACU	T	
Percent of dominant species that are OBL, FACW, and/or FAC :				<u>4</u>	of	<u>6</u>	= <u>67%</u>
Remarks: <u>Unidentified grass assumed FAC</u>							

Soils:

Map Unit Name:	Drainage Class:				
<u>Riverwash</u>	<u>N/A - floodplain</u>				
Taxonomy:	Hydric soil? Yes				
Depth Horizon Matrix Color Redox Conc. Redox Desc.	Hydric inclusions?				
0-4"	10YR 3/2				Texture/Structure/etc
4-10"	10YR 4/2				sandy silt
					silty sand

Hydric soil indicators:

Histosol _____	Reducing Conditions _____	Organic streaking (in sandy soils) _____
Hist. Epipedon _____	Redox. Features (w/in 10") _____	Organic pan (in sandy soils) _____
Sulfidic Odor _____	Concretions/Nodules (w/in 3"; >2mm) _____	On Hydric Soils List _____
Gley/low chroma _____	High organic content in surface (in sandy soils) _____	Other _____

Remarks: _____

Hydrology:

Recorded Data Available? <u>Yes</u>	Aerial photos <u>X</u>	Strm. gauge _____	Other: _____
	<u>Primary Hydrology Indicators</u>		<u>Secondary Hydrology Indicators</u>
Depth of inundation: <u>NONE</u>	Inundated _____	Oxidized Root Channels (upper 12") _____	
Depth to saturation: <u>>18"</u>	Saturated in upper 12" _____	Water-stained leaves _____	
Depth to free water: <u>>18"</u>	Water marks _____	Local Soil Survey Data _____	
	Drift lines _____	FAC-Neutral Test _____	
	Sediment deposits _____	Other: _____	
	Drainage patterns _____		

Remarks: _____

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
 Is the hydric soil criterion met? NO
 Is the specific hydrology criterion met? NO
 Is this sampling point within a wetland? NO

Comments: _____

Wetland Determination Data Form

Damascus Natural Features Inventory

Location: South of Hoffeister Rd, west of 242nd
 Cowardin Class: PFO, PEM
 HGM Class: S/F
 Field Investigator(s): TB/RR
 Recent Weather: _____
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

WETLAND: NO-A-02 OFF SITE
 Map No: D5
 Plot No: OFF SITE
 WET/UPL: WET
 Date: 3/9/2007

Vegetation: Dominant Plant Species

Herb Stratum				Tree Stratum			
	Ind. status	% Cover	% rel. cover		Ind. status	% Cover	% rel. cover
Total cover: <u>65%</u>				Total cover: <u>25%</u>			
<i>Festuca arundinacea</i>	<u>FAC-</u>	<u>50%</u>	<u>76.9%</u>	<i>Fraxinus latifolia</i>	<u>FACW</u>	<u>10%</u>	<u>40.0%</u>
<i>Juncus effusus</i>	<u>FACW</u>	<u>15%</u>	<u>23.1%</u>	<i>Populus balsamifera v. trich</i>	<u>FAC</u>	<u>10%</u>	<u>40.0%</u>
				<i>Alnus rubra</i>	<u>FAC</u>	<u>5%</u>	<u>20.0%</u>
Sapling/ Shrub Stratum							
	Ind. status	% Cover	% rel. cover		Ind. status	% Cover	% rel. cover
Total cover: <u>15%</u>							
				<i>Cornus stolonifera</i> [<i>sericea</i>]	<u>FACW</u>	<u>15%</u>	<u>100.0%</u>
Percent of dominant species that are OBL, FACW, and/or FAC :				<u>5</u>	of	<u>6</u>	= <u>83%</u>

Remarks: _____

Soils:

Map Unit Name:	<u>Delena Silt loam, 3-12%</u>	Drainage Class:	<u>Poorly drained</u>
Taxonomy:	<u>Humic Fragiagupts</u>	Hydric soil?	<u>Yes</u>
Depth	Horizon	Matrix Color	Redox Conc.
		Redox Desc.	Texture/Structure/etc
OFF SITE			

Hydric soil indicators:

Histosol	Reducing Conditions	Organic streaking (in sandy soils)
Hist. Epipedon	Redox. Features (w/in 10")	Organic pan (in sandy soils)
Sulfidic Odor	Concretions/Nodules (w/in 3"; >2mm)	On Hydric Soils List <u>X</u>
Gley/low chroma	High organic content in surface (in sandy soils)	Other

Remarks: _____

Hydrology:

Recorded Data Available?	<u>Yes</u>	Aerial photos	<u>X</u>	Strm. gauge		Other:	<u>LIDAR</u>
		<i>Primary Hydrology Indicators</i>		<i>Secondary Hydrology Indicators</i>			
Depth of inundation:	<u>up to 6"</u>	Inundated	<u>X</u>	Oxidized Root Channels (upper 12")		Water-stained leaves	
Depth to saturation:	<u>0"</u>	Saturated in upper 12"	<u>X</u>	Local Soil Survey Data	<u>X</u>	FAC-Neutral Test	
Depth to free water:	<u>not sampled</u>	Water marks		Other:			
		Drift lines					
		Sediment deposits					
		Drainage patterns	<u>X</u>				

Remarks: _____

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
 Is the hydric soil criterion met? YES
 Is the specific hydrology criterion met? YES
 Is this sampling point within a wetland? YES

Comments: Boundary shows on NWI appears accurate

Wetland Determination Data Form

Damascus Natural Features Inventory

Location: North of Hoffeister Rd, east of 242nd
Cowardin Class:
HGM Class:
Field Investigator(s): ACS/TB/MB
Recent Weather: 2.01" of rain in last 14 days; 99% of normal
Do normal conditions exist on the site? Yes
Is the site significantly disturbed? No
Is the area a potential problem area? No

WETLAND: NO-A-03
Map No: D6
Plot No: DP 2
WET/UPL: UPL
Date: 3/13/2007

Vegetation: Dominant Plant Species

Table with columns for Herb Stratum, Tree Stratum, Sapling/ Shrub Stratum, Ind. status, % Cover, % rel. cover. Includes species like Agrostis tenuis, Lotus corniculatus, Anthoxanthum odoratum, Cirsium arvense, Rubus discolor, and Crataegus monogyna.

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

Soils:

Table with columns for Map Unit Name, Taxonomy, Depth, Horizon, Matrix Color, Redox Conc., Drainage Class, Hydric soil?, Redox Desc., Texture/Structure/etc. Includes Delena silt loam, 3-12% Humic fragiaquepts.

Hydric soil indicators:

Table with columns for Histosol, Reducing Conditions, Organic streaking, Hist. Epipedon, Redox. Features, Organic pan, Sulfidic Odor, Concretions/Nodules, On Hydric Soils List, Gley/low chroma, High organic content, Other.

Remarks:

Hydrology:

Table with columns for Recorded Data Available, Aerial photos, Strm. gauge, Other, Depth of inundation, Inundated, Oxidized Root Channels, Depth to saturation, Saturated in upper 12", Water-stained leaves, Depth to free water, Water marks, Local Soil Survey Data, Drift lines, FAC-Neutral Test, Sediment deposits, Drainage patterns, Other.

Remarks:

Wetland Determination:

Is the hydrophytic vegetation criterion met? NO
Is the hydric soil criterion met? YES
Is the specific hydrology criterion met? YES
Is this sampling point within a wetland? NO

Comments: Vegetation not supportive, appears water table perched. Near boundary defined by depth to saturation/water table, slight changes in dominant vegetation proportions, composition

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: RI-C-01 OFF SITE
Map No: E3
Plot No: OFF SITE
WET/UPL: WET
Date: 3/9/2007

Location: North of Sunnyside, west of Foster Rd.
Cowardin Class: PEM
HGM Class: S/F
Field Investigator(s): ACS/TB/RR
Recent Weather: 2.58" of rain in last 14 days; 17% above normal

Do normal conditions exist on the site? Yes
Is the site significantly disturbed? No
Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Table with columns: Herb Stratum, Ind. status, % Cover, % rel. cover, Tree Stratum, Ind. status, % Cover, % rel. cover. Includes species like Phalaris arundinacea, Juncus effusus, Scirpus microcarpus, Fraxinus latifolia, Cornus stolonifera, Spiraea douglasii, Rubus discolor.

Percent of dominant species that are OBL, FACW, and/or FAC : 3 of 3 = 100%
Remarks: Visual cover estimated from 2 offsite vantage points

Soils:

Table with columns: Map Unit Name, Taxonomy, Depth, Horizon, Matrix Color, Redox Conc., Drainage Class, Hydric soil?, Redox Desc., poorly drained, Hydric inclusions?, Yes, Texture/Structure/etc

Hydric soil indicators:

Histosol, Reducing Conditions, Organic streaking (in sandy soils)
Hist. Epipedon, Redox. Features (w/in 10"), Organic pan (in sandy soils)
Sulfidic Odor, Concretions/Nodules (w/in 3"; >2mm), On Hydric Soils List X
Gley/low chroma, High organic content in surface (in sandy soils), Other

Remarks: Wetland is within large hydric soils polygon

Hydrology:

Recorded Data Available? Yes
Aerial photos X
Strm. gauge
Other: LIDAR
Primary Hydrology Indicators: Inundated, Saturated in upper 12" X, Water marks, Drift lines, Sediment deposits, Drainage patterns X
Secondary Hydrology Indicators: Oxidized Root Channels (upper 12"), Water-stained leaves, Local Soil Survey Data X, FAC-Neutral Test, Other

Remarks: Saturation to surface in visible areas; patches of ponding

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
Is the hydric soil criterion met? YES
Is the specific hydrology criterion met? YES
Is this sampling point within a wetland? YES

Comments: Soils assumed based on local mapping

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: RI-C-02 OFF SITE
 Map No: E3
 Plot No: OFF SITE
 WET/UPL: WET
 Date: 3/9/2007

Location: North of Hwy 212 near Red Dirt Ln.
 Cowardin Class: PFO/PSS
 HGM Class: RFT/S
 Field Investigator(s): ACS/TB/RR
 Recent Weather: 2.58" of rain in past 14 days; 17% above normal

Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Herb Stratum				Tree Stratum			
	Ind. status	% Cover	% rel. cover		Ind. status	% Cover	% rel. cover
Total cover:	100%			Total cover:	80%		
<i>Carex obnupta</i>	OBL	80%	80.0%	<i>Fraxinus latifolia</i>	FACW	40%	50.0%
<i>Phalaris arundinacea</i>	FACW	20%	20.0%	<i>Salix babylonica</i>	FAC+	40%	50.0%
Sapling/ Shrub Stratum							
	Ind. status	% Cover	% rel. cover		Ind. status	% Cover	% rel. cover
Total cover:	35%						
				<i>Cornus stolonifera</i> [<i>sericea</i> , FACW		30%	85.7%
				<i>Rubus discolor</i> [<i>R. armeniac</i> , FACU		5%	14.3%

Percent of dominant species that are OBL, FACW, and/or FAC : 5 of 5 = 100%
 Remarks: PSME, THPL, HEHE, RUDI, ornamentals dominant in adjacent uplands. Cover is estimated, generalized from view from Hwy 212

Soils:

Map Unit Name: Borges silty clay loam, 0-8% Drainage Class: poorly drained
 Taxonomy: Typic Humaquepts Hydric soil? Yes Hydric inclusions? Yes
 Depth Horizon Matrix Color Redox Conc. Redox Desc. Texture/Structure/etc

Hydric soil indicators:

Histosol _____ Reducing Conditions _____ Organic streaking (in sandy soils) _____
 Hist. Epipedon _____ Redox. Features (w/in 10") _____ Organic pan (in sandy soils) _____
 Sulfidic Odor _____ Concretions/Nodules (w/in 3"; >2mm) _____ On Hydric Soils List X
 Gley/low chroma _____ High organic content in surface (in sandy soils) _____ Other _____
 Remarks: Mapped hydric; Possible hardpan supporting groundwater

Hydrology:

Recorded Data Available? Yes Aerial photos X Strm. gauge _____ Other: _____
Primary Hydrology Indicators Secondary Hydrology Indicators
 Depth of inundation: None visible Inundated _____ Oxidized Root Channels (upper 12") _____
 Depth to saturation: 0" assumed Saturated in upper 12" X Water-stained leaves _____
 Depth to free water: Not sampled Water marks _____ Local Soil Survey Data _____
 Drift lines _____ FAC-Neutral Test _____
 Sediment deposits _____ Other: _____
 Drainage patterns X

Remarks: Hydric source is combo of stream and ground/surface flow from adjacent higher ground. Stream is primary source.

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
 Is the hydric soil criterion met? YES
 Is the specific hydrology criterion met? YES
 Is this sampling point within a wetland? YES

Comments: Boundary follows edge of carex obnupta and topo breaks (in visible areas)

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: RI-D-01 **OFF SITE**

Location: West of Wiese, sout of Alder Springs Ct.
Cowardin Class: PEM/PSS
HGM Class: RFT
Field Investigator(s): ACS/TB
Recent Weather: 1.46" of rain in last 14 days; 74% of average
Do normal conditions exist on the site? Yes
Is the site significantly disturbed? No
Is the area a potential problem area? No

Map No: E3
Plot No: OFF SITE
WET/UPL: WET
Date: 3/21/2007

Vegetation: Dominant Plant Species

Herb Stratum				Tree Stratum			
Ind. status	% Cover	% rel. cover	Ind. status	% Cover	% rel. cover		
Total cover: 100%			Total cover: 20%				
<i>Unident. Grass, prob agr/poa</i> FAC-FACW	90%	90.0%	<i>Ainus rubra</i> FAC	20%	100.0%		
<i>Carex obnupta</i> OBL	5%	5.0%					
<i>Dipsacus sylvestris</i> [fullosun] FAC	5%	5.0%					
Sapling/ Shrub Stratum							
Ind. status	% Cover	% rel. cover	Ind. status	% Cover	% rel. cover		
Total cover: 5%							
			<i>Rubus spectabilis</i> FAC+	5%	100.0%		
Percent of dominant species that are OBL, FACW, and/or FAC :			3	of	3	=	100%

Remarks: Adjacent upland has ACMA, ALRU, SARA, RUDI, some PSME, OECE, POMU; Most shading from adjacent section

Soils:

Map Unit Name: Delena Silt Loam, 3-12%	Drainage Class: poorly drained
Taxonomy: Humic Fragiaquepts	Hydric soil? Yes
Depth Horizon Matrix Color Redox Conc.	Hydric inclusions? Yes
	Texture/Structure/etc

Hydric soil indicators:

Histosol	Reducing Conditions	Organic streaking (in sandy soils)
Hist. Epipedon	Redox. Features (w/in 10")	Organic pan (in sandy soils)
Sulfidic Odor	Concretions/Nodules (w/in 3"; >2mm)	On Hydric Soils List
Gley/low chroma	High organic content in surface (in sandy soils)	Other

Remarks:

Hydrology:

Recorded Data Available? Yes	Aerial photos X	Strm. gauge	Other:
	<i>Primary Hydrology Indicators</i>		<i>Secondary Hydrology Indicators</i>
Depth of inundation: stream	Inundated	Oxidized Root Channels (upper 12")	
Depth to saturation: not sampled	Saturated in upper 12"	Water-stained leaves	
Depth to free water: not sampled	Water marks	Local Soil Survey Data	
	Drift lines X	FAC-Neutral Test	
	Sediment deposits	Other:	
	Drainage patterns X		

Remarks: Narrow bench gets occasional overbank flow in rainy season. Stream bottom has gravels but heavily silted. 18" CMP under Alder Springs. Hydrology is riverine.

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
 Is the hydric soil criterion met? YES
 Is the specific hydrology criterion met? YES
 Is this sampling point within a wetland? YES

Comments: Boundary follows topo breaks, transition to upland vegetation (PSME, RUDI, OECE, SARA)

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: RO-A-01

Location: South of Hwy 212, west of Venice Ridge
 Cowardin Class: _____
 HGM Class: _____
 Field Investigator(s): TB/RR
 Recent Weather: 2.58" of rain in past 14 days; 17% above average
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Map No: F1
 Plot No: DP 2
 WET/UPL: UPL
 Date: 3/9/2007

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover: 80%				Total cover: 80%			
<i>Polystichum munitum</i>	FACU	40%	50.0%	<i>Acer macrophyllum</i>	FACU	70%	87.5%
<i>Dicentra formosa</i>	FACU	20%	25.0%	<i>Alnus rubra</i>	FAC	10%	12.5%
<i>Urtica dioica</i>	FAC+	5%	6.3%				
<i>Tellima grandiflora</i>	UPL	15%	18.8%				
<i>Carex deweyana</i>	FAC+	T					
				Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
				Total cover: 40%			
				<i>Corylus cornuta</i>	FACU	10%	25.0%
				<i>Rubus discolor</i> [R. armeniac	FACU	30%	75.0%
				<i>Ilex aquifolium</i>	UPL	T	
Percent of dominant species that are OBL, FACW, and/or FAC :				0	of	5	= 0%
Remarks: _____							

Soils:

Map Unit Name:	Woodburn silt loam, 3-8"	Drainage Class:	moderately well drained
Taxonomy:	Aquultic Argixerolls	Hydric soil?	No
Depth	Horizon	Matrix Color	Redox Conc.
0-18"		10 YR 3/3	
		Redox Desc.	Hydric inclusions? Yes
			Texture/Structure/etc
			clay loam

Hydric soil indicators:

Histosol _____	Reducing Conditions _____	Organic streaking (in sandy soils) _____
Hist. Epipedon _____	Redox. Features (w/in 10") _____	Organic pan (in sandy soils) _____
Sulfidic Odor _____	Concretions/Nodules (w/in 3"; >2mm) _____	On Hydric Soils List _____
Gley/low chroma _____	High organic content in surface (in sandy soils) _____	Other _____

Remarks: _____

Hydrology:

Recorded Data Available?	Yes	Aerial photos	X	Strm. gauge	_____	Other:	_____
		<i>Primary Hydrology Indicators</i>		<i>Secondary Hydrology Indicators</i>			
Depth of inundation:	NONE	Inundated	_____	Oxidized Root Channels (upper 12")	_____		
Depth to saturation:	>18"	Saturated in upper 12"	_____	Water-stained leaves	_____		
Depth to free water:	>18"	Water marks	_____	Local Soil Survey Data	_____		
		Drift lines	_____	FAC-Neutral Test	_____		
		Sediment deposits	_____	Other:	_____		
		Drainage patterns	_____				

Remarks: _____

Wetland Determination:

Is the hydrophytic vegetation criterion met? NO
 Is the hydric soil criterion met? NO
 Is the specific hydrology criterion met? NO
 Is this sampling point within a wetland? NO

Comments: Topo/ravine rises starts to rise here; vegetation and soil change, and hydrology drops out

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: RO-A-03

Location: North of Orchard View Ln.
 Cowardin Class: POW, PEM
 HGM Class: RFT
 Field Investigator(s): ACS/TB
 Recent Weather: 3.26" of rain in last 14 days; 69% above average

Map No: F1
 Plot No: DP 1
 WET/UPL: WET
 Date: 4/4/2007

Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	80%			Total cover:	0%		
<i>Glyceria elata</i>	FACW+	60%	75.0%				
<i>Veronica americana</i>	OBL	10%	12.5%				
<i>Athyrium filix-femina</i>	FAC	5%	6.3%				
<i>Ranunculus repens</i>	FACW	5%	6.3%				
<i>Lysichitum [[Lysichiton]] ame</i>	OBL	T					
<i>Solanum dulcamara</i>	FAC+	T					
				Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
				Total cover:	0%		
Percent of dominant species that are OBL, FACW, and/or FAC :				1	of	1	= 100%

Remarks: Blackberry extends to topo break

Soils:

Map Unit Name:	Bornstedt silt loam, 15-30%	Drainage Class:	moderately well drained
Taxonomy:	typic haploxerults	Hydric soil?	No
Depth	Horizon	Matrix Color	Redox Conc.
0-18"		10 YR 4/1 - 4/2	7.5 YR 5/1
			7.5 YR 4/6
		Redox Desc.	Texture/Structure/etc
		common, med, dist. in matrix	silt loam
		many, med, dist. in matrix and around depletions	

Hydric soil indicators:

Histosol	Reducing Conditions	Organic streaking (in sandy soils)
Hist. Epipedon	Redox. Features (w/in 10")	Organic pan (in sandy soils)
Sulfidic Odor	Concretions/Nodules (w/in 3"; >2mm)	On Hydric Soils List
Gley/low chroma	High organic content in surface (in sandy soils)	Other
Remarks:	<u>Near edge of previous inundated area</u>	

Hydrology:

Recorded Data Available?	Yes	Aerial photos	X	Strm. gauge		Other:	
		<i>Primary Hydrology Indicators</i>		<i>Secondary Hydrology Indicators</i>			
Depth of inundation:	NONE	Inundated	X	Oxidized Root Channels (upper 12")			
Depth to saturation:	surface	Saturated in upper 12"	X	Water-stained leaves			
Depth to free water:	1"	Water marks	X	Local Soil Survey Data			
		Drift lines	X	FAC-Neutral Test			
		Sediment deposits	X	Other:			
		Drainage patterns					
Remarks:	<u>Sediment on vegetation</u>						

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
 Is the hydric soil criterion met? YES
 Is the specific hydrology criterion met? YES
 Is this sampling point within a wetland? YES

Comments: _____

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: RO-A-03

Location: North of Orchard View Ln.
 Cowardin Class: _____
 HGM Class: _____
 Field Investigator(s): ACS/TB
 Recent Weather: 3.26" of rain in last 14 days; 69% above average
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Map No: F1
 Plot No: DP 2
 WET/UPL: UPL
 Date: 4/4/2007

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	30%			Total cover:	0%		
<i>Cardamine oligosperma</i>	FAC	15%	50.0%				
<i>Epilobium species</i>	-	5%	16.7%				
<i>Geum macrophyllum</i>	FACW+	T					
<i>Tellima grandiflora</i>	UPL	T					
<i>Athyrium filix-femina</i>	FAC	T					
<i>Geranium robertianum</i>	UPL	T					
<i>Ranunculus repens</i>	FACW	5%	16.7%				
<i>Polystichum munitum</i>	FACU	5%	33.3%				
				Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
				Total cover:	20%		
				<i>Corylus cornuta</i>	FACU	10%	50.0%
				<i>Rubus discolor</i> [R. armeniac	FACU	10%	2.4%
				<i>Ilex aquifolium</i>	UPL	T	

Percent of dominant species that are OBL, FACW, and/or FAC : 1 of 4 = 25%

Remarks: Rubus has been brushhogged, cover was >90% before removal. Corridor also has FRLA, THPL, ACMA, POBA. PSME on much higher ground. Some SARA.

Soils:

Map Unit Name:	Bornstedt	Drainage Class:	moderately well drained
Taxonomy:	typic haproxerults	Hydric soil?	Hydric inclusions?
Depth	Horizon	Matrix Color	Redox Conc.
0-7"		10 YR 3/3	
7-18"		7.5 YR 4/4	
		Redox Desc.	Texture/Structure/etc
			silt loam
			silt loam

Hydric soil indicators:

Histosol _____ Reducing Conditions _____ Organic streaking (in sandy soils) _____
 Hist. Epipedon _____ Redox. Features (w/in 10") _____ Organic pan (in sandy soils) _____
 Sulfidic Odor _____ Concretions/Nodules (w/in 3"; >2mm) _____ On Hydric Soils List _____
 Gley/low chroma _____ High organic content in surface (in sandy soils) _____ Other _____

Remarks: _____

Hydrology:

Recorded Data Available? Yes Aerial photos X Strm. gauge _____ Other: _____
Primary Hydrology Indicators Secondary Hydrology Indicators
 Depth of inundation: _____ Inundated _____ Oxidized Root Channels (upper 12") _____
 Depth to saturation: _____ Saturated in upper 12" _____ Water-stained leaves _____
 Depth to free water: _____ Water marks _____ Local Soil Survey Data _____
 _____ Drift lines _____ FAC-Neutral Test _____
 _____ Sediment deposits _____ Other: _____
 _____ Drainage patterns _____

Remarks: About 3' above toe of slope. No hydro. indicators

Wetland Determination:

Is the hydrophytic vegetation criterion met? NO
 Is the hydric soil criterion met? NO
 Is the specific hydrology criterion met? NO
 Is this sampling point within a wetland? NO

Comments: Boundary @ toe well defined by slope, veg, inundation extent; water source is stream, saw no seepage from slope.

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: RO-D-01
 Map No: A2, B2
 Plot No: DP 1
 WET/UPL: WET
 Date: 3/6/2007

Location: West of Foster, north of Hemrick Rd.
 Cowardin Class: PFO, PEM, POW
 HGM Class: SH
 Field Investigator(s): ACS/TB/MB
 Recent Weather: 3.22" of rain in last 14 days; 139% of normal
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	90%			Total cover:	0%		
<i>Juncus effusus</i>	FACW	60%	66.7%				
<i>Lotus corniculatus</i>	FAC	5%	5.6%				
<i>Phalaris arundinacea</i>	FACW	5%	5.6%				
<i>Agrostis tenuis</i> [[<i>capillaris</i>]]	FAC	20%	* 22.2%				
				Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
				Total cover:	0%		
				<i>Rubus discolor</i> [<i>R. armeniac</i>]	FACU	T	

Percent of dominant species that are OBL, FACW, and/or FAC : 2 of 2 = 100%
 Remarks: Edge of Phalaris dominance. Phalaris dominant to near monoculture lower down.

Soils:

Map Unit Name:	Huberly silt loam, 0-3%	Drainage Class:	poorly drained
Taxonomy:	Typic Fragiaquepts	Hydric soil?	Yes
Depth	Horizon	Matrix Color	Redox Conc.
0-7"		10 YR 3/2	7.5 YR 4/4
7-18"		2.5 Y 5/1	10 YR 4/6
		Redox Desc.	Texture/Structure/etc
		matrix; common, med, prom.	silty clay loam
		matrix; many, med, prom.	silty clay loam clayier than above

Hydric soil indicators:
 Histosol _____ Reducing Conditions _____ Organic streaking (in sandy soils) _____
 Hist. Epipedon _____ Redox. Features (w/in 10") X _____ Organic pan (in sandy soils) _____
 Sulfidic Odor _____ Concretions/Nodules (w/in 3"; >2mm) _____ On Hydric Soils List X _____
 Gley/low chroma X _____ High organic content in surface (in sandy soils) _____ Other _____

Remarks: Soils in area tend to perch

Hydrology:

Recorded Data Available? Yes Aerial photos X Strm. gauge _____ Other: _____
Primary Hydrology Indicators Secondary Hydrology Indicators
 Depth of inundation: NONE Inundated _____ Oxidized Root Channels (upper 12") _____
 Depth to saturation: 7" Saturated in upper 12" X Water-stained leaves _____
 Depth to free water: 9" Water marks _____ Local Soil Survey Data _____
 Drift lines _____ FAC-Neutral Test _____
 Sediment deposits _____ Other: _____
 Drainage patterns _____

Remarks: Hummocky - some shallow ponding in interstitial spaces nearby; Primary water source: seepage from side slopes into swale at bottom.

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
 Is the hydric soil criterion met? YES
 Is the specific hydrology criterion met? YES
 Is this sampling point within a wetland? YES

Comments: Plot above bottom of swale at PHAR/RUDI dominance transition. Water seeping from sideslopes, flowing in from higher in watershed (subsurface).

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: RO-D-01

Location: West of Foster, north of Hemrick Rd.
 Cowardin Class: PFO, PEM, POW
 HGM Class: SH
 Field Investigator(s): ACS/TB/MB
 Recent Weather: 3.22" of rain in last 14 days; 139% of normal

Map No: A2, B2
 Plot No: DP 3
 WET/UPL: WET
 Date: 3/6/2007

Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	100%			Total cover:	0%		
<i>Agrostis tenuis</i> [[capillaris]]	FAC	75%	75.0%				
<i>Lotus corniculatus</i>	FAC	10%	10.0%				
<i>Ranunculus repens</i>	FACW	10%	10.0%				
<i>Holcus lanatus</i>	FAC	5%	5.0%				

Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
Total cover:	0%		

Percent of dominant species that are OBL, FACW, and/or FAC : 1 of 1 = 100%

Remarks: _____

Soils:

Map Unit Name:	Huberly silt loam, 0-3"	Drainage Class:	poorly drained
Taxonomy:	Typic Fragiaquepts	Hydric soil?	Yes
Depth	Horizon	Matrix Color	Redox Conc.
0-3"		10 YR 3/2	
3-16"		10 YR 4/3	7.5 YR 5/6; many, medium on ped faces, few medium soft Mn masses
			more redox with increasing depth

Hydric soil indicators:
 Histosol _____ Reducing Conditions X Organic streaking (in sandy soils) _____
 Hist. Epipedon _____ Redox. Features (w/in 10") X Organic pan (in sandy soils) _____
 Sulfidic Odor _____ Concretions/Nodules (w/in 3"; >2mm) _____ On Hydric Soils List X
 Gley/low chroma _____ High organic content in surface (in sandy soils) _____ Other _____

Remarks: Perched water table on top of hardpan @ 16". Soil marginal - 3 chroma matrix, heavy mottling. Soil indicator met on basis of observation of reducing conditions. Soil matrix color of 3 may be artifact of red parent material. Heavy redox the result of current hydrology

Hydrology:

Recorded Data Available? Yes Aerial photos X Strm. gauge _____ Other: _____
Primary Hydrology Indicators Secondary Hydrology Indicators
 Depth of inundation: NONE Inundated _____ Oxidized Root Channels (upper 12") _____
 Depth to saturation: 2" Saturated in upper 12" X _____ Water-stained leaves _____
 Depth to free water: 9" Water marks _____ Local Soil Survey Data _____
 _____ Drift lines _____ FAC-Neutral Test _____
 _____ Sediment deposits _____ Other: _____
 _____ Drainage patterns _____

Remarks: Hydrology is subsurface water movement from upslope. No surface water here.

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
 Is the hydric soil criterion met? YES
 Is the specific hydrology criterion met? YES
 Is this sampling point within a wetland? YES

Comments: Plot taken just inside boundary.

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: RO-D-01 OFF SITE

Location: West of Foster, north of Hemrick Rd.
Cowardin Class: PFO, PEM, POW
HGM Class: SH
Field Investigator(s): ACS/TB/MB
Recent Weather: 3.22" of rain in last 14 days; 139% of normal

Map No: A2, B2
Plot No: DP 5 OFF SITE
WET/UPL: WET
Date: 3/6/2007

Do normal conditions exist on the site? Yes
Is the site significantly disturbed? No
Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Table with columns: Herb Stratum, Ind. status, % Cover, % rel. cover, Tree Stratum, Ind. status, % Cover, % rel. cover. Includes species like Juncus effusus, Lotus corniculatus, Phalaris arundinacea, Rosa pisocarpa.

Percent of dominant species that are OBL, FACW, and/or FAC : 4 of 4 = 100%
Remarks: Trace of RUDI and CRDO along fenceline.

Soils:

Table with columns: Map Unit Name, Taxonomy, Depth, Horizon, Matrix Color, Redox Conc., Drainage Class, Hydric soil?, Redox Desc., poorly drained, Hydric inclusions?, Yes, Texture/Structure/etc.

Hydric soil indicators:

Histosol, Reducing Conditions, Organic streaking (in sandy soils)
Hist. Epipedon, Redox. Features (w/in 10"), Organic pan (in sandy soils)
Sulfidic Odor, Concretions/Nodules (w/in 3"; >2mm), On Hydric Soils List X
Gley/low chroma, High organic content in surface (in sandy soils), Other

Remarks: Mapped hydric

Hydrology:

Recorded Data Available? Yes
Aerial photos X
Strm. gauge
Other:
Primary Hydrology Indicators: Depth of inundation: not observed, Inundated
Secondary Hydrology Indicators: Oxidized Root Channels (upper 12"), Water-stained leaves
Depth to saturation: not observed, Saturated in upper 12"
Water marks
Depth to free water: not observed, Drift lines
Sediment deposits
Drainage patterns

Remarks: Ditched tributary. Unclear if margins meet wetland hydrology. Meet FAC-neutral and mapped hydric in margins.

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
Is the hydric soil criterion met? YES
Is the specific hydrology criterion met? YES
Is this sampling point within a wetland? YES

Comments:

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: RO-E-01

Location: East of Foster at Hemrick Rd.
 Cowardin Class: _____
 HGM Class: _____
 Field Investigator(s): ACS/TB/RR/MB
 Recent Weather: 1.72" of rain in last 14 days, 88% of normal
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Map No: B2
 Plot No: DP 1
 WET/UPL: UPL
 Date: 3/16/2007

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	100%			Total cover:	0%		
<i>Lotus corniculatus</i>	FAC	25%	25.0%				
<i>Trifolium repens</i>	FAC	25%	25.0%				
<i>Hypochaeris radicata</i>	FACU	5%	5.0%				
<i>Agrostis stolonifera</i>	FAC	40%	40.0%				
<i>Ranunculus repens</i>	FACW	3%	3.0%				
<i>Parentucellia viscosa</i>	FAC-	2%	2.0%				
				Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
				Total cover:	0%		
Percent of dominant species that are OBL, FACW, and/or FAC :				3	of	3	= 100%

Remarks: _____

Soils:

Map Unit Name:	Powell silt loam, 0-8% slopes	Drainage Class:	somewhat poorly drained
Taxonomy:	Typic Fragiocrepts	Hydric soil?	No
Depth	Horizon	Matrix Color	Redox Conc.
0-16"		10 YR 4/3	
		Redox Desc.	Hydric inclusions? Yes
			Texture/Structure/etc
			silt loam / subangular blocky

Hydric soil indicators:

Histosol	Reducing Conditions	Organic streaking (in sandy soils)
Hist. Epipedon	Redox. Features (w/in 10")	Organic pan (in sandy soils)
Sulfidic Odor	Concretions/Nodules (w/in 3"; >2mm)	On Hydric Soils List
Gley/low chroma	High organic content in surface (in sandy soils)	Other

Remarks: _____

Hydrology:

Recorded Data Available?	Yes	Aerial photos	X	Strm. gauge	_____	Other:	_____
		<i>Primary Hydrology Indicators</i>		<i>Secondary Hydrology Indicators</i>			
Depth of inundation:	NONE	Inundated	_____	Oxidized Root Channels (upper 12")	_____		
Depth to saturation:	>16"	Saturated in upper 12"	_____	Water-stained leaves	_____		
Depth to free water:	>16"	Water marks	_____	Local Soil Survey Data	_____		
		Drift lines	_____	FAC-Neutral Test	_____		
		Sediment deposits	_____	Other:	_____		
		Drainage patterns	_____				

Remarks: _____

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
 Is the hydric soil criterion met? NO
 Is the specific hydrology criterion met? NO
 Is this sampling point within a wetland? NO

Comments: Slope about 100' downslope fro PSME grove

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: RO-E-01
 Map No: B2
 Plot No: DP 2
 WET/UPL: WET
 Date: 3/16/2007

Location: East of Foster at Hemrick Rd.
 Cowardin Class: PEM
 HGM Class: SV
 Field Investigator(s): RR/MB
 Recent Weather: 1.72" of rain in past 14 days; 88% of normal
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	100%			Total cover:	0%		
<i>Ranunculus repens</i>	FACW	10%	10.0%				
<i>Lotus corniculatus</i>	FAC	20%	20.0%				
Unknown grass		10%	10.0%				
<i>Epilobium watsonii [ciliatum]</i>	FACW-	T					
<i>Agrostis stolonifera</i>	FAC	60%	60.0%				
				Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
				Total cover:	0%		
Percent of dominant species that are OBL, FACW, and/or FAC :					2	of	2 = 100%

Remarks:

Soils:

Map Unit Name:	Powell silt loam, 0-8% slope	Drainage Class:	somewhat poorly drained
Taxonomy:	Typic Fragioglepts	Hydric soil?	No
Depth	Horizon	Matrix Color	Redox Conc.
0-16"		10 YR 4/3	10 YR 4/6
		Redox Desc.	many, med, dist.
		Texture/Structure/etc	silt loam clay / chunky

Hydric soil indicators:

Histosol	Reducing Conditions	X	Organic streaking (in sandy soils)
Hist. Epipedon	Redox. Features (w/in 10")	X	Organic pan (in sandy soils)
Sulfidic Odor	Concretions/Nodules (w/in 3"; >2mm)		On Hydric Soils List
Gley/low chroma	High organic content in surface (in sandy soils)		Other

Remarks: Reducing conditions observed.

Hydrology:

Recorded Data Available?	Yes	Aerial photos	X	Strm. gauge		Other:	
		<i>Primary Hydrology Indicators</i>		<i>Secondary Hydrology Indicators</i>			
Depth of inundation:	NONE	Inundated		Oxidized Root Channels (upper 12")		Water-stained leaves	
Depth to saturation:	4"	Saturated in upper 12"	X	Local Soil Survey Data		FAC-Neutral Test	
Depth to free water:	10"	Water marks		Other:			
		Drift lines					
		Sediment deposits					
		Drainage patterns	X				

Remarks:

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
 Is the hydric soil criterion met? YES
 Is the specific hydrology criterion met? YES
 Is this sampling point within a wetland? YES

Comments: Wetland fed by seep water and surface flow; ponding observed in some (small) areas. Horse pasture with wet seep.

Wetland Determination Data Form

Damascus Natural Features Inventory

Location: East end of Heuke Rd.
 Cowardin Class: _____
 HGM Class: _____
 Field Investigator(s): RR/MB
 Recent Weather: 1.72" of rain in past 14 days; 88% of average
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

WETLAND: RO-F-02
 Map No: C3
 Plot No: DP 1
 WET/UPL: UPL
 Date: 3/16/2007

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	60%			Total cover:	30%		
<i>Galium aparine</i>	FACU	10%	16.7%	<i>Pseudotsuga menziesii</i>	FACU	25%	83.3%
<i>Poa pratensis</i>	FAC	40% *	66.7%	<i>Alnus rubra</i>	FAC	5%	16.7%
<i>Dactylis glomerata</i>	FACU	5%	8.3%				
<i>Aster sp.</i>		5%	8.3%				
				Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
				Total cover:	45%		
				<i>Oemleria cerasiformis</i>	FACU	10%	22.2%
				<i>Rubus discolor</i> [R. armeniac	FACU	15%	33.3%
				<i>Ilex aquifolium</i>	UPL	5%	11.1%
				<i>Rubus ursinus</i>	FACU	5%	11.1%
				<i>Corylus cornuta</i>	FACU	5%	11.1%
				<i>Malva neglecta</i>	UPL	5%	11.1%
Percent of dominant species that are OBL, FACW, and/or FAC :				<u>1</u> of <u>4</u> = <u>25%</u>			

Remarks: _____

Soils:

Map Unit Name:	Delena silt loam, 3-12%		Drainage Class:	poorly drained
Taxonomy:	Humic Fragiaquepts		Hydric soil?	Yes
Depth	Horizon	Matrix Color	Redox Conc.	Redox Desc.
0-16"	uniform	7.5 YR 3/3		Hydric inclusions? Yes
				Texture/Structure/etc
				silt loam / dry, moderate crumbly

Hydric soil indicators:

Histosol	Reducing Conditions	Organic streaking (in sandy soils)
Hist. Epipedon	Redox. Features (w/in 10")	Organic pan (in sandy soils)
Sulfidic Odor	Concretions/Nodules (w/in 3"; >2mm)	On Hydric Soils List
Gley/low chroma	High organic content in surface (in sandy soils)	Other

Remarks: _____

Hydrology:

Recorded Data Available?	Yes	Aerial photos	X	Strm. gauge	_____	Other:	_____
		<i>Primary Hydrology Indicators</i>		<i>Secondary Hydrology Indicators</i>			
Depth of inundation:	NONE	Inundated	_____	Oxidized Root Channels (upper 12")	_____	Water-stained leaves	_____
Depth to saturation:	>16"	Saturated in upper 12"	_____	Local Soil Survey Data	_____	FAC-Neutral Test	_____
Depth to free water:	>16"	Water marks	_____	Other:	_____		_____
		Drift lines	_____				
		Sediment deposits	_____				
		Drainage patterns	_____				

Remarks: _____

Wetland Determination:

Is the hydrophytic vegetation criterion met? NO
 Is the hydric soil criterion met? NO
 Is the specific hydrology criterion met? NO
 Is this sampling point within a wetland? NO

Comments: Pit on rise under large PSME at wet boundary & riparian zone. Soil does not match mapped hydric soil description.

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: RO-F-02

Location: East end of Heuke Rd.
 Cowardin Class: _____
 HGM Class: _____
 Field Investigator(s): RR/MB

Map No: C3
 Plot No: DP 2
 WET/UPL: UPL
 Date: 3/16/2007

Recent Weather: 1.72" of rain in past 14 days; 88% of average

Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	100%			Total cover:	0%		
<i>Juncus effusus</i>	FACW	10%	10.0%				
<i>Poa pratensis</i>	FAC	65%	65.0%				
<i>Geranium molle</i>	UPL	10%	10.0%				
<i>Hypochaeris radicata</i>	FACU	T					
<i>Rumex crispus</i>	FAC+	5%	5.0%				
<i>Lotus corniculatus</i>	FAC	5%	5.0%				
<i>Cardamine oligosperma</i>	FAC	T					
<i>Myosotis laxa</i>	OBL	T	*				
<i>Holcus mollis</i>	FACU	5%	5.0%				

Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
Total cover:	0%		

Percent of dominant species that are OBL, FACW, and/or FAC :

1 of 1 = 100%

Remarks: _____

Soils:

Map Unit Name:	Delena silt loam, 3-12%	Drainage Class:	poorly drained
Taxonomy:	Humic Fragiaquepts	Hydric soil?	Yes
Depth	Horizon	Matrix Color	Redox Conc.
0-16"	uniform	10 YR 3/4	
		Redox Desc.	Hydric inclusions? Yes
			Texture/Structure/etc
			silt loam / subangular blocky

Hydric soil indicators:

Histosol	Reducing Conditions	Organic streaking (in sandy soils)
Hist. Epipedon	Redox. Features (w/in 10")	Organic pan (in sandy soils)
Sulfidic Odor	Concretions/Nodules (w/in 3"; >2mm)	On Hydric Soils List
Gley/low chroma	High organic content in surface (in sandy soils)	Other

Remarks: _____

Hydrology:

Recorded Data Available?	Yes	Aerial photos	X	Strm. gauge	Other:
		<i>Primary Hydrology Indicators</i>			
Depth of inundation:	patches	Inundated	X	<i>Secondary Hydrology Indicators</i>	
Depth to saturation:	surface	Saturated in upper 12"	X	Oxidized Root Channels (upper 12")	
Depth to free water:	3"	Water marks		Water-stained leaves	
		Drift lines		Local Soil Survey Data	
		Sediment deposits		FAC-Neutral Test	
		Drainage patterns	X	Other:	

Remarks: _____

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
 Is the hydric soil criterion met? NO
 Is the specific hydrology criterion met? YES
 Is this sampling point within a wetland? NO

Comments: Wetland vegetation and hydrology fingered through open field (Christmas tree farm in area too wet for trees). Arguably, this plot could meet soil on 'reducing conditions' with a water table at 3". With no wet plots in immediate vicinity, this would be an isolated seep wetland (and could be designated PW)

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: RO-F-02

Location: East end of Heuke Rd.
 Cowardin Class: PEM, PFO
 HGM Class: RFT, SV
 Field Investigator(s): RR/MB
 Recent Weather: 1.72" of rain in past 14 days; 88% of average

Map No: C3
 Plot No: DP 3
 WET/UPL: WET
 Date: 3/16/2007

Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	100%			Total cover:	0%		
<i>Poa pratensis</i>	FAC	35%	35.0%				
<i>Juncus effusus</i>	FACW	5%	5.0%				
<i>Unk. thistle</i>	T						
<i>Rumex crispus</i>	FAC+	T					
<i>Geranium molle</i>	UPL	T					
<i>Hypochaeris radicata</i>	FACU	5%	5.0%				
<i>Lotus corniculatus</i>	FAC	T					
<i>Epilobium watsonii [ciliatum]</i>	FACW-	10%	10.0%				
<i>Holcus mollis</i>	FACU	5%	5.0%				
<i>Veronica americana</i>	OBL	10%	10.0%				
<i>Phalaris arundinacea</i>	FACW	30%	30.0%				
				Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
				Total cover:	25%		
				<i>Rubus discolor [R. armeniac]</i>	FACU	25%	100.0%

Percent of dominant species that are OBL, FACW, and/or FAC : 2 of 3 = 67%

Remarks: _____

Soils:

Map Unit Name:	<u>Delena silt loam, 3-12%</u>	Drainage Class:	<u>poorly drained</u>
Taxonomy:	<u>Humic Fragiaquepts</u>	Hydric soil?	<u>Yes</u>
Depth	Horizon	Matrix Color	Redox Conc.
0-10"		10 YR 3/1	
>10"		10 YR 3/3	10 YR 4/6
			common/med/distinct
			Hydric inclusions? <u>Yes</u>
			Texture/Structure/etc
			<u>silt loam / mod to strong</u>
			<u>silty clay loam</u>

Hydric soil indicators:

Histosol	Reducing Conditions	Organic streaking (in sandy soils)
Hist. Epipedon	Redox. Features (w/in 10") <u>X</u>	Organic pan (in sandy soils)
Sulfidic Odor	Concretions/Nodules (w/in 3"; >2mm)	On Hydric Soils List <u>X</u>
Gley/low chroma <u>X</u>	High organic content in surface (in sandy soils)	Other

Remarks: _____

Hydrology:

Recorded Data Available?	<u>No</u>	Aerial photos	<u>_____</u>	Strm. gauge	<u>_____</u>	Other:	<u>_____</u>
		<u>Primary Hydrology Indicators</u>				<u>Secondary Hydrology Indicators</u>	
Depth of inundation:	<u>patches</u>	Inundated	<u>X</u>	Oxidized Root Channels (upper 12")	<u>_____</u>	Water-stained leaves	<u>_____</u>
Depth to saturation:	<u>surface</u>	Saturated in upper 12"	<u>X</u>	Local Soil Survey Data	<u>_____</u>	FAC-Neutral Test	<u>_____</u>
Depth to free water:	<u>0"</u>	Water marks	<u>_____</u>	Other:	<u>_____</u>		<u>_____</u>
		Drift lines	<u>_____</u>				
		Sediment deposits	<u>_____</u>				
		Drainage patterns	<u>X</u>				

Remarks: _____

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
 Is the hydric soil criterion met? YES
 Is the specific hydrology criterion met? YES
 Is this sampling point within a wetland? YES

Comments: _____

Wetland Determination Data Form

Damascus Natural Features Inventory

Location: East end of Heuke Rd.
 Cowardin Class: _____
 HGM Class: _____
 Field Investigator(s): RR/MB
 Recent Weather: 1.72" of rain in past 14 days; 88% of average
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

WETLAND: RO-F-02
 Map No: C3
 Plot No: PLOT 4
 WET/UPL: UPL
 Date: 3/16/2007

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	100%			Total cover:	0%		
<i>Poa pratensis</i>	FAC	30%	30.0%				
<i>Holcus mollis</i>	FACU	30%	30.0%				
<i>Geranium molle</i>	UPL	10%	10.0%				
<i>Hypochaeris radicata</i>	FACU	5%	5.0%				
<i>Taraxacum officinale</i>	FACU	T					
<i>Cirsium arvense</i>	FACU+	10%	10.0%				
<i>Epilobium watsonii [ciliatum]</i>	FACW-	15%	15.0%				
				Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
				Total cover:	20%		
				<i>Rubus discolor [R. armeniac]</i>	FACU	20%	100.0%
				<i>Alnus rubra</i>	FAC	T	
Percent of dominant species that are OBL, FACW, and/or FAC :				1	of	3	= 33%

Remarks: _____

Soils:

Map Unit Name:	<u>Delena silt loam, 3-12%</u>	Drainage Class:	<u>poorly drained</u>
Taxonomy:	<u>Humic Fragiaquepts</u>	Hydric soil?	<u>Yes</u>
Depth	Horizon	Matrix Color	Redox Conc.
0-16"		7.5 YR 4/6	few
			Redox Desc.
			<u>silt loam / dry/ mod/ crumbly</u>

Hydric soil indicators:

Histosol _____	Reducing Conditions _____	Organic streaking (in sandy soils) _____
Hist. Epipedon _____	Redox. Features (w/in 10") _____	Organic pan (in sandy soils) _____
Sulfidic Odor _____	Concretions/Nodules (w/in 3"; >2mm) _____	On Hydric Soils List _____
Gley/low chroma _____	High organic content in surface (in sandy soils) _____	Other _____

Remarks: _____

Hydrology:

Recorded Data Available?	<u>Yes</u>	Aerial photos	<u>X</u>	Strm. gauge	_____	Other:	_____
		<i>Primary Hydrology Indicators</i>		<i>Secondary Hydrology Indicators</i>			
Depth of inundation:	<u>NONE</u>	Inundated	_____	Oxidized Root Channels (upper 12")	_____	Water-stained leaves	_____
Depth to saturation:	<u>>16"</u>	Saturated in upper 12"	_____	Local Soil Survey Data	_____	FAC-Neutral Test	_____
Depth to free water:	<u>>16"</u>	Water marks	_____	Other:	_____		_____
		Drift lines	_____				
		Sediment deposits	_____				
		Drainage patterns	_____				

Remarks: _____

Wetland Determination:

Is the hydrophytic vegetation criterion met? NO
 Is the hydric soil criterion met? NO
 Is the specific hydrology criterion met? NO
 Is this sampling point within a wetland? NO

Comments: _____

Wetland Determination Data Form

Damascus Natural Features Inventory

Location: East of 242nd, N of Sunshine Valley Rd.
 Cowardin Class: _____
 HGM Class: _____
 Field Investigator(s): ACS/MB
 Recent Weather: 3.22" of rain in past 14 days; 39% above average
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

WETLAND: SU-A-02
 Map No: B6
 Plot No: DP 2
 WET/UPL: UPL
 Date: 3/6/2007

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	100%			Total cover:	0%		
<i>Deschampsia cespitosa</i>	FACW	20%	20.0%				
<i>Agrostis alba</i>	FAC	60%	* 60.0%				
<i>Poa species</i>	-	15%	15.0%				
<i>Cirsium arvense</i>	FACU+	5%	5.0%				

Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
Total cover:	0%		

Percent of dominant species that are OBL, FACW, and/or FAC : 2 of 2 = 100%

Remarks: Mowed. Above area dominated by JUEF, CAO B

Soils:

Map Unit Name:	<u>Delena silt loam, 3-12%</u>	Drainage Class:	<u>poorly drained</u>
Taxonomy:	<u>Humic Fragiaquepts</u>	Hydric soil?	<u>Yes</u>
Depth	Horizon	Matrix Color	Redox Conc.
0-9"		<u>7.5 YR 3/2</u>	
9-14"		<u>7.5 YR 4/2</u>	<u>2.5 YR 3/6</u>
			<u>few, med, prom, pores</u>
			<u>silt loam</u>
			<u>silt loam</u>

Hydric soil indicators:

Histosol	Reducing Conditions	Organic streaking (in sandy soils)
Hist. Epipedon	Redox. Features (w/in 10") <u>X</u>	Organic pan (in sandy soils)
Sulfidic Odor	Concretions/Nodules (w/in 3"; >2mm)	On Hydric Soils List
Gley/low chroma	High organic content in surface (in sandy soils)	Other <u>X</u>

Remarks: X - Used soil probe - depths; Redox in top 10"

Hydrology:

Recorded Data Available?	<u>Yes</u>	Aerial photos	<u>X</u>	Strm. gauge	_____	Other:	_____
		<u>Primary Hydrology Indicators</u>		<u>Secondary Hydrology Indicators</u>			
Depth of inundation:	<u>NONE</u>	<u>Inundated</u>		<u>Oxidized Root Channels (upper 12")</u>			
Depth to saturation:	<u>>16"</u>	<u>Saturated in upper 12"</u>		<u>Water-stained leaves</u>			
Depth to free water:	<u>>16"</u>	<u>Water marks</u>		<u>Local Soil Survey Data</u>			
		<u>Drift lines</u>		<u>FAC-Neutral Test</u>			
		<u>Sediment deposits</u>		<u>Other:</u>			
		<u>Drainage patterns</u>		_____			

Remarks: No saturation in pit.

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
 Is the hydric soil criterion met? YES
 Is the specific hydrology criterion met? NO
 Is this sampling point within a wetland? NO

Comments: Not on property line

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: SU-A-02
Map No: B6
Plot No: DP 3
WET/UPL: WET
Date: 3/6/2007

Location: East of 242nd, N of Sunshine Valley Rd.
Cowardin Class: PFO, PEM
HGM Class: SV/RFT
Field Investigator(s): ACS/MB
Recent Weather: 3.22" of rain in past 14 days; 39% above average
Do normal conditions exist on the site? Yes
Is the site significantly disturbed? No
Is the area a potential problem area? No

Vegetation: Dominant Plant Species

Table with columns: Herb Stratum, Ind. status, % Cover, % rel. cover, Tree Stratum, Ind. status, % Cover, % rel. cover. Includes species like Phalaris arundinacea, Scirpus microcarpus, Epilobium watsonii, Juncus effusus, Ranunculus repens, Unidentified grass (Poa?), Alnus rubra, Fraxinus latifolia, Lonicera involucrata, Rubus discolor.

Percent of dominant species that are OBL, FACW, and/or FAC : 3 of 4 = 75%
Remarks: Northern edge of Fra lat forest

Soils:

Table with columns: Map Unit Name, Taxonomy, Depth, Horizon, Matrix Color, Redox Conc., Drainage Class, Hydric soil?, Redox Desc., Texture/Structure/etc. Includes Delena silt loam, 3-12% Humic Fragiaquepts.

Hydric soil indicators: Histosol, Reducing Conditions, Organic streaking (in sandy soils), Hist. Epipedon, Redox. Features (w/in 10") X, Organic pan (in sandy soils), Sulfidic Odor, Concretions/Nodules (w/in 3"; >2mm), On Hydric Soils List X, Gley/low chroma X, High organic content in surface (in sandy soils), Other

Remarks: Brighter surface soil layer is recent deposition; Strong redox below 3"

Hydrology:

Recorded Data Available? Yes
Aerial photos X
Strm. gauge
Other:
Primary Hydrology Indicators: Depth of inundation: NONE, Inundated, Depth to saturation: 9", Saturated in upper 12" X, Depth to free water: 12", Water marks, Drift lines, Sediment deposits, Drainage patterns
Secondary Hydrology Indicators: Oxidized Root Channels (upper 12"), Water-stained leaves, Local Soil Survey Data, FAC-Neutral Test, Other:

Remarks: Plot taken at upper extent of overbank flow. Major channel resculpting going on in this whole area. Beaver activity. water source: Sunshine Creek.

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
Is the hydric soil criterion met? YES
Is the specific hydrology criterion met? YES
Is this sampling point within a wetland? YES

Comments: 15' from edge of channel.

Wetland Determination Data Form

Damascus Natural Features Inventory

Location: East of 242nd, N of Sunshine Valley Rd.
 Cowardin Class: _____
 HGM Class: _____
 Field Investigator(s): ACS/MB
 Recent Weather: 3.22" of rain in past 14 days; 39% above average
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

WETLAND: SU-A-02
 Map No: B6
 Plot No: DP 4
 WET/UPL: UPL
 Date: 3/6/2007

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover: 25%				Total cover: 60%			
<i>Scirpus microcarpus</i>	OBL	T		<i>Pseudotsuga menziesii</i>	FACU	40%	66.7%
Unidentified grass	FAC?	20%	* 80.0%	<i>Alnus rubra</i>	FAC	20%	33.3%
<i>Ranunculus repens</i>	FACW	5%	20.0%				
<i>Trillium (sessile)</i>	T						
				Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
				Total cover: 65%			
				<i>Sambucus racemosa</i>	FACU	5%	7.7%
				<i>Prunus emarginata</i>	FACU	5%	7.7%
				<i>Symphoricarpos albus</i>	FACU	5%	7.7%
				<i>Rubus discolor</i> [<i>R. armeniac</i>]	FACU	50%	76.9%

Percent of dominant species that are OBL, FACW, and/or FAC : 2 of 4 = 50%

Remarks: Edge of fir/Rubus grove. Fir mortality suggests area may be getting wetter. Most large dead fir are near new channel margins
Unidentified grass dropped as status unclear

Soils:

Map Unit Name:	Delena silt loam, 3-12%	Drainage Class:	poorly drained
Taxonomy:	Humic Fragiaquepts	Hydric soil?	Yes
Depth	Horizon	Matrix Color	Redox Conc.
0-9"		7.5 YR 3/2	
9-18"		7.5 YR 4/3	
18-22"		10 YR 4/3	
			Redox Desc.
			Texture/Structure/etc
			silt loam
			silt loam
			silty clay loam

Hydric soil indicators:

Histosol _____	Reducing Conditions _____	Organic streaking (in sandy soils) _____
Hist. Epipedon _____	Redox. Features (w/in 10") _____	Organic pan (in sandy soils) _____
Sulfidic Odor _____	Concretions/Nodules (w/in 3"; >2mm) _____	On Hydric Soils List _____
Gley/low chroma _____	High organic content in surface (in sandy soils) _____	Other _____

Remarks: _____

Hydrology:

Recorded Data Available?	Yes	Aerial photos	X	Strm. gauge	_____	Other:	_____
		<i>Primary Hydrology Indicators</i>		<i>Secondary Hydrology Indicators</i>			
Depth of inundation:	_____	Inundated	_____	Oxidized Root Channels (upper 12")	_____		
Depth to saturation:	_____	Saturated in upper 12"	_____	Water-stained leaves	_____		
Depth to free water:	_____	Water marks	_____	Local Soil Survey Data	_____		
		Drift lines	_____	FAC-Neutral Test	_____		
		Sediment deposits	_____	Other:	_____		
		Drainage patterns	_____				

Remarks: No hydrology indicators, soil near saturation at 22"

Wetland Determination:

Is the hydrophytic vegetation criterion met? NO
 Is the hydric soil criterion met? NO
 Is the specific hydrology criterion met? NO
 Is this sampling point within a wetland? NO

Comments: Fir grove is on higher ground in stream meanders

Wetland Determination Data Form

Damascus Natural Features Inventory

Location: South end of Hideaway Ct.
Cowardin Class:
HGM Class:
Field Investigator(s): ACS/TB/RR/MB
Recent Weather: 2.52" of rain in past 14 days; 100% of average
Do normal conditions exist on the site? Yes
Is the site significantly disturbed? No
Is the area a potential problem area? No

WETLAND: SU-A-03
Map No: A6
Plot No: DP 1
WET/UPL: UPL
Date: 2/22/2007

Vegetation: Dominant Plant Species

Table with columns for Herb Stratum, Tree Stratum, Sapling/ Shrub Stratum, Ind. status, % Cover, % rel. cover. Includes species like Unidentified grasses, Lotus corniculatus, Pseudotsuga menziesii, Rubus laciniatus.

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

Soils:

Table with columns for Map Unit Name, Taxonomy, Depth, Horizon, Matrix Color, Redox Conc., Drainage Class, Hydric soil?, Redox Desc., Hydric inclusions?, Texture/Structure/etc.

Hydric soil indicators: Histosol, Reducing Conditions, Organic streaking (in sandy soils), Hist. Epipedon, Redox. Features (w/in 10"), Organic pan (in sandy soils), Sulfidic Odor, Concretions/Nodules (w/in 3"; >2mm), On Hydric Soils List, Gley/low chroma, High organic content in surface (in sandy soils), Other

Hydrology:

Recorded Data Available? Yes
Aerial photos X
Strm. gauge
Other:
Primary Hydrology Indicators: Depth of inundation: NONE, Inundated, Depth to saturation: 13", Saturated in upper 12", Depth to free water: 16" (coming up), Water marks, Drift lines, Sediment deposits, Drainage patterns
Secondary Hydrology Indicators: Oxidized Root Channels (upper 12"), Water-stained leaves, Local Soil Survey Data, FAC-Neutral Test, Other:

Remarks:

Wetland Determination:

Is the hydrophytic vegetation criterion met? NO
Is the hydric soil criterion met? NO
Is the specific hydrology criterion met? NO
Is this sampling point within a wetland? NO

Comments: Pasture - mowed or grazed. Some fir planted - away from edge of stream, they look waterstressed.

Wetland Determination Data Form

Damascus Natural Features Inventory

WETLAND: SU-A-03

Location: South end of Hideaway Ct.
 Cowardin Class: _____
 HGM Class: _____
 Field Investigator(s): ACS/TB/RR/MB
 Recent Weather: _____
 Do normal conditions exist on the site? Yes
 Is the site significantly disturbed? No
 Is the area a potential problem area? No

Map No: A6
 Plot No: DP 2
 WET/UPL: UPL
 Date: 2/22/2007

Vegetation: Dominant Plant Species

Herb Stratum	Ind. status	% Cover	% rel. cover	Tree Stratum	Ind. status	% Cover	% rel. cover
Total cover:	95%			Total cover:	0%		
<i>Ranunculus repens</i>	FACW	5%	5.3%				
<i>Rumex acetosella</i>	FACU+	T					
<i>Carex species</i>	-	T					
<i>Juncus effusus</i>	FACW	T					
<i>Agrostis stolonifera</i>	FAC	70%	73.7%				
<i>Festuca arundinacea</i>	FAC-	T					
Unknown grass	-	10%	10.5%	Sapling/ Shrub Stratum	Ind. status	% Cover	% rel. cover
<i>Lotus corniculatus</i>	FAC	10%	10.5%	Total cover:	40%		
				<i>Rubus discolor</i> [R. armeniac]	FACU	40%	100.0%
				<i>Rubus laciniatus</i>	FACU	T	

Percent of dominant species that are OBL, FACW, and/or FAC : 1 of 2 = 50%

Remarks: _____

Soils:

Map Unit Name:	<u>Powell silt loam, 0-8%</u>	Drainage Class:	<u>somewhat poorly drained</u>
Taxonomy:	<u>Typic Fragiochrepts</u>	Hydric soil?	<u>No</u>
Depth	Horizon	Matrix Color	Redox Conc.
0-14"		10 YR 3/2	
14-16"		10 YR 3/2	10 YR 3/3
			few, medium, faint
			silt loam

Hydric soil indicators:

Histosol	Reducing Conditions	Organic streaking (in sandy soils)
Hist. Epipedon	Redox. Features (w/in 10")	Organic pan (in sandy soils)
Sulfidic Odor	Concretions/Nodules (w/in 3"; >2mm)	On Hydric Soils List
Gley/low chroma	High organic content in surface (in sandy soils)	Other

Remarks: Given lack of redox activity, likely does not stay saturated for extended period during growing season

Hydrology:

Recorded Data Available?	Yes	Aerial photos	<u>X</u>	Strm. gauge	_____	Other:	_____
		<i>Primary Hydrology Indicators</i>	_____	<i>Secondary Hydrology Indicators</i>	_____		_____
Depth of inundation:	<u>NONE</u>	Inundated	_____	Oxidized Root Channels (upper 12")	_____		_____
Depth to saturation:	<u>5"</u>	Saturated in upper 12"	<u>X</u>	Water-stained leaves	_____		_____
Depth to free water:	<u>10"</u>	Water marks	_____	Local Soil Survey Data	_____		_____
		Drift lines	_____	FAC-Neutral Test	_____		_____
		Sediment deposits	_____	Other:	_____		_____
		Drainage patterns	_____				

Remarks: _____

Wetland Determination:

Is the hydrophytic vegetation criterion met? NO
 Is the hydric soil criterion met? NO
 Is the specific hydrology criterion met? YES
 Is this sampling point within a wetland? NO

Comments: Water table at 8" no redox. Boundary based on microtopographic changes and trace components in community (esp. carex, Juncus, Ranunculus; lower extent of Rubus). Spot checks with shovel to confirm depth to sat/wt, redox features.

Wetland Determination Data Form

Damascus Natural Features Inventory

Location: South end of Hideaway Ct.
Cowardin Class: PEM, PSS
HGM Class: SV
Field Investigator(s): ACS/TB/RR/MB
Recent Weather: 3.22" of rain in last 14 days; 39% above average
Do normal conditions exist on the site? Yes
Is the site significantly disturbed? No
Is the area a potential problem area? No

WETLAND: SU-A-03
Map No: A6
Plot No: DP 3
WET/UPL: WET
Date: 3/6/2007

Vegetation: Dominant Plant Species

Table with columns: Herb Stratum, Ind. status, % Cover, % rel. cover, Tree Stratum, Ind. status, % Cover, % rel. cover. Includes rows for Carex sp., Agrostis stolonifera, Lotus corniculatus.

Sapling/ Shrub Stratum Ind. status % Cover % rel. cover
Total cover: 0%

Percent of dominant species that are OBL, FACW, and/or FAC : 2 of 2 = 100%

Soils:

Table with columns: Map Unit Name, Taxonomy, Depth, Horizon, Matrix Color, Redox Conc., Drainage Class, Hydric soil?, Redox Desc., somewhat poorly drained, Hydric inclusions?, Texture/Structure/etc.

Hydric soil indicators:

Table with columns: Histosol, Reducing Conditions, Organic streaking (in sandy soils), Hist. Epipedon, Redox. Features (w/in 10"), Organic pan (in sandy soils), Sulfidic Odor, Concretions/Nodules (w/in 3"; >2mm), On Hydric Soils List, Gley/low chroma X, High organic content in surface (in sandy soils), Other.

Hydrology:

Table with columns: Recorded Data Available?, Yes, Aerial photos X, Strm. gauge, Other: Primary Hydrology Indicators, Secondary Hydrology Indicators.

Remarks: No ponding, evidence of previous ponding; Source - groundwater with overland flow

Wetland Determination:

Is the hydrophytic vegetation criterion met? YES
Is the hydric soil criterion met? YES
Is the specific hydrology criterion met? YES
Is this sampling point within a wetland? YES

Comments: Wetland mosaic fingers up from sunshine riparian species cornus, acer cir, Alnus rubra, Swoard and Bracken fern
Mapped area contains approximately 60% wetlands, 40% uplands.

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Badger Creek
Riparian Corridor Area: 31 acres
Adjacent Wetlands: BA-A-01
Adjacent Land Use: Farming & low density residential

Riparian Code: R-BA-A
Field Maps #: A7
Field Date(s): 3/5/07, 3/16/07
Investigators: EL, TB

General Description

Badger Creek, tributary to Johnson Creek; red alder dominated riparian corridor. Riparian corridor constrained through low density residential areas, and fragmented by roads.

Riparian Characteristics

Stream/reach: Badger Creek and tribs.
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: road culverts
 Large wood features: few noted
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes: numerous driveway crossings, excavated ponds

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Red alder*	Himalayan blackberry	Pasture grasses*
Black cottonwood	Willow species (incl. Scoulers)	Turf grasses
Oregon ash		Sword fern
Western red cedar		Soft rush
		Reed canarygrass

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Water Storage/Flow Moderation	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Wildlife Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Biodiversity	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- streamside plantings of native tree, shrub and groundcover species – for thermal cover, soil stabilization, habitat, species diversity
- removal of noxious species
- reduction of herbicide and pesticide use near streams

Enhancement of the forested riparian corridor would also improve habitat connectivity. Enhancement actions would require the cooperation of landowners.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-BA-A



Function	Assessment Factors					
	Low (1 pt)		Medium (2 pts)		High (3 pts)	
Water Quality		Riparian area dominated by sparse herbs or no vegetation	2	Riparian area dominated by herbs or sparse woody vegetation		Riparian area dominated by dense woody vegetation
Score:	1	Average width of natural vegetation cover < 25'		Average width of natural vegetation cover: 25' to 50'		Average width of natural vegetation cover > 50'
11		Impervious surfaces > 25%	2	Impervious surfaces: 10 - 25%		Impervious surfaces < 10%
medium		Average channel shade < 25%		Average channel shade 25-50%	3	Average channel shade > 50%
		Severe soil erosion potential within riparian area		Moderate soil erosion potential within riparian area	3	Slight soil erosion potential within riparian area
Sub-totals	1		4		6	
Water storage/ flow moderation		No floodplains or wetlands in riparian area	2	Few, small floodplains or wetlands in riparian area		Multiple or large floodplains or wetlands in riparian area
Score:	1	Located in lower 1/3 of subwatershed		Located in middle 1/3 of subwatershed		Located in upper 1/3 of subwatershed
6	1	<20% woody vegetation cover within wetland or floodplain		20-50% woody vegetation within wetland or floodplain		>50% woody vegetation within wetland or floodplain
low	1	High bank or channel alteration (>25% altered)		Moderate bank or channel alteration (5-25% altered)		Low bank or channel alteration (<5% altered)
	1	Low connectivity to upland habitats		Moderate connectivity to upland habitats		High connectivity to upland habitats
Sub-totals	4		2		0	
Fish Habitat		No fish identified	2	Potential fish presence		Fish-bearing stream (ODFW, ODF or other source)
Score:	0	Average channel shade < 25%	0	Average channel shade 25 - 50%	3	Average channel shade > 50%
9	1	Low large wood recruitment potential		Medium large wood recruitment potential		High large wood recruitment potential
medium		Barrier(s) preventing juvenile and adult fish passage	2	Blockages under some flow conditions		No fish barriers (any/all crossings by bridge or ford)
	1	High bank or channel alteration (>25% altered)	0	Moderate bank or channel alteration (5-25% altered)	0	Low bank or channel alteration (<5% altered)
Sub-totals	2		4		3	
Wildlife Habitat		Seasonal surface water		Permanent surface water	3	Permanent surface water throughout reach
Score:	1	Low habitat diversity		Moderate habitat diversity		High habitat diversity
8	1	High human disturbance		Moderate human disturbance		Low human disturbance
low		No contiguous patches 5 acres in size	2	Contiguous patches 5-10 acres in size		Contiguous patches > 10 acres in size
	1	Low connectivity to upland habitats		Moderate connectivity to upland habitats		High connectivity to upland habitats
Sub-totals	3		2		3	
Biodiversity		No federal or state listed species	2	Potential habitat for federal or state listed species		Listed federal or state species present
Score:	1	No ONHP priority habitats		Potential ONHP priority habitats		ONHP priority habitats present*
7	1	No locally rare species or habitats		Potential locally rare species or habitats present		Locally rare species or habitats present
low		Low native cover (<50% native species cover)	2	Medium native cover (50 - 90% native species cover)		High native cover (>90% native species cover)
	1	High human disturbance	0	Moderate human disturbance	0	Low human disturbance
Sub-totals	3		4		0	
Combined Score	41					

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Clackamas River	Riparian Code: R-CL-A
Riparian Corridor Area: 108 acres	Field Maps #: F1, G1, G2
Adjacent Wetlands: CL-A-01, CL-A-02 CL-A-03	Field Date(s): 3/1/07, 3/14/07 & 4/4/07
Adjacent Land Use: Low density residential uses	Investigators: EL, TB

General Description

River segment at Carver, downstream from Richardson Creek confluence. Clackamas River, large riverine system with island habitat, broad floodplain, and bottomland cottonwood forest. Steep canyon walls rise above floodplain, with some basalt cliffs. This sites includes small segment of Lower Richardson Creek and lower reach of R-CL-C.

Riparian Characteristics

Stream/reach: Clackamas River, tributaries	Gradient: <input checked="" type="checkbox"/> low <2% <input type="checkbox"/> mod 2-4% <input type="checkbox"/> m/s 4-8% <input type="checkbox"/> steep >8%
Other features: <input type="checkbox"/> ponds <input checked="" type="checkbox"/> wetlands <input checked="" type="checkbox"/> springs	Side slopes: <input type="checkbox"/> <10% <input type="checkbox"/> 10-25% <input checked="" type="checkbox"/> 25-50% <input type="checkbox"/> >50%
Flooding potential <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Source: FEMA	Average woody vegetated width: <input type="checkbox"/> <25' <input type="checkbox"/> 25-50' <input checked="" type="checkbox"/> >50'
Fish barriers/impediments: none	Channel shade: <input type="checkbox"/> <25% <input checked="" type="checkbox"/> 25-50% <input type="checkbox"/> 50-75% <input type="checkbox"/> 75-100%
Large wood features: fir & hardwood, from floods	Channel alteration: <input type="checkbox"/> <5% <input checked="" type="checkbox"/> 5-25% <input type="checkbox"/> >25%
Recruitment potential: <input type="checkbox"/> low <input type="checkbox"/> medium <input checked="" type="checkbox"/> high	Notes: channel migrating due to recent floods, 100' bank loss

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Black cottonwood*	Salmonberry*	Reed canarygrass*
Red alder*	Willow species*	Tall fescue*
Douglas fir*	Red-osier dogwood	Soft rush
Western red cedar	Red elderberry	Scouring rush
Bigleaf maple	Himalayan blackberry	Sword fern

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	Coho, Chinook and Steelhead
Wildlife Habitat	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Biodiversity	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	

Restoration/Enhancement Comments:

Due to the very active channel migration and flooding in recent years, native plantings or other enhancement measures within the floodplain may be short-lived. Generally, restoration or enhancement opportunities are limited in this area. Over the longer term, as work occurs on or adjacent to Oregon 224 or bridges and culverts are replaced, opportunities to improve connections to the forested habitats above the highway should be evaluated.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-CL-A



Assessment Factors

Function	Low (1 pt)	Medium (2 pts)	High (3 pts)
Water Quality	Riparian area dominated by sparse herbs or no vegetation	Riparian area dominated by herbs or sparse woody vegetation	Riparian area dominated by dense woody vegetation
Score:	Average width of natural vegetation cover < 25'	Average width of natural vegetation cover: 25' to 50'	Average width of natural vegetation cover > 50'
14	Impervious surfaces > 25%	Impervious surfaces: 10 - 25%	Impervious surfaces < 10%
high	Average channel shade < 25%	Average channel shade 25-50%	Average channel shade > 50%
	Severe soil erosion potential within riparian area	Moderate soil erosion potential within riparian area	Slight soil erosion potential within riparian area
Sub-totals	0	2	12
Water storage/ flow moderation	No floodplains or wetlands in riparian area	Few, small floodplains or wetlands in riparian area	Multiple or large floodplains or wetlands in riparian area
Score:	Located in lower 1/3 of subwatershed	Located in middle 1/3 of subwatershed	Located in upper 1/3 of subwatershed
10	<20% woody vegetation cover within wetland or floodplain	20-50% woody vegetation within wetland or floodplain	>50% woody vegetation within wetland or floodplain
medium	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	Low bank or channel alteration (<5% altered)
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	High connectivity to upland habitats
Sub-totals	1	6	3
Fish Habitat	No fish identified	Potential fish presence	Fish-bearing stream (ODFW, ODF or other source)
Score:	Average channel shade < 25%	Average channel shade 25 - 50%	Average channel shade > 50%
13	Low large wood recruitment potential	Medium large wood recruitment potential	High large wood recruitment potential
high	Barrier(s) preventing juvenile and adult fish passage	Blockages under some flow conditions	No fish barriers (any/all crossings by bridge or ford)
	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	Low bank or channel alteration (<5% altered)
Sub-totals	0	4	9
Wildlife Habitat	Seasonal surface water	Permanent surface water	Permanent surface water throughout reach
Score:	Low habitat diversity	Moderate habitat diversity	High habitat diversity
13	High human disturbance	Moderate human disturbance	Low human disturbance
high	No contiguous patches 5 acres in size	Contiguous patches 5-10 acres in size	Contiguous patches > 10 acres in size
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	High connectivity to upland habitats
Sub-totals	0	4	9
Biodiversity	No federal or state listed species	Potential habitat for federal or state listed species	Listed federal or state species present
Score:	No ONHP priority habitats	Potential ONHP priority habitats	ONHP priority habitats present*
13	No locally rare species or habitats	Potential locally rare species or habitats present	Locally rare species or habitats present
high	Low native cover (<50% native species cover)	Medium native cover (50 - 90% native species cover)	High native cover (>90% native species cover)
	High human disturbance	Moderate human disturbance	Low human disturbance
Sub-totals	0	4	9
Combined Score	63		

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Clackamas River Tributary
Riparian Corridor Area: 12 acres
Adjacent Wetlands: N/A
Adjacent Land Use: Residential uses

Riparian Code: R-CL-C
Field Maps #: G2
Field Date(s): 3/14/07
Investigators: EL, TB

General Description

Upper reach of small tributary to Clackamas River; constrained and altered by nearby development. The southern site boundary is Tong Road, approximately 1,000 feet north of its intersection with Oregon 224. Below the road, the stream is part of R-CL-A.

Riparian Characteristics

Stream/reach: Clackamas River Tributary
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: culverts, flow, gradient
 Large wood features: none noted
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Douglas fir*	Himalayan blackberry	Ornamental plantings
Black cottonwood	Hazelnut	Sword fern
Bigleaf maple		English ivy

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Water Storage/Flow Moderation	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Wildlife Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Biodiversity	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- streamside plantings of native tree, shrub and groundcover species – for thermal cover, soil stabilization, habitat, species diversity
- removal of noxious species
- reduction of herbicide and pesticide use near streams

Enhancement actions would require the cooperation of landowners.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functions Assessment – R-CL-C



Assessment Factors

Function	Low (1 pt)	Medium (2 pts)	High (3 pts)		
Water Quality	Riparian area dominated by sparse herbs or no vegetation	2	Riparian area dominated by herbs or sparse woody vegetation	Riparian area dominated by dense woody vegetation	
Score:	Average width of natural vegetation cover < 25'	2	Average width of natural vegetation cover: 25' to 50'	Average width of natural vegetation cover > 50'	
12	Impervious surfaces > 25%		Impervious surfaces: 10 - 25%	3	Impervious surfaces < 10%
high	Average channel shade < 25%	2	Average channel shade 25-50%		Average channel shade > 50%
	Severe soil erosion potential within riparian area		Moderate soil erosion potential within riparian area	3	Slight soil erosion potential within riparian area
Sub-totals	0	6		6	
Water storage/ flow moderation	No floodplains or wetlands in riparian area		Few, small floodplains or wetlands in riparian area		Multiple or large floodplains or wetlands in riparian area
Score:	Located in lower 1/3 of subwatershed		Located in middle 1/3 of subwatershed	3	Located in upper 1/3 of subwatershed
7	<20% woody vegetation cover within wetland or floodplain		20-50% woody vegetation within wetland or floodplain		>50% woody vegetation within wetland or floodplain
low	High bank or channel alteration (>25% altered)		Moderate bank or channel alteration (5-25% altered)		Low bank or channel alteration (<5% altered)
	Low connectivity to upland habitats		Moderate connectivity to upland habitats		High connectivity to upland habitats
Sub-totals	4	0		3	
Fish Habitat	No fish identified		Potential fish presence		Fish-bearing stream (ODFW, ODF or other source)
Score:	Average channel shade < 25%	2	Average channel shade 25 - 50%	0	Average channel shade > 50%
6	Low large wood recruitment potential		Medium large wood recruitment potential		High large wood recruitment potential
low	Barrier(s) preventing juvenile and adult fish passage		Blockages under some flow conditions		No fish barriers (any/all crossings by bridge or ford)
	High bank or channel alteration (>25% altered)	0	Moderate bank or channel alteration (5-25% altered)	0	Low bank or channel alteration (<5% altered)
Sub-totals	4	2		0	
Wildlife Habitat	Seasonal surface water		Permanent surface water		Permanent surface water throughout reach
Score:	Low habitat diversity		Moderate habitat diversity		High habitat diversity
7	High human disturbance		Moderate human disturbance		Low human disturbance
low	No contiguous patches 5 acres in size	2	Contiguous patches 5-10 acres in size		Contiguous patches > 10 acres in size
	Low connectivity to upland habitats	0	Moderate connectivity to upland habitats	0	High connectivity to upland habitats
Sub-totals	3	4		0	
Biodiversity	No federal or state listed species		Potential habitat for federal or state listed species		Listed federal or state species present
Score:	No ONHP priority habitats		Potential ONHP priority habitats		ONHP priority habitats present*
6	No locally rare species or habitats		Potential locally rare species or habitats present		Locally rare species or habitats present
low	Low native cover (<50% native species cover)	2	Medium native cover (50 - 90% native species cover)		High native cover (>90% native species cover)
	High human disturbance	0	Moderate human disturbance	0	Low human disturbance
Sub-totals	4	2		0	
Combined Score	38				

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Deep Creek and Tributaries
Riparian Corridor Area: 34 acres
Adjacent Wetlands: N/A
Adjacent Land Use: Low density residential uses

Riparian Code: R-DE-A
Field Maps #: G4, G5
Field Date(s): 4/6/07
Investigators: EL, TB

General Description

Small tributaries to lower Deep Creek and Clackamas River; includes mature mixed forest corridor along 232nd Avenue. Lower section of streams disturbed by road crossings and residential uses and development; riparian corridor fragmented at 232nd and Oregon 224.

Riparian Characteristics

Stream/reach: Deep Creek tributaries
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: culverts, flow, gradient
 Large wood features: few lg. snags, downed wood
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Douglas fir*	Snowberry*	Sword fern*
Bigleaf maple*	Himalayan blackberry	Pasture grasses*
Western red cedar	Salmonberry	
Cascara	Hazelnut	
Grand fir	Vine maple	
Pacific yew	Osoberry	

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Water Storage/Flow Moderation	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Wildlife Habitat	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Biodiversity	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- daylighting of piped stream segments when opportunities arise.
- streamside plantings of native tree, shrub and groundcover species – for thermal cover, soil stabilization, habitat, species diversity
- removal of noxious species

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-DE-A



Assessment Factors

Function		Low (1 pt)		Medium (2 pts)		High (3 pts)
Water Quality Score: 13 high		Riparian area dominated by sparse herbs or no vegetation		Riparian area dominated by herbs or sparse woody vegetation	3	Riparian area dominated by dense woody vegetation
		Average width of natural vegetation cover < 25'		Average width of natural vegetation cover: 25' to 50'	3	Average width of natural vegetation cover > 50'
		Impervious surfaces > 25%		Impervious surfaces: 10 - 25%	3	Impervious surfaces < 10%
		Average channel shade < 25%	2	Average channel shade 25-50%		Average channel shade > 50%
		Severe soil erosion potential within riparian area	2	Moderate soil erosion potential within riparian area		Slight soil erosion potential within riparian area
Sub-totals	0		4		9	
Water storage/ flow moderation Score: 7 low	1	No floodplains or wetlands in riparian area		Few, small floodplains or wetlands in riparian area		Multiple or large floodplains or wetlands in riparian area
	1	Located in lower 1/3 of subwatershed		Located in middle 1/3 of subwatershed		Located in upper 1/3 of subwatershed
	1	<20% woody vegetation cover within wetland or floodplain		20-50% woody vegetation within wetland or floodplain		>50% woody vegetation within wetland or floodplain
		High bank or channel alteration (>25% altered)	2	Moderate bank or channel alteration (5-25% altered)		Low bank or channel alteration (<5% altered)
		Low connectivity to upland habitats	2	Moderate connectivity to upland habitats		High connectivity to upland habitats
Sub-totals	3		4		0	
Fish Habitat Score: 11 medium		No fish identified		Potential fish presence	3	Fish-bearing stream (ODFW, ODF or other source)
	0	Average channel shade < 25%	2	Average channel shade 25 - 50%	0	Average channel shade > 50%
		Low large wood recruitment potential	2	Medium large wood recruitment potential		High large wood recruitment potential
		Barrier(s) preventing juvenile and adult fish passage	2	Blockages under some flow conditions		No fish barriers (any/all crossings by bridge or ford)
	0	High bank or channel alteration (>25% altered)	2	Moderate bank or channel alteration (5-25% altered)	0	Low bank or channel alteration (<5% altered)
Sub-totals	0		8		3	
Wildlife Habitat Score: 12 high		Seasonal surface water	2	Permanent surface water		Permanent surface water throughout reach
		Low habitat diversity		Moderate habitat diversity	3	High habitat diversity
		High human disturbance	2	Moderate human disturbance		Low human disturbance
		No contiguous patches 5 acres in size		Contiguous patches 5-10 acres in size	3	Contiguous patches > 10 acres in size
	0	Low connectivity to upland habitats	2	Moderate connectivity to upland habitats	0	High connectivity to upland habitats
Sub-totals	0		6		6	
Biodiversity Score: 10 medium		No federal or state listed species		Potential habitat for federal or state listed species	3	Listed federal or state species present
	1	No ONHP priority habitats		Potential ONHP priority habitats		ONHP priority habitats present*
		No locally rare species or habitats	2	Potential locally rare species or habitats present		Locally rare species or habitats present
		Low native cover (<50% native species cover)	2	Medium native cover (50 - 90% native species cover)		High native cover (>90% native species cover)
	0	High human disturbance	2	Moderate human disturbance	0	Low human disturbance
Sub-totals	1		6		3	
Combined Score						53

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Kelley Creek and Tributaries
Riparian Corridor Area: 96 acres
Adjacent Wetlands: N/A
Adjacent Land Use: Low density residential uses

Riparian Code: R-KE-A
Field Maps #: A3, A4
Field Date(s): 3/5/07, 4/6/07
Investigators: EL, TB

General Description

Mainstem/headwaters of Kelley Creek, with multiple tributaries; mixed deciduous and evergreen riparian habitats. Cutthroat trout noted (by ODFW) up to approximately north limit of site. Kelley Creek is a tributary to Johnson Creek.

Riparian Characteristics

Stream/reach: Kelley Creek Headwaters
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: driveway culverts
 Large wood features: medium snags, downed wood
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Douglas fir*	Vine maple*	Sword fern*
Bigleaf maple*	Hazelnut	Pacific waterleaf
Red alder	Salmonberry	Lady fern
Black cottonwood	Oregon grape	Siberian montia
	Snowberry	Inside out flower
	Osoberry	Vanilla leaf

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Fish Habitat	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Wildlife Habitat	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Biodiversity	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- Repair or retrofitting of driveway culverts to improve passage for fish and aquatic organisms.
- Enhance buffer between stream and Rodlum Road with plantings of native tree, shrub and groundcover species
- removal of noxious species (e.g., pockets of Himalayan blackberry).

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-KE-A



Function	Assessment Factors				
	Low (1 pt)	Medium (2 pts)	High (3 pts)	Low (1 pt)	High (3 pts)
Water Quality	Riparian area dominated by sparse herbs or no vegetation	Riparian area dominated by herbs or sparse woody vegetation	3	Riparian area dominated by dense woody vegetation	
Score:	Average width of natural vegetation cover < 25'	Average width of natural vegetation cover: 25' to 50'	3	Average width of natural vegetation cover > 50'	
13	Impervious surfaces > 25%	Impervious surfaces: 10 - 25%	3	Impervious surfaces < 10%	
high	Average channel shade < 25%	Average channel shade 25-50%	3	Average channel shade > 50%	
	Severe soil erosion potential within riparian area	Moderate soil erosion potential within riparian area		Slight soil erosion potential within riparian area	
Sub-totals	1	0		12	
Water storage/ flow moderation	No floodplains or wetlands in riparian area	Few, small floodplains or wetlands in riparian area	2	Multiple or large floodplains or wetlands in riparian area	
Score:	Located in lower 1/3 of subwatershed	Located in middle 1/3 of subwatershed	3	Located in upper 1/3 of subwatershed	
14	<20% woody vegetation cover within wetland or floodplain	20-50% woody vegetation within wetland or floodplain	3	>50% woody vegetation within wetland or floodplain	
high	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	3	Low bank or channel alteration (<5% altered)	
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	3	High connectivity to upland habitats	
Sub-totals	0	2		12	
Fish Habitat	No fish identified	Potential fish presence	3	Fish-bearing stream (ODFW, ODF or other source)	
Score:	Average channel shade < 25%	Average channel shade 25 - 50%	3	Average channel shade > 50%	
13	Low large wood recruitment potential	Medium large wood recruitment potential		High large wood recruitment potential	
high	Barrier(s) preventing juvenile and adult fish passage	Blockages under some flow conditions	2	No fish barriers (any/all crossings by bridge or ford)	
	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	3	Low bank or channel alteration (<5% altered)	
Sub-totals	0	4		9	
Wildlife Habitat	Seasonal surface water	Permanent surface water	2	Permanent surface water throughout reach	
Score:	Low habitat diversity	Moderate habitat diversity	3	High habitat diversity	
13	High human disturbance	Moderate human disturbance		Low human disturbance	
high	No contiguous patches 5 acres in size	Contiguous patches 5-10 acres in size	3	Contiguous patches > 10 acres in size	
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	3	High connectivity to upland habitats	
Sub-totals	0	4		9	
Biodiversity	No federal or state listed species	Potential habitat for federal or state listed species	3	Listed federal or state species present	
Score:	No ONHP priority habitats	Potential ONHP priority habitats		ONHP priority habitats present*	
11	No locally rare species or habitats	Potential locally rare species or habitats present	2	Locally rare species or habitats present	
medium	Low native cover (<50% native species cover)	Medium native cover (50 - 90% native species cover)	3	High native cover (>90% native species cover)	
	High human disturbance	Moderate human disturbance	0	Low human disturbance	
Sub-totals	1	4		6	
Combined Score	64				

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Upper Noyer Creek
Riparian Corridor Area: 195 acres
Adjacent Wetlands: NO-A-01, NO-A-02, NO-A-03, NO-A-04
Adjacent Land Use: Farming & low density residential use
Riparian Code: R-NO-A
Field Maps #: D5
Field Date(s): 3/3/07, 3/13/07, 3/16/07, 4/4/07
Investigators: EL, TB

General Description

Upper Noyer Creek with multiple tributaries and associated wetlands. Riparian conditions degraded by farming and development, but restoration opportunities exist and biological health of stream improves dramatically in downstream forested ravines. Noyer Creek drains to Deep Creek before the confluence of Deep Creek and Clackamas River.

Riparian Characteristics

Stream/reach: Upper Noyer Creek and tributaries
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: Culverts at Hwy. 212
 Large wood features: Very limited
 Recruitment potential: low medium high
 Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes: large segments farmed

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Douglas fir*	Vine maple*	Pasture grasses*
Oregon ash*	Red-osier dogwood	Sword fern*
Black cottonwood	Douglas spirea	Dewey's sedge
	Hazelnut	Reed canarygrass
	Snowberry	
	Himalayan blackberry	

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Wildlife Habitat	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Biodiversity	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Riparian corridor downstream of Hwy. 212 enters forested ravine (at City limits) and appears in good condition. Culvert at Hwy. 212 may block fish access to Upper Noyer. Restoration of the stream and forested riparian corridor throughout Upper Noyer could improve water quality, fish habitat and wildlife habitat functions, as well as improving connectivity to and between other Damascus habitats.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-NO-A



Assessment Factors

Function		Low (1 pt)		Medium (2 pts)		High (3 pts)
Water Quality		Riparian area dominated by sparse herbs or no vegetation	2	Riparian area dominated by herbs or sparse woody vegetation		Riparian area dominated by dense woody vegetation
	Score:	Average width of natural vegetation cover < 25'		Average width of natural vegetation cover: 25' to 50'		Average width of natural vegetation cover > 50'
	10	Impervious surfaces > 25%		Impervious surfaces: 10 - 25%	3	Impervious surfaces < 10%
	medium	Average channel shade < 25%		Average channel shade 25-50%		Average channel shade > 50%
		Severe soil erosion potential within riparian area		Moderate soil erosion potential within riparian area	3	Slight soil erosion potential within riparian area
Sub-totals	2		2		6	
Water storage/ flow moderation		No floodplains or wetlands in riparian area		Few, small floodplains or wetlands in riparian area	3	Multiple or large floodplains or wetlands in riparian area
	Score:	Located in lower 1/3 of subwatershed		Located in middle 1/3 of subwatershed	3	Located in upper 1/3 of subwatershed
	9	<20% woody vegetation cover within wetland or floodplain		20-50% woody vegetation within wetland or floodplain		>50% woody vegetation within wetland or floodplain
	medium	High bank or channel alteration (>25% altered)		Moderate bank or channel alteration (5-25% altered)		Low bank or channel alteration (<5% altered)
		Low connectivity to upland habitats		Moderate connectivity to upland habitats		High connectivity to upland habitats
Sub-totals	3		0		6	
Fish Habitat		No fish identified		Potential fish presence		Fish-bearing stream (ODFW, ODF or other source)
	Score:	Average channel shade < 25%		Average channel shade 25 - 50%		Average channel shade > 50%
	6	Low large wood recruitment potential		Medium large wood recruitment potential		High large wood recruitment potential
	low	Barrier(s) preventing juvenile and adult fish passage	2	Blockages under some flow conditions		No fish barriers (any/all crossings by bridge or ford)
		High bank or channel alteration (>25% altered)		Moderate bank or channel alteration (5-25% altered)		Low bank or channel alteration (<5% altered)
Sub-totals	4		2		0	
Wildlife Habitat		Seasonal surface water		Permanent surface water	3	Permanent surface water throughout reach
	Score:	Low habitat diversity	2	Moderate habitat diversity		High habitat diversity
	9	High human disturbance	2	Moderate human disturbance		Low human disturbance
	medium	No contiguous patches 5 acres in size		Contiguous patches 5-10 acres in size		Contiguous patches > 10 acres in size
		Low connectivity to upland habitats		Moderate connectivity to upland habitats		High connectivity to upland habitats
Sub-totals	2		4		3	
Biodiversity		No federal or state listed species		Potential habitat for federal or state listed species		Listed federal or state species present
	Score:	No ONHP priority habitats		Potential ONHP priority habitats		ONHP priority habitats present*
	8	No locally rare species or habitats	2	Potential locally rare species or habitats present		Locally rare species or habitats present
	low	Low native cover (<50% native species cover)	2	Medium native cover (50 - 90% native species cover)		High native cover (>90% native species cover)
		High human disturbance	2	Moderate human disturbance		Low human disturbance
Sub-totals	2		6		0	
Combined Score	42					

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Richardson Creek – West Tributary
Riparian Corridor Area: 21 acres
Adjacent Wetlands: RI-A-01
Adjacent Land Use: Low density residential uses

Riparian Code: R-RI-A
Field Maps #: F2, F3
Field Date(s): 3/14/07, 4/4/07
Investigators: EL, TB

General Description

Small Richardson Creek tributary with riparian corridor partly fragmented by road and development. Channel disturbance due to road crossings and land uses particularly noted near the city limits.

Riparian Characteristics

Stream/reach: Richardson Creek – West Tributary
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: culverts, low flow
 Large wood features: few noted
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Douglas fir*	Hazelnut*	Sword fern*
Bigleaf maple	Snowberry	Oregon grape
Black cottonwood	Osoberry	English ivy
Western red cedar	Himalayan blackberry	
Oregon ash		
Black hawthorn		

Assessment Results

Riparian Function	Rating	Comments
Water Quality	<input type="checkbox"/> Low <input type="checkbox"/> Medium <input checked="" type="checkbox"/> High	
Water Storage/Flow Moderation	<input checked="" type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High	
Fish Habitat	<input checked="" type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High	
Wildlife Habitat	<input checked="" type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High	
Biodiversity	<input checked="" type="checkbox"/> Low <input type="checkbox"/> Medium <input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- Streamside plantings of native tree, shrub and groundcover species – for thermal cover, soil stabilization, habitat, species diversity.
- Repair of streambanks and daylighting of piped stream segments when opportunities arise.
- Removal of noxious species.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-RI-A



Assessment Factors

Function	Low (1 pt)	Medium (2 pts)	High (3 pts)
Water Quality	Riparian area dominated by sparse herbs or no vegetation	2	Riparian area dominated by herbs or sparse woody vegetation
Score:	Average width of natural vegetation cover < 25'	2	Average width of natural vegetation cover: 25' to 50'
13	Impervious surfaces > 25%		3
high	Average channel shade < 25%		3
	Severe soil erosion potential within riparian area		3
Sub-totals	0	4	9
Water storage/ flow moderation	No floodplains or wetlands in riparian area		Few, small floodplains or wetlands in riparian area
Score:	Located in lower 1/3 of subwatershed		3
8	<20% woody vegetation cover within wetland or floodplain		20-50% woody vegetation within wetland or floodplain
low	High bank or channel alteration (>25% altered)	2	Moderate bank or channel alteration (5-25% altered)
	Low connectivity to upland habitats		Moderate connectivity to upland habitats
Sub-totals	3	2	3
Fish Habitat	No fish identified		Potential fish presence
Score:	Average channel shade < 25%	0	Average channel shade 25 - 50%
8	Low large wood recruitment potential		Medium large wood recruitment potential
low	Barrier(s) preventing juvenile and adult fish passage		Blockages under some flow conditions
	High bank or channel alteration (>25% altered)	2	Moderate bank or channel alteration (5-25% altered)
Sub-totals	3	2	3
Wildlife Habitat	Seasonal surface water	2	Permanent surface water
Score:	Low habitat diversity		Moderate habitat diversity
7	High human disturbance		Moderate human disturbance
low	No contiguous patches 5 acres in size	2	Contiguous patches 5-10 acres in size
	Low connectivity to upland habitats	0	Moderate connectivity to upland habitats
Sub-totals	3	4	0
Biodiversity	No federal or state listed species		Potential habitat for federal or state listed species
Score:	No ONHP priority habitats		Potential ONHP priority habitats
6	No locally rare species or habitats		Potential locally rare species or habitats present
low	Low native cover (<50% native species cover)	2	Medium native cover (50 - 90% native species cover)
	High human disturbance	0	Moderate human disturbance
Sub-totals	4	2	0
Combined Score	42		

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Richardson Creek – Central Confluence
Riparian Corridor Area: 78 acres
Adjacent Wetlands: N/A
Adjacent Land Use: Low density residential uses at edges
Riparian Code: R-RI-B
Field Maps #: E3, F3, F4
Field Date(s): 3/14/07, 3/29/07
Investigators: EL, TB

General Description

Junction of Richardson Creek's main stem and north branch. One of the core riparian habitat areas within City, supporting steelhead trout and coho salmon. Biological health of Richardson Creek increases from upper reaches to lower reaches.

Riparian Characteristics

Stream/reach: Richardson Creek Confluence
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: none noted
 Large wood features: large snags, downed logs
 Recruitment potential: low medium high
 Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Douglas fir*	Osoberry*	Sword fern*
Bigleaf maple	Vine maple	Stinging nettle
Red alder	Snowberry	Inside-out flower
Black cottonwood	Hazelnut	Siberian montia
Oregon ash	Red elderberry	Stream violet
Exotic cherry	Himalayan blackberry	Clematis and ivy

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Fish Habitat	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Wildlife Habitat	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Biodiversity	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	

Restoration/Enhancement Comments:

Site in good condition. Potential enhancement measures include:

- Repair of degraded stream and vegetated corridor area near confluence of main streams, and at small tributary to north.
- Removal of noxious species (e.g., pockets of Himalayan blackberry).

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-RI-B



Assessment Factors

Function	Low (1 pt)	Medium (2 pts)	High (3 pts)
Water Quality	Riparian area dominated by sparse herbs or no vegetation	Riparian area dominated by herbs or sparse woody vegetation	Riparian area dominated by dense woody vegetation
Score:	Average width of natural vegetation cover < 25'	Average width of natural vegetation cover: 25' to 50'	Average width of natural vegetation cover > 50'
16	Impervious surfaces > 25%	Impervious surfaces: 10 - 25%	Impervious surfaces < 10%
high	Average channel shade < 25%	Average channel shade 25-50%	Average channel shade > 50%
	Severe soil erosion potential within riparian area	Moderate soil erosion potential within riparian area	Slight soil erosion potential within riparian area
Sub-totals	1	0	15
Water storage/ flow moderation	No floodplains or wetlands in riparian area	Few, small floodplains or wetlands in riparian area	Multiple or large floodplains or wetlands in riparian area
Score:	Located in lower 1/3 of subwatershed	Located in middle 1/3 of subwatershed	Located in upper 1/3 of subwatershed
12	<20% woody vegetation cover within wetland or floodplain	20-50% woody vegetation within wetland or floodplain	>50% woody vegetation within wetland or floodplain
high	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	Low bank or channel alteration (<5% altered)
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	High connectivity to upland habitats
Sub-totals	0	6	6
Fish Habitat	No fish identified	Potential fish presence	Fish-bearing stream (ODFW, ODF or other source)
Score:	Average channel shade < 25%	Average channel shade 25 - 50%	Average channel shade > 50%
15	Low large wood recruitment potential	Medium large wood recruitment potential	High large wood recruitment potential
high	Barrier(s) preventing juvenile and adult fish passage	Blockages under some flow conditions	No fish barriers (any/all crossings by bridge or ford)
	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	Low bank or channel alteration (<5% altered)
Sub-totals	0	0	15
Wildlife Habitat	Seasonal surface water	Permanent surface water	Permanent surface water throughout reach
Score:	Low habitat diversity	Moderate habitat diversity	High habitat diversity
15	High human disturbance	Moderate human disturbance	Low human disturbance
high	No contiguous patches 5 acres in size	Contiguous patches 5-10 acres in size	Contiguous patches > 10 acres in size
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	High connectivity to upland habitats
Sub-totals	0	0	15
Biodiversity	No federal or state listed species	Potential habitat for federal or state listed species	Listed federal or state species present
Score:	No ONHP priority habitats	Potential ONHP priority habitats	ONHP priority habitats present*
13	No locally rare species or habitats	Potential locally rare species or habitats present	Locally rare species or habitats present
high	Low native cover (<50% native species cover)	Medium native cover (50 - 90% native species cover)	High native cover (>90% native species cover)
	High human disturbance	Moderate human disturbance	Low human disturbance
Sub-totals	1	0	12
Combined Score	71		

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Richardson Creek – Northwest Tributary
Riparian Corridor Area: 45 acres
Adjacent Wetlands: RI-C-01, RI-C-02
Adjacent Land Use: Residential, farming, commercial
Riparian Code: R-RI-C
Field Maps #: E3
Field Date(s): 3/9/07, 3/21/07, 3/29/07
Investigators: EL, TB

General Description

Richardson Creek tributary with associated wetlands. Riparian corridor fragmented by roads and development. Forest cover is limited to patches near housing.

Riparian Characteristics

Stream/reach: Richardson Creek - NW Tributary
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: road culverts
 Large wood features: few noted, small snags
 Recruitment potential: low medium high
 Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Douglas fir*	Hazelnut*	Sword fern*
Bigleaf maple	Snowberry	Reed canarygrass*
Oregon ash	Osoberry	Fringecup
Black cottonwood	Red-osier dogwood	Dewey's sedge
Western red cedar	English holly	English ivy
Black hawthorn		

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Wildlife Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Biodiversity	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- Install streamside plantings of native tree, shrub and groundcover species – for thermal cover, soil stabilization, habitat, species diversity.
- Remove noxious species.
- Provide physical buffer between livestock and drainageways.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-RI-C



Assessment Factors

Function	Low (1 pt)	Medium (2 pts)	High (3 pts)		
Water Quality	Riparian area dominated by sparse herbs or no vegetation	2	Riparian area dominated by herbs or sparse woody vegetation	Riparian area dominated by dense woody vegetation	
Score:	1		1	3	
11	Average width of natural vegetation cover < 25'		Average width of natural vegetation cover: 25' to 50'	Average width of natural vegetation cover > 50'	
medium	Impervious surfaces > 25%		Impervious surfaces: 10 - 25%	3	Impervious surfaces < 10%
	Average channel shade < 25%	2	Average channel shade 25-50%		Average channel shade > 50%
	Severe soil erosion potential within riparian area		Moderate soil erosion potential within riparian area	3	Slight soil erosion potential within riparian area
Sub-totals	1	4		6	
Water storage/ flow moderation	No floodplains or wetlands in riparian area		Few, small floodplains or wetlands in riparian area	3	Multiple or large floodplains or wetlands in riparian area
Score:				3	
9	Located in lower 1/3 of subwatershed		Located in middle 1/3 of subwatershed		Located in upper 1/3 of subwatershed
medium	1		1		1
	<20% woody vegetation cover within wetland or floodplain		20-50% woody vegetation within wetland or floodplain		>50% woody vegetation within wetland or floodplain
	1		1		1
	High bank or channel alteration (>25% altered)		Moderate bank or channel alteration (5-25% altered)		Low bank or channel alteration (<5% altered)
	1		1		1
	Low connectivity to upland habitats		Moderate connectivity to upland habitats		High connectivity to upland habitats
Sub-totals	3	0		6	
Fish Habitat	No fish identified		Potential fish presence		Fish-bearing stream (ODFW, ODF or other source)
Score:	1		0		0
7	0	2	0		0
low	1		1		1
	Average channel shade < 25%		Average channel shade 25 - 50%		Average channel shade > 50%
	1		1		1
	Low large wood recruitment potential		Medium large wood recruitment potential		High large wood recruitment potential
	1		1		1
	Barrier(s) preventing juvenile and adult fish passage	2	Blockages under some flow conditions		No fish barriers (any/all crossings by bridge or ford)
	1		0		0
	High bank or channel alteration (>25% altered)		Moderate bank or channel alteration (5-25% altered)		Low bank or channel alteration (<5% altered)
Sub-totals	3	4		0	
Wildlife Habitat	Seasonal surface water		2		Permanent surface water throughout reach
Score:			2		High habitat diversity
7	1		1		Low human disturbance
low	1		1		1
	High human disturbance		Moderate human disturbance		Low human disturbance
	1		1		1
	No contiguous patches 5 acres in size		Contiguous patches 5-10 acres in size		Contiguous patches > 10 acres in size
	1		1		1
	Low connectivity to upland habitats	0	Moderate connectivity to upland habitats	0	High connectivity to upland habitats
Sub-totals	3	4		0	
Biodiversity	No federal or state listed species		2		Listed federal or state species present
Score:			1		ONHP priority habitats present*
6	1		1		1
low	1		1		1
	No ONHP priority habitats		Potential ONHP priority habitats		Locally rare species or habitats present
	1		1		1
	No locally rare species or habitats		Potential locally rare species or habitats present		High native cover (>90% native species cover)
	1		2		Low human disturbance
	Low native cover (<50% native species cover)	2	Medium native cover (50 - 90% native species cover)		
	1	0	Moderate human disturbance	0	
Sub-totals	4	2		0	
Combined Score	40				

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Richardson Creek – North Tributary	Riparian Code: R-RI-D
Riparian Corridor Area: 63 acres	Field Maps #: D4, E3, E4
Adjacent Wetlands: RI-D-01, RI-D-02	Field Date(s): 3/21/07, 3/29/07, 4/4/07
Adjacent Land Use: Commercial, residential, farming	Investigators: EL, TB

General Description

Richardson Creek tributary through Damascus town center. Riparian corridor with wetlands upstream of Safeway in fair condition, otherwise fragmented and/or piped. History of water quality problems related to failed septic; may now be recovering.

Riparian Characteristics

Stream/reach: Richardson Creek -North Tributary
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: Hwy. 212 culvert
 Large wood features: snags, logs near wetland
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Red alder*	Himalayan blackberry*	Sword fern*
Douglas fir	Willows	Reed canarygrass*
Bigleaf maple	Salmonberry	Inside-out flower
Black cottonwood	Hazelnut	Wood strawberry
Exotic cherry	Snowberry	
English holly	Salal	

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Wildlife Habitat	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Biodiversity	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- Remove noxious species.
- Install streamside plantings of native tree, shrub and groundcover species – for thermal cover, habitat, species diversity.
- When road, parking or building improvements planned near stream, evaluate opportunities to replace/retrofit culverts, increase buffers, improve habitat connectivity.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-RI-D



Assessment Factors

Function		Low (1 pt)	Medium (2 pts)	High (3 pts)
Water Quality Score: 10 medium		Riparian area dominated by sparse herbs or no vegetation	2	Riparian area dominated by herbs or sparse woody vegetation
		Average width of natural vegetation cover < 25'		Average width of natural vegetation cover: 25' to 50'
		Impervious surfaces > 25%	2	Impervious surfaces: 10 - 25%
		Average channel shade < 25%	2	Average channel shade 25-50%
		Severe soil erosion potential within riparian area		Moderate soil erosion potential within riparian area
Sub-totals	1		6	3
Water storage/ flow moderation Score: 9 medium		No floodplains or wetlands in riparian area	2	Few, small floodplains or wetlands in riparian area
		Located in lower 1/3 of subwatershed		Located in middle 1/3 of subwatershed
		<20% woody vegetation cover within wetland or floodplain	2	20-50% woody vegetation within wetland or floodplain
		High bank or channel alteration (>25% altered)		Moderate bank or channel alteration (5-25% altered)
		Low connectivity to upland habitats		Moderate connectivity to upland habitats
Sub-totals	2		4	3
Fish Habitat Score: 7 low		No fish identified		Potential fish presence
		Average channel shade < 25%	2	Average channel shade 25 - 50%
		Low large wood recruitment potential		Medium large wood recruitment potential
		Barrier(s) preventing juvenile and adult fish passage	2	Blockages under some flow conditions
		High bank or channel alteration (>25% altered)	0	Moderate bank or channel alteration (5-25% altered)
Sub-totals	3		4	0
Wildlife Habitat Score: 9 medium		Seasonal surface water	2	Permanent surface water
		Low habitat diversity	2	Moderate habitat diversity
		High human disturbance		Moderate human disturbance
		No contiguous patches 5 acres in size		Contiguous patches 5-10 acres in size
		Low connectivity to upland habitats	0	Moderate connectivity to upland habitats
Sub-totals	2		4	3
Biodiversity Score: 8 low		No federal or state listed species		Potential habitat for federal or state listed species
		No ONHP priority habitats		Potential ONHP priority habitats
		No locally rare species or habitats		Potential locally rare species or habitats present
		Low native cover (<50% native species cover)	2	Medium native cover (50 - 90% native species cover)
		High human disturbance	0	Moderate human disturbance
Sub-totals	3		2	3
Combined Score	43			

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Richardson Creek – Northeast Tributary
Riparian Corridor Area: 47 acres
Adjacent Wetlands: RI-E-01
Adjacent Land Use: Residential and farming

Riparian Code: R-RI-E
Field Maps #: D4, E4
Field Date(s): 3/16/07, 3/29/07
Investigators: EL, TB

General Description

Richardson Creek tributary; largely farmed and developed corridor with minimal forest cover along stream channel.

Riparian Characteristics

Stream/reach: Richardson Creek - NE Tributary
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: Culverts at 212 & Royer
 Large wood features: only noted in uplands
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Red alder*	Himalayan blackberry*	English ivy*
Douglas fir	Willows	Reed canarygrass*
Bigleaf maple	Snowberry	Sword fern
Black cottonwood	Hazelnut	
Exotic cherry		

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Water Storage/Flow Moderation	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Wildlife Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Biodiversity	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Area is highly disturbed and potential enhancement measures should be weighed against other sites, but two key measures are:

- Install native streamside plantings for thermal cover over stream.
- Remove noxious species.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-RI-E



Function	Assessment Factors						
	Low (1 pt)	Medium (2 pts)	High (3 pts)				
Water Quality		Riparian area dominated by sparse herbs or no vegetation	2	Riparian area dominated by herbs or sparse woody vegetation		Riparian area dominated by dense woody vegetation	
Score:		Average width of natural vegetation cover < 25'	2	Average width of natural vegetation cover: 25' to 50'		Average width of natural vegetation cover > 50'	
12		Impervious surfaces > 25%		Impervious surfaces: 10 - 25%	3	Impervious surfaces < 10%	
high		Average channel shade < 25%	2	Average channel shade 25-50%		Average channel shade > 50%	
		Severe soil erosion potential within riparian area		Moderate soil erosion potential within riparian area	3	Slight soil erosion potential within riparian area	
Sub-totals	0		6		6		
Water storage/ flow moderation		No floodplains or wetlands in riparian area		Few, small floodplains or wetlands in riparian area		Multiple or large floodplains or wetlands in riparian area	
Score:	1	Located in lower 1/3 of subwatershed		Located in middle 1/3 of subwatershed		Located in upper 1/3 of subwatershed	3
7	1	<20% woody vegetation cover within wetland or floodplain		20-50% woody vegetation within wetland or floodplain		>50% woody vegetation within wetland or floodplain	
low	1	High bank or channel alteration (>25% altered)		Moderate bank or channel alteration (5-25% altered)		Low bank or channel alteration (<5% altered)	
	1	Low connectivity to upland habitats		Moderate connectivity to upland habitats		High connectivity to upland habitats	
Sub-totals	4		0		3		
Fish Habitat		No fish identified		Potential fish presence		Fish-bearing stream (ODFW, ODF or other source)	
Score:	1	Average channel shade < 25%	2	Average channel shade 25 - 50%		Average channel shade > 50%	
8	1	Low large wood recruitment potential		Medium large wood recruitment potential		High large wood recruitment potential	
low		Barrier(s) preventing juvenile and adult fish passage		Blockages under some flow conditions	3	No fish barriers (any/all crossings by bridge or ford)	
	1	High bank or channel alteration (>25% altered)		Moderate bank or channel alteration (5-25% altered)		Low bank or channel alteration (<5% altered)	
Sub-totals	3		2		3		
Wildlife Habitat		Seasonal surface water	2	Permanent surface water		Permanent surface water throughout reach	
Score:	1	Low habitat diversity		Moderate habitat diversity		High habitat diversity	
7	1	High human disturbance		Moderate human disturbance		Low human disturbance	
low		No contiguous patches 5 acres in size	2	Contiguous patches 5-10 acres in size		Contiguous patches > 10 acres in size	
	1	Low connectivity to upland habitats		Moderate connectivity to upland habitats		High connectivity to upland habitats	
Sub-totals	3		4		0		
Biodiversity		No federal or state listed species		Potential habitat for federal or state listed species		Listed federal or state species present	
Score:	1	No ONHP priority habitats		Potential ONHP priority habitats		ONHP priority habitats present*	
6	1	No locally rare species or habitats		Potential locally rare species or habitats present		Locally rare species or habitats present	
low		Low native cover (<50% native species cover)	2	Medium native cover (50 - 90% native species cover)		High native cover (>90% native species cover)	
	1	High human disturbance		Moderate human disturbance		Low human disturbance	
Sub-totals	4		2		0		
Combined Score	40						

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Richardson Creek – East Tributary
Riparian Corridor Area: 42 acres
Adjacent Wetlands: N/A
Adjacent Land Use: Residential and farming

Riparian Code: R-RI-F
Field Maps #: F4, F5
Field Date(s): 3/29/07
Investigators: EL, TB

General Description

Southern Richardson Creek tributary with multiple forks. Riparian corridor partly fragmented by roads, farming and development. Stream is mostly piped in residential area to the northwest.

Riparian Characteristics

Stream/reach: Richardson Creek – East Tributary
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: Road culverts
 Large wood features: few noted
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%

Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Douglas fir *	Himalayan blackberry*	Sword fern*
Bigleaf maple	Willows	Reed canarygrass
Black cottonwood	Salal	English ivy
Grand fir	Hazelnut	
Western red cedar	Red flowering currant	
	Osoberry	

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Wildlife Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Biodiversity	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- streamside plantings of native tree, shrub and groundcover species – for thermal cover, soil stabilization, habitat corridor, species diversity.
- removal of noxious species.
- daylighting of piped stream segments when opportunities arise.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-RI-F



Function	Assessment Factors					
	Low (1 pt)	Medium (2 pts)	High (3 pts)			
Water Quality		Riparian area dominated by sparse herbs or no vegetation	2	Riparian area dominated by herbs or sparse woody vegetation		Riparian area dominated by dense woody vegetation
Score:	1	Average width of natural vegetation cover < 25'		Average width of natural vegetation cover: 25' to 50'		Average width of natural vegetation cover > 50'
9		Impervious surfaces > 25%		Impervious surfaces: 10 - 25%	3	Impervious surfaces < 10%
medium	1	Average channel shade < 25%		Average channel shade 25-50%		Average channel shade > 50%
		Severe soil erosion potential within riparian area	2	Moderate soil erosion potential within riparian area		Slight soil erosion potential within riparian area
Sub-totals	2		4		3	
Water storage/ flow moderation		No floodplains or wetlands in riparian area	2	Few, small floodplains or wetlands in riparian area		Multiple or large floodplains or wetlands in riparian area
Score:		Located in lower 1/3 of subwatershed		Located in middle 1/3 of subwatershed	3	Located in upper 1/3 of subwatershed
9		<20% woody vegetation cover within wetland or floodplain	2	20-50% woody vegetation within wetland or floodplain		>50% woody vegetation within wetland or floodplain
medium	1	High bank or channel alteration (>25% altered)		Moderate bank or channel alteration (5-25% altered)		Low bank or channel alteration (<5% altered)
	1	Low connectivity to upland habitats		Moderate connectivity to upland habitats		High connectivity to upland habitats
Sub-totals	2		4		3	
Fish Habitat		No fish identified		Potential fish presence		Fish-bearing stream (ODFW, ODF or other source)
Score:	1	Average channel shade < 25%		Average channel shade 25 - 50%		Average channel shade > 50%
5	1	Low large wood recruitment potential		Medium large wood recruitment potential		High large wood recruitment potential
low	1	Barrier(s) preventing juvenile and adult fish passage		Blockages under some flow conditions		No fish barriers (any/all crossings by bridge or ford)
	1	High bank or channel alteration (>25% altered)		Moderate bank or channel alteration (5-25% altered)		Low bank or channel alteration (<5% altered)
Sub-totals	5		0		0	
Wildlife Habitat		Seasonal surface water	2	Permanent surface water		Permanent surface water throughout reach
Score:	1	Low habitat diversity		Moderate habitat diversity		High habitat diversity
6	1	High human disturbance		Moderate human disturbance		Low human disturbance
low	1	No contiguous patches 5 acres in size		Contiguous patches 5-10 acres in size		Contiguous patches > 10 acres in size
	1	Low connectivity to upland habitats		Moderate connectivity to upland habitats		High connectivity to upland habitats
Sub-totals	4		2		0	
Biodiversity		No federal or state listed species		Potential habitat for federal or state listed species		Listed federal or state species present
Score:	1	No ONHP priority habitats		Potential ONHP priority habitats		ONHP priority habitats present*
5	1	No locally rare species or habitats		Potential locally rare species or habitats present		Locally rare species or habitats present
low	1	Low native cover (<50% native species cover)		Medium native cover (50 - 90% native species cover)		High native cover (>90% native species cover)
	1	High human disturbance		Moderate human disturbance		Low human disturbance
Sub-totals	5		0		0	
Combined Score	34					

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Rock Creek – South Tributary
Riparian Corridor Area: 69 acres
Adjacent Wetlands: RO-A-01, RO-A-02, RO-A-03
Adjacent Land Use: Residential and farming at edges

Riparian Code: R-RO-A
Field Maps #: F1, F2
Field Date(s): 3/9/07, 3/14/07, 4/4/07
Investigators: EL, TB

General Description

Lower Rock Creek tributary with multiple associated wetlands and large man-made pond with dam. With exception of west end, site generally contains forested riparian corridors.

Riparian Characteristics

Stream/reach: Rock Creek – South Tributary
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: dam at large pond
 Large wood features: snags, stumps, downed logs
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Red alder*	Salmonberry*	Sword fern*
Western red cedar*	Red elderberry	Creeping buttercup
Douglas fir	Osoberry	Maidenhair fern
Bigleaf maple	Hazelnut	Skunk cabbage
Black cottonwood	Snowberry	Reed canarygrass
	Willows	
	Himalayan blackberry	

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Wildlife Habitat	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Biodiversity	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- Remove noxious species (especially Himalayan blackberry).
- Plant native evergreens to diversify forest understory.
- Provide shade cover around (and potentially deepen) pond to reduce summer water temperatures.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-RO-A



Assessment Factors

Function	Low (1 pt)	Medium (2 pts)	High (3 pts)
Water Quality	Riparian area dominated by sparse herbs or no vegetation	Riparian area dominated by herbs or sparse woody vegetation	Riparian area dominated by dense woody vegetation
Score:	Average width of natural vegetation cover < 25'	Average width of natural vegetation cover: 25' to 50'	Average width of natural vegetation cover > 50'
14	Impervious surfaces > 25%	Impervious surfaces: 10 - 25%	Impervious surfaces < 10%
high	Average channel shade < 25%	Average channel shade 25-50%	Average channel shade > 50%
	Severe soil erosion potential within riparian area	Moderate soil erosion potential within riparian area	Slight soil erosion potential within riparian area
Sub-totals	0	2	12
Water storage/ flow moderation	No floodplains or wetlands in riparian area	Few, small floodplains or wetlands in riparian area	Multiple or large floodplains or wetlands in riparian area
Score:	Located in lower 1/3 of subwatershed	Located in middle 1/3 of subwatershed	Located in upper 1/3 of subwatershed
10	<20% woody vegetation cover within wetland or floodplain	20-50% woody vegetation within wetland or floodplain	>50% woody vegetation within wetland or floodplain
medium	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	Low bank or channel alteration (<5% altered)
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	High connectivity to upland habitats
Sub-totals	1	6	3
Fish Habitat	No fish identified	Potential fish presence	Fish-bearing stream (ODFW, ODF or other source)
Score:	Average channel shade < 25%	Average channel shade 25 - 50%	Average channel shade > 50%
9	Low large wood recruitment potential	Medium large wood recruitment potential	High large wood recruitment potential
medium	Barrier(s) preventing juvenile and adult fish passage	Blockages under some flow conditions	No fish barriers (any/all crossings by bridge or ford)
	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	Low bank or channel alteration (<5% altered)
Sub-totals	2	4	3
Wildlife Habitat	Seasonal surface water	Permanent surface water	Permanent surface water throughout reach
Score:	Low habitat diversity	Moderate habitat diversity	High habitat diversity
13	High human disturbance	Moderate human disturbance	Low human disturbance
high	No contiguous patches 5 acres in size	Contiguous patches 5-10 acres in size	Contiguous patches > 10 acres in size
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	High connectivity to upland habitats
Sub-totals	0	4	9
Biodiversity	No federal or state listed species	Potential habitat for federal or state listed species	Listed federal or state species present
Score:	No ONHP priority habitats	Potential ONHP priority habitats	ONHP priority habitats present*
10	No locally rare species or habitats	Potential locally rare species or habitats present	Locally rare species or habitats present
medium	Low native cover (<50% native species cover)	Medium native cover (50 - 90% native species cover)	High native cover (>90% native species cover)
	High human disturbance	Moderate human disturbance	Low human disturbance
Sub-totals	2	2	6
Combined Score	56		

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Rock Creek – Sunnyside Tributary
Riparian Corridor Area: 21 acres
Adjacent Wetlands: RO-B-01
Adjacent Land Use: Low density residential and farming

Riparian Code: R-RO-B
Field Maps #: E2
Field Date(s): 3/21/07, 3/29/07
Investigators: EL, TB, ACS

General Description

Rock Creek tributary with ash swale. Meandering channel has been altered in several locations, and ponds excavated. Fish have been documented by ODFW downstream, west of Rock Creek Road and outside city limits.

Riparian Characteristics

Stream/reach: Rock Creek – Sunnyside Tributary
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: downstream culverts
 Large wood features: few ash snags
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Oregon ash*	Himalayan blackberry	Reed canarygrass
Douglas fir		

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Wildlife Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Biodiversity	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- streamside plantings of native shrub and groundcover species – for thermal cover, soil stabilization, habitat corridor, species diversity.
- removal of noxious species.
- daylighting of piped stream segments when opportunities arise.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-RO-B



Assessment Factors

Function		Low (1 pt)		Medium (2 pts)		High (3 pts)
Water Quality		Riparian area dominated by sparse herbs or no vegetation	2	Riparian area dominated by herbs or sparse woody vegetation		Riparian area dominated by dense woody vegetation
Score:	1	Average width of natural vegetation cover < 25'		Average width of natural vegetation cover: 25' to 50'		Average width of natural vegetation cover > 50'
11		Impervious surfaces > 25%		Impervious surfaces: 10 - 25%	3	Impervious surfaces < 10%
medium		Average channel shade < 25%	2	Average channel shade 25-50%		Average channel shade > 50%
		Severe soil erosion potential within riparian area		Moderate soil erosion potential within riparian area	3	Slight soil erosion potential within riparian area
Sub-totals	1		4		6	
Water storage/ flow moderation		No floodplains or wetlands in riparian area	2	Few, small floodplains or wetlands in riparian area		Multiple or large floodplains or wetlands in riparian area
Score:	1	Located in lower 1/3 of subwatershed		Located in middle 1/3 of subwatershed		Located in upper 1/3 of subwatershed
9		<20% woody vegetation cover within wetland or floodplain		20-50% woody vegetation within wetland or floodplain	3	>50% woody vegetation within wetland or floodplain
medium		High bank or channel alteration (>25% altered)	2	Moderate bank or channel alteration (5-25% altered)		Low bank or channel alteration (<5% altered)
	1	Low connectivity to upland habitats		Moderate connectivity to upland habitats		High connectivity to upland habitats
Sub-totals	2		4		3	
Fish Habitat	1	No fish identified		Potential fish presence		Fish-bearing stream (ODFW, ODF or other source)
Score:	0	Average channel shade < 25%	2	Average channel shade 25 - 50%	0	Average channel shade > 50%
8	1	Low large wood recruitment potential		Medium large wood recruitment potential		High large wood recruitment potential
low		Barrier(s) preventing juvenile and adult fish passage	2	Blockages under some flow conditions		No fish barriers (any/all crossings by bridge or ford)
	0	High bank or channel alteration (>25% altered)	2	Moderate bank or channel alteration (5-25% altered)	0	Low bank or channel alteration (<5% altered)
Sub-totals	2		6		0	
Wildlife Habitat		Seasonal surface water	2	Permanent surface water		Permanent surface water throughout reach
Score:		Low habitat diversity	2	Moderate habitat diversity		High habitat diversity
8	1	High human disturbance		Moderate human disturbance		Low human disturbance
low		No contiguous patches 5 acres in size	2	Contiguous patches 5-10 acres in size		Contiguous patches > 10 acres in size
	1	Low connectivity to upland habitats	0	Moderate connectivity to upland habitats	0	High connectivity to upland habitats
Sub-totals	2		6		0	
Biodiversity	1	No federal or state listed species		Potential habitat for federal or state listed species		Listed federal or state species present
Score:	1	No ONHP priority habitats		Potential ONHP priority habitats		ONHP priority habitats present*
6	1	No locally rare species or habitats		Potential locally rare species or habitats present		Locally rare species or habitats present
low		Low native cover (<50% native species cover)	2	Medium native cover (50 - 90% native species cover)		High native cover (>90% native species cover)
	1	High human disturbance	0	Moderate human disturbance	0	Low human disturbance
Sub-totals	4		2		0	
Combined Score			42			

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Rock Creek – Vogel Tributary
Riparian Corridor Area: 35 acres
Adjacent Wetlands: N/A
Adjacent Land Use: Low density residential and farming

Riparian Code: R-RO-C
Field Maps #: D2
Field Date(s): 3/21/07
Investigators: EL, TB

General Description

Small, north-flowing Rock Creek tributary. Riparian corridor fragmented by roads and development; several stream reaches piped. Year-round spring feeds stream.

Riparian Characteristics

Stream/reach: Rock Creek – Vogel Tributary
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: stream partly piped
 Large wood features: few snags near confluence
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Douglas fir*	Hazelnut*	Sword fern*
Red alder	Snowberry	Bracken fern
	Osoberry	
	Vine maple	
	Dull Oregon grape	
	Himalayan blackberry	

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Water Storage/Flow Moderation	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Wildlife Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Biodiversity	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement/Management Comments:

Stream corridor is highly degraded and/or piped in areas. Stream daylighting is the primary restoration opportunity, followed by re-meandering of channel and revegetation of disturbed corridors with native tree, shrub and groundcover species (for thermal cover, habitat, species diversity).

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-RO-C



Assessment Factors

Function	Low (1 pt)	Medium (2 pts)	High (3 pts)
Water Quality	Riparian area dominated by sparse herbs or no vegetation	Riparian area dominated by herbs or sparse woody vegetation	Riparian area dominated by dense woody vegetation
Score:	Average width of natural vegetation cover < 25'	Average width of natural vegetation cover: 25' to 50'	Average width of natural vegetation cover > 50'
14	Impervious surfaces > 25%	Impervious surfaces: 10 - 25%	Impervious surfaces < 10%
high	Average channel shade < 25%	Average channel shade 25-50%	Average channel shade > 50%
	Severe soil erosion potential within riparian area	Moderate soil erosion potential within riparian area	Slight soil erosion potential within riparian area
Sub-totals	0	2	12
Water storage/ flow moderation	No floodplains or wetlands in riparian area	Few, small floodplains or wetlands in riparian area	Multiple or large floodplains or wetlands in riparian area
Score:	Located in lower 1/3 of subwatershed	Located in middle 1/3 of subwatershed	Located in upper 1/3 of subwatershed
5	<20% woody vegetation cover within wetland or floodplain	20-50% woody vegetation within wetland or floodplain	>50% woody vegetation within wetland or floodplain
low	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	Low bank or channel alteration (<5% altered)
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	High connectivity to upland habitats
Sub-totals	5	0	0
Fish Habitat	No fish identified	Potential fish presence	Fish-bearing stream (ODFW, ODF or other source)
Score:	Average channel shade < 25%	Average channel shade 25 - 50%	Average channel shade > 50%
9	Low large wood recruitment potential	Medium large wood recruitment potential	High large wood recruitment potential
medium	Barrier(s) preventing juvenile and adult fish passage	Blockages under some flow conditions	No fish barriers (any/all crossings by bridge or ford)
	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	Low bank or channel alteration (<5% altered)
Sub-totals	2	4	3
Wildlife Habitat	Seasonal surface water	Permanent surface water	Permanent surface water throughout reach
Score:	Low habitat diversity	Moderate habitat diversity	High habitat diversity
8	High human disturbance	Moderate human disturbance	Low human disturbance
low	No contiguous patches 5 acres in size	Contiguous patches 5-10 acres in size	Contiguous patches > 10 acres in size
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	High connectivity to upland habitats
Sub-totals	2	6	0
Biodiversity	No federal or state listed species	Potential habitat for federal or state listed species	Listed federal or state species present
Score:	No ONHP priority habitats	Potential ONHP priority habitats	ONHP priority habitats present*
6	No locally rare species or habitats	Potential locally rare species or habitats present	Locally rare species or habitats present
low	Low native cover (<50% native species cover)	Medium native cover (50 - 90% native species cover)	High native cover (>90% native species cover)
	High human disturbance	Moderate human disturbance	Low human disturbance
Sub-totals	4	2	0
Combined Score	42		

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Rock Creek – Northwest Tributary
Riparian Corridor Area: 61 acres
Adjacent Wetlands: RO-D-01, RO-D-02
Adjacent Land Use: Farming with low density residential

Riparian Code: R-RO-D
Field Maps #: A2, B2
Field Date(s): 3/5/07, 3/6/07
Investigators: EL, TB, ACS

General Description

Broad valley floor at boundary between Clackamas River and Johnson Creek watersheds. Upper Rock Creek tributary lined nearly its entire length by wetlands. Riparian areas largely pastureland; small forest patches to north and south.

Riparian Characteristics

Stream/reach: Rock Creek – Northwest Tributary
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: culverts, low flow
 Large wood features: none noted
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Red alder*	Himalayan blackberry*	Reed canarygrass*
Douglas fir	Snowberry	Soft rush
Oregon ash	Rose (exotic)	Creeping buttercup
Black cottonwood		Slough sedge
Black hawthorn		

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Wildlife Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Biodiversity	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- Remove noxious species.
- Install streamside plantings of native tree, shrub and groundcover species – for thermal cover, habitat, species diversity.
- Oregon ash forest at north end of site may serve as a potential reference site for restoration strategies.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-RO-D



Function	Assessment Factors					
	Low (1 pt)		Medium (2 pts)		High (3 pts)	
Water Quality		Riparian area dominated by sparse herbs or no vegetation	2	Riparian area dominated by herbs or sparse woody vegetation		Riparian area dominated by dense woody vegetation
Score:	1	Average width of natural vegetation cover < 25'		Average width of natural vegetation cover: 25' to 50'		Average width of natural vegetation cover > 50'
10		Impervious surfaces > 25%		Impervious surfaces: 10 - 25%	3	Impervious surfaces < 10%
medium	1	Average channel shade < 25%		Average channel shade 25-50%		Average channel shade > 50%
		Severe soil erosion potential within riparian area		Moderate soil erosion potential within riparian area	3	Slight soil erosion potential within riparian area
Sub-totals	2		2		6	
Water storage/ flow moderation		No floodplains or wetlands in riparian area		Few, small floodplains or wetlands in riparian area	3	Multiple or large floodplains or wetlands in riparian area
Score:		Located in lower 1/3 of subwatershed		Located in middle 1/3 of subwatershed	3	Located in upper 1/3 of subwatershed
9	1	<20% woody vegetation cover within wetland or floodplain		20-50% woody vegetation within wetland or floodplain		>50% woody vegetation within wetland or floodplain
medium	1	High bank or channel alteration (>25% altered)		Moderate bank or channel alteration (5-25% altered)		Low bank or channel alteration (<5% altered)
	1	Low connectivity to upland habitats		Moderate connectivity to upland habitats		High connectivity to upland habitats
Sub-totals	3		0		6	
Fish Habitat	1	No fish identified		Potential fish presence		Fish-bearing stream (ODFW, ODF or other source)
Score:	1	Average channel shade < 25%	0	Average channel shade 25 - 50%	0	Average channel shade > 50%
6	1	Low large wood recruitment potential		Medium large wood recruitment potential		High large wood recruitment potential
low		Barrier(s) preventing juvenile and adult fish passage	2	Blockages under some flow conditions		No fish barriers (any/all crossings by bridge or ford)
	1	High bank or channel alteration (>25% altered)	0	Moderate bank or channel alteration (5-25% altered)	0	Low bank or channel alteration (<5% altered)
Sub-totals	4		2		0	
Wildlife Habitat		Seasonal surface water	2	Permanent surface water		Permanent surface water throughout reach
Score:	1	Low habitat diversity		Moderate habitat diversity		High habitat diversity
6	1	High human disturbance		Moderate human disturbance		Low human disturbance
low	1	No contiguous patches 5 acres in size		Contiguous patches 5-10 acres in size		Contiguous patches > 10 acres in size
	1	Low connectivity to upland habitats	0	Moderate connectivity to upland habitats	0	High connectivity to upland habitats
Sub-totals	4		2		0	
Biodiversity		No federal or state listed species		Potential habitat for federal or state listed species	3	Listed federal or state species present
Score:	1	No ONHP priority habitats		Potential ONHP priority habitats		ONHP priority habitats present*
7	1	No locally rare species or habitats		Potential locally rare species or habitats present		Locally rare species or habitats present
low	1	Low native cover (<50% native species cover)		Medium native cover (50 - 90% native species cover)		High native cover (>90% native species cover)
	1	High human disturbance	0	Moderate human disturbance	0	Low human disturbance
Sub-totals	4		0		3	
Combined Score	38					

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Rock Creek – Northeast Tributary
Riparian Corridor Area: 117 acres
Adjacent Wetlands: RO-E-01
Adjacent Land Use: Farming with low density residential

Riparian Code: R-RO-E
Field Maps #: B3
Field Date(s): 3/5/07, 3/16/07, 4/6/07
Investigators: EL, TB

General Description

Headwater tributary of Rock Creek, with multiple branches extending into buttes. Mixed deciduous and evergreen riparian forests along stream corridor. Large forested wetland in lower (western) segment of site.

Riparian Characteristics

Stream/reach: Rock Creek – Northeast Tributary
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: culverts
 Large wood features: snags and downed logs
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Red alder*	Hazelnut *	Sword fern*
Bigleaf maple	Dewberry	Trillium
Black cottonwood	Salal	English ivy
Douglas fir	Oceanspray	
Exotic cherry	Vine maple	
	Snowberry	
	Himalayan blackberry	

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Fish Habitat	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Wildlife Habitat	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Biodiversity	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- Streamside plantings of native tree, shrub and groundcover species – for thermal cover, soil stabilization, habitat corridor, species diversity.
- Removal of noxious species.
- Restoration and revegetation of ditched stream segments.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-RO-E



Assessment Factors

Function	Low (1 pt)	Medium (2 pts)	High (3 pts)
Water Quality	Riparian area dominated by sparse herbs or no vegetation	Riparian area dominated by herbs or sparse woody vegetation	Riparian area dominated by dense woody vegetation
Score:	Average width of natural vegetation cover < 25'	Average width of natural vegetation cover: 25' to 50'	Average width of natural vegetation cover > 50'
14	Impervious surfaces > 25%	Impervious surfaces: 10 - 25%	Impervious surfaces < 10%
high	Average channel shade < 25%	Average channel shade 25-50%	Average channel shade > 50%
	Severe soil erosion potential within riparian area	Moderate soil erosion potential within riparian area	Slight soil erosion potential within riparian area
Sub-totals	0	2	12
Water storage/ flow moderation	No floodplains or wetlands in riparian area	Few, small floodplains or wetlands in riparian area	Multiple or large floodplains or wetlands in riparian area
Score:	Located in lower 1/3 of subwatershed	Located in middle 1/3 of subwatershed	Located in upper 1/3 of subwatershed
14	<20% woody vegetation cover within wetland or floodplain	20-50% woody vegetation within wetland or floodplain	>50% woody vegetation within wetland or floodplain
high	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	Low bank or channel alteration (<5% altered)
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	High connectivity to upland habitats
Sub-totals	0	2	12
Fish Habitat	No fish identified	Potential fish presence	Fish-bearing stream (ODFW, ODF or other source)
Score:	Average channel shade < 25%	Average channel shade 25 - 50%	Average channel shade > 50%
12	Low large wood recruitment potential	Medium large wood recruitment potential	High large wood recruitment potential
high	Barrier(s) preventing juvenile and adult fish passage	Blockages under some flow conditions	No fish barriers (any/all crossings by bridge or ford)
	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	Low bank or channel alteration (<5% altered)
Sub-totals	1	2	9
Wildlife Habitat	Seasonal surface water	Permanent surface water	Permanent surface water throughout reach
Score:	Low habitat diversity	Moderate habitat diversity	High habitat diversity
13	High human disturbance	Moderate human disturbance	Low human disturbance
high	No contiguous patches 5 acres in size	Contiguous patches 5-10 acres in size	Contiguous patches > 10 acres in size
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	High connectivity to upland habitats
Sub-totals	0	4	9
Biodiversity	No federal or state listed species	Potential habitat for federal or state listed species	Listed federal or state species present
Score:	No ONHP priority habitats	Potential ONHP priority habitats	ONHP priority habitats present*
11	No locally rare species or habitats	Potential locally rare species or habitats present	Locally rare species or habitats present
medium	Low native cover (<50% native species cover)	Medium native cover (50 - 90% native species cover)	High native cover (>90% native species cover)
	High human disturbance	Moderate human disturbance	Low human disturbance
Sub-totals	2	0	9
Combined Score	64		

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Rock Creek – Mainstem	Riparian Code: R-RO-F
Riparian Corridor Area: 301 acres	Field Maps #: C3, C4, B4
Adjacent Wetlands: RO-F-01, RO-F-02	Field Date(s): 3/5/07, 3/16/07
Adjacent Land Use: Low density residential and farming	Investigators: EL, TB

General Description

Rock Creek mainstem with multiple spring-fed tributaries and intact forested riparian corridors. Fish-bearing stream documented by ODFW; resident cutthroat trout in lower part of this reach. High number of interspersed seeps and springs on the buttes and along streams and wetlands.

Riparian Characteristics

Stream/reach: Rock Creek – Mainstem
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: 3 culverts (see notes)
 Large wood features: snags, downed logs, stumps
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes: Culverts at Wiese, Bohna and Tillstrom Roads are partial fish passage barriers

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Red alder*	Hazelnut *	Sword fern*
Western red cedar*	Vine maple*	Reed canarygrass
Douglas fir	Dull Oregon grape	Lady fern
Bigleaf maple	salmonberry	Pacific waterleaf
Black cottonwood	Osoberry	Large-leaved avens
English holly	Himalayan blackberry	English ivy

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Fish Habitat	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Wildlife Habitat	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Biodiversity	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- Streamside plantings of native tree, shrub and groundcover species – for thermal cover, soil stabilization, habitat corridor, species diversity.
- Removal of noxious species (e.g., blackberry, holly, reed canarygrass)
- Some stream segments may benefit from large wood to stabilize downcutting.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-RO-F



Assessment Factors

Function	Low (1 pt)	Medium (2 pts)	High (3 pts)
Water Quality	Riparian area dominated by sparse herbs or no vegetation	2	Riparian area dominated by herbs or sparse woody vegetation
Score:	Average width of natural vegetation cover < 25'	2	Average width of natural vegetation cover: 25' to 50'
high	Impervious surfaces > 25%		Impervious surfaces: 10 - 25%
	Average channel shade < 25%		Average channel shade 25-50%
	Severe soil erosion potential within riparian area	2	Moderate soil erosion potential within riparian area
Sub-totals	0	6	6
Water storage/ flow moderation	No floodplains or wetlands in riparian area		Few, small floodplains or wetlands in riparian area
Score:	Located in lower 1/3 of subwatershed		Located in middle 1/3 of subwatershed
high	<20% woody vegetation cover within wetland or floodplain		20-50% woody vegetation within wetland or floodplain
	High bank or channel alteration (>25% altered)	2	Moderate bank or channel alteration (5-25% altered)
	Low connectivity to upland habitats	2	Moderate connectivity to upland habitats
Sub-totals	0	4	9
Fish Habitat	No fish identified		Potential fish presence
Score:	0	0	3
high	Average channel shade < 25%	0	Average channel shade 25 - 50%
	Low large wood recruitment potential	2	Medium large wood recruitment potential
	Barrier(s) preventing juvenile and adult fish passage	2	Blockages under some flow conditions
0	High bank or channel alteration (>25% altered)	2	Moderate bank or channel alteration (5-25% altered)
Sub-totals	0	6	6
Wildlife Habitat	Seasonal surface water	2	Permanent surface water
Score:	Low habitat diversity	2	Moderate habitat diversity
medium	1	High human disturbance	Moderate human disturbance
	No contiguous patches 5 acres in size		Contiguous patches 5-10 acres in size
	0	Low connectivity to upland habitats	2
Sub-totals	1	6	3
Biodiversity	No federal or state listed species		Potential habitat for federal or state listed species
Score:	1	No ONHP priority habitats	Potential ONHP priority habitats
medium	No locally rare species or habitats		Potential locally rare species or habitats present
	Low native cover (<50% native species cover)		Medium native cover (50 - 90% native species cover)
	1	High human disturbance	0
Sub-totals	2	0	9
Combined Score	58		

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Sunshine Creek	Riparian Code: R-SU-A
Riparian Corridor Area: 187 acres	Field Maps #: A6
Adjacent Wetlands: SU-A-01, SU-A-02, SU-A-03	Field Date(s): 2/22/07, 3/4/07, 3/5/07, 3/6/07
Adjacent Land Use: Farming with low density residential	Investigators: EL, TB, ACS

General Description

Mainstem of Sunshine Creek with multiple tributaries and associated wetlands. Fish-bearing stream documented by ODFW. Riparian corridor impacted by farming, roads and development. Small patches of riparian forest in upper and lower (north and south) parts of the site.

Riparian Characteristics

Stream/reach: Sunshine Creek mainstem	Gradient: <input checked="" type="checkbox"/> low <2% <input type="checkbox"/> mod 2-4% <input type="checkbox"/> m/s 4-8% <input type="checkbox"/> steep >8%
Other features: <input checked="" type="checkbox"/> ponds <input checked="" type="checkbox"/> wetlands <input checked="" type="checkbox"/> springs	Side slopes: <input checked="" type="checkbox"/> <10% <input type="checkbox"/> 10-25% <input type="checkbox"/> 25-50% <input type="checkbox"/> >50%
Flooding potential <input checked="" type="checkbox"/> yes <input type="checkbox"/> no Source: observed	Average woody vegetated width: <input type="checkbox"/> <25' <input checked="" type="checkbox"/> 25-50' <input type="checkbox"/> >50'
Fish barriers/impediments: 3+ culverts (see notes)	Channel shade: <input checked="" type="checkbox"/> <25% <input type="checkbox"/> 25-50% <input type="checkbox"/> 50-75% <input type="checkbox"/> 75-100%
Large wood features: few small snags noted	Channel alteration: <input type="checkbox"/> <5% <input checked="" type="checkbox"/> 5-25% <input type="checkbox"/> >25%
Recruitment potential: <input checked="" type="checkbox"/> low <input type="checkbox"/> medium <input type="checkbox"/> high	Notes: Culverts at Tillstrom, 242 nd , Rugg and 257 th Roads documented as problems by ODFW

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Red alder*	Dull Oregon grape	Pasture grasses*
Western red cedar*	Vine maple*	Reed canarygrass
Oregon ash	Douglas spirea	Sword fern
Black cottonwood	Hazelnut	Bleeding heart
Bigleaf maple	Osoberry	Slough sedge
Douglas fir	Red elderberry	English ivy
Pacific willow	Himalayan blackberry	

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Wildlife Habitat	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	
Biodiversity	<input checked="" type="checkbox"/> Low	<input type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Potential enhancement measures include:

- Restore, re-meander and revegetate Sunshine Creek and wetlands in area of large wetland (SU-A-02). Oregon ash/slough sedge wetland at south end may serve as reference site.
- Install streamside plantings of native tree, shrub and groundcover species – for thermal cover, soil stabilization, habitat corridor, species diversity.
- Underplant cedars in areas with maturing alder galleries.
- Remove noxious plant species.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-SU-A



Assessment Factors

Function	Low (1 pt)	Medium (2 pts)	High (3 pts)
Water Quality	Riparian area dominated by sparse herbs or no vegetation	2	Riparian area dominated by herbs or sparse woody vegetation
Score:	Average width of natural vegetation cover < 25'	2	Average width of natural vegetation cover: 25' to 50'
11	Impervious surfaces > 25%		3
medium	1	Average channel shade < 25%	Average channel shade 25-50%
		Severe soil erosion potential within riparian area	Moderate soil erosion potential within riparian area
			3
			Slight soil erosion potential within riparian area
Sub-totals	1	4	6
Water storage/ flow moderation	No floodplains or wetlands in riparian area		Few, small floodplains or wetlands in riparian area
Score:	Located in lower 1/3 of subwatershed		Located in middle 1/3 of subwatershed
10	1	<20% woody vegetation cover within wetland or floodplain	20-50% woody vegetation within wetland or floodplain
medium		High bank or channel alteration (>25% altered)	2
		Low connectivity to upland habitats	1
			Moderate connectivity to upland habitats
			High connectivity to upland habitats
Sub-totals	2	2	6
Fish Habitat	No fish identified		Potential fish presence
Score:	1	Average channel shade < 25%	0
8	1	Low large wood recruitment potential	1
low	1	Barrier(s) preventing juvenile and adult fish passage	0
	0	High bank or channel alteration (>25% altered)	2
			Moderate bank or channel alteration (5-25% altered)
			Low bank or channel alteration (<5% altered)
Sub-totals	3	2	3
Wildlife Habitat	Seasonal surface water	2	Permanent surface water
Score:	Low habitat diversity	2	Moderate habitat diversity
8	1	High human disturbance	Moderate human disturbance
low		No contiguous patches 5 acres in size	2
	1	Low connectivity to upland habitats	0
			Moderate connectivity to upland habitats
			High connectivity to upland habitats
Sub-totals	2	6	0
Biodiversity	No federal or state listed species		Potential habitat for federal or state listed species
Score:	1	No ONHP priority habitats	Potential ONHP priority habitats
8	1	No locally rare species or habitats	Potential locally rare species or habitats present
low		Low native cover (<50% native species cover)	2
	1	High human disturbance	0
			Moderate human disturbance
			Low human disturbance
Sub-totals	3	2	3
Combined Score	45		

Damascus Goal 5/7 Natural Features Inventory

Riparian Corridor Summary Sheet



Riparian Site: Sunshine Creek – West Tributary
Riparian Corridor Area: 110 acres
Adjacent Wetlands: N/A
Adjacent Land Use: Farming with low density residential

Riparian Code: R-SU-B
Field Maps #: A5
Field Date(s): 3/5/07, 4/6/07
Investigators: EL, TB

General Description

Sunshine Creek tributary descending from largely intact forest habitats on “North Sunshine” butte. Riparian areas include stream segments with mature cedar forest. Fish-bearing stream documented by ODFW. Red-legged frogs detected within site.

Riparian Characteristics

Stream/reach: Sunshine Creek – West Tributary
 Other features: ponds wetlands springs
 Flooding potential yes no Source:
 Fish barriers/impediments: none, but see R-SU-A
 Large wood features: large snags, logs, stumps
 Recruitment potential: low medium high

Gradient: low <2% mod 2-4% m/s 4-8% steep >8%
 Side slopes: <10% 10-25% 25-50% >50%
 Average woody vegetated width: <25' 25-50' >50'
 Channel shade: <25% 25-50% 50-75% 75-100%
 Channel alteration: <5% 5-25% >25%
 Notes:

Vegetation (*dominant)

Trees	Shrubs	Herbs/Emergents
Western red cedar*	Salmonberry*	Sword fern*
Red alder	Vine maple	Bleeding heart
Bigleaf maple	Red elderberry	Maidenhair fern
Cascara	Hazelnut	Lady fern
Douglas fir	Red huckleberry	Trillium
Exotic cherry	Snowberry	Pacific waterleaf
English holly	Dull Oregon grape	Fringecup

Assessment Results

Riparian Function	Rating			Comments
Water Quality	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Water Storage/Flow Moderation	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	
Fish Habitat	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Wildlife Habitat	<input type="checkbox"/> Low	<input type="checkbox"/> Medium	<input checked="" type="checkbox"/> High	
Biodiversity	<input type="checkbox"/> Low	<input checked="" type="checkbox"/> Medium	<input type="checkbox"/> High	

Restoration/Enhancement Comments:

Site is in good condition overall, but could potentially benefit from:

- underplantings of native evergreens in stands dominated by bigleaf maples to diversify habitat.
- removal of noxious species.
- Restore and revegetate stream reach through nursery to the east, including large on-line ponds.

Damascus Goal 5/7 Natural Features Inventory

Riparian Functional Values Assessment – R-SU-B



Assessment Factors

Function	Low (1 pt)	Medium (2 pts)	High (3 pts)
Water Quality	Riparian area dominated by sparse herbs or no vegetation	Riparian area dominated by herbs or sparse woody vegetation	Riparian area dominated by dense woody vegetation
Score:	Average width of natural vegetation cover < 25'	Average width of natural vegetation cover: 25' to 50'	Average width of natural vegetation cover > 50'
14	Impervious surfaces > 25%	Impervious surfaces: 10 - 25%	Impervious surfaces < 10%
high	Average channel shade < 25%	Average channel shade 25-50%	Average channel shade > 50%
	Severe soil erosion potential within riparian area	Moderate soil erosion potential within riparian area	Slight soil erosion potential within riparian area
Sub-totals	0	2	12
Water storage/ flow moderation	No floodplains or wetlands in riparian area	Few, small floodplains or wetlands in riparian area	Multiple or large floodplains or wetlands in riparian area
Score:	Located in lower 1/3 of subwatershed	Located in middle 1/3 of subwatershed	Located in upper 1/3 of subwatershed
11	<20% woody vegetation cover within wetland or floodplain	20-50% woody vegetation within wetland or floodplain	>50% woody vegetation within wetland or floodplain
medium	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	Low bank or channel alteration (<5% altered)
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	High connectivity to upland habitats
Sub-totals	2	0	9
Fish Habitat	No fish identified	Potential fish presence	Fish-bearing stream (ODFW, ODF or other source)
Score:	Average channel shade < 25%	Average channel shade 25 - 50%	Average channel shade > 50%
14	Low large wood recruitment potential	Medium large wood recruitment potential	High large wood recruitment potential
high	Barrier(s) preventing juvenile and adult fish passage	Blockages under some flow conditions	No fish barriers (any/all crossings by bridge or ford)
	High bank or channel alteration (>25% altered)	Moderate bank or channel alteration (5-25% altered)	Low bank or channel alteration (<5% altered)
Sub-totals	0	2	12
Wildlife Habitat	Seasonal surface water	Permanent surface water	Permanent surface water throughout reach
Score:	Low habitat diversity	Moderate habitat diversity	High habitat diversity
12	High human disturbance	Moderate human disturbance	Low human disturbance
high	No contiguous patches 5 acres in size	Contiguous patches 5-10 acres in size	Contiguous patches > 10 acres in size
	Low connectivity to upland habitats	Moderate connectivity to upland habitats	High connectivity to upland habitats
Sub-totals	0	6	6
Biodiversity	No federal or state listed species	Potential habitat for federal or state listed species	Listed federal or state species present
Score:	No ONHP priority habitats	Potential ONHP priority habitats	ONHP priority habitats present*
10	No locally rare species or habitats	Potential locally rare species or habitats present	Locally rare species or habitats present
medium	Low native cover (<50% native species cover)	Medium native cover (50 - 90% native species cover)	High native cover (>90% native species cover)
	High human disturbance	Moderate human disturbance	Low human disturbance
Sub-totals	2	2	6
Combined Score	61		

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Badger Creek and Upland Habitat
Overall Site Size: 121 acres
Associated Wetlands: BA-A-01
Associated Riparian Corridors: R-BA-A
Habitat Code: BA-A
Field Maps #: A7
Field Date(s): 3/5/07, 3/16/07
Investigators: EL, TB

General Description

Badger Creek, tributary to Johnson Creek; red alder dominated riparian corridor, fragmented by roads and low density residential development. Stream, wetlands, and small ponds provide aquatic habitat. Limited upland deciduous and mixed forest habitats. High bird use with good connection to forested butte to southwest.

Component		Range of Values				Score Existing	Score Enhanced	Comments	
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	3	3			
	Quality	Poor 0	Moderate 4	Good 8	2	2			
	Proximity to cover	None 0	Near 4	Adjacent 8	2	2			
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	4	4		
FOOD	Variety	Low 0	Medium 4	High 8	2	3	Plant berry- or fruit-bearing natives, or species attracting insects		
	Quantity	Low 0	Medium 4	High 8	2	3	See above		
	Seasonality	Low 0	Limited 4	Yr-round 8	1	3	See above		
COVER	Structural diversity	Low 0	Medium 4	High 8	2	4	Plant evergreen and deciduous trees shrubs to build multi-tiered canopy		
	Variety and seasonality	Low 0	Medium 4	High 8	1	3	Plant evergreens to provide winter cover		
	Nesting and denning sites	Low 0	Medium 2	High 4	1	1			
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	2	2			
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	1	1			
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	0	0			
	Flora	Not rare 0	Somewhat 2	Very 4	0	0			
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	0	0			
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	1	1			
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	0	0			
	% nonnative herbs	100% 0	80% 1	50% 2	25% 3	10% 4	5% 5	0% 6	English ivy
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0% 6	Blackberry
	% nonnative canopy	>10% 0	5% 2	3% 3	0% 6	3	3		
TOTAL SCORE:					Existing 29	Enhanced 37			

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Clackamas River Corridor Habitats
Overall Site Size: 273 acres
Associated Wetlands: CL-A-01, CL-A-02, CL-A-03
Associated Riparian Corridors: R-CL-A

Habitat Code: CL-A
Field Maps #: F1, G1, G2
Field Date(s): 3/1/07, 3/14/07 & 4/4/07
Investigators: EL, TB

General Description

Diverse Clackamas River floodplain habitats with bottomland cottonwood forest, large wetland complex, island habitat. Mature mixed forest upland habitats climb the canyon walls extending across Oregon 224. These habitats include pockets of basalt cliffs and remnant Oak Savanna habitat.

Component		Range of Values				Score Existing	Score Enhanced	Comments			
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	8	8					
	Quality	Poor 0	Moderate 4	Good 8	4	4	DEQ – Water quality limited				
	Proximity to cover	None 0	Near 4	Adjacent 8	6	6					
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	8	8	Multiple wetlands, Clackamas River, streams			
FOOD	Variety	Low 0	Medium 4	High 8	7	7					
	Quantity	Low 0	Medium 4	High 8	7	7					
	Seasonality	Low 0	Limited 4	Yr-round 8	7	7					
COVER	Structural diversity	Low 0	Medium 4	High 8	6	6					
	Variety and seasonality	Low 0	Medium 4	High 8	7	7					
	Nesting and denning sites	Low 0	Medium 2	High 4	4	4					
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	5	5					
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	5	5					
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	4	4	Chinook, Steelhead, Coho; Bald eagle, pileated woodpecker, band tailed pigeon, bank swallow, red legged frog				
	Flora	Not rare 0	Somewhat 2	Very 4	0	0					
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	4	4	Complex bottomland forest, oak savanna habitat, basalt cliffs				
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	6	6					
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	4	4					
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	2	2			
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	2	2	
	% nonnative canopy	>10% 0	5% 2	3% 3	0 6	5	2				
TOTAL SCORE:					Existing 101	Enhanced 101					

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Clackamas River Uplands
 Overall Site Size: 244 acres
 Associated Wetlands: N/A
 Associated Riparian Corridors: N/A

Habitat Code: CL-B
 Field Maps #: F1, F2, G1, G2
 Field Date(s): 3/14/07
 Investigators: EL, TB

General Description

Large block of shrub/grassland area on hillside surrounded by forested edge. Provides forage and limited cover habitat for terrestrial wildlife, and serves as a linkage between habitats in Clackamas River and Rock Creek watersheds. Site contains Douglas fir dominated forest with blackberry, Scot's broom and other shrubs and grasses.

Component		Range of Values				Score Existing	Score Enhanced	Comments	
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8		0	0		
	Quality	Poor 0	Moderate 4	Good 8		0	0		
	Proximity to cover	None 0	Near 4	Adjacent 8		0	0		
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	0	0		
FOOD	Variety	Low 0	Medium 4	High 8		2	4	Plant berry- or fruit-bearing natives, or species attracting insects	
	Quantity	Low 0	Medium 4	High 8		2	4	See above	
	Seasonality	Low 0	Limited 4	Yr-round 8		2	4	See above	
COVER	Structural diversity	Low 0	Medium 4	High 8		2	4	Plant evergreen & deciduous trees shrubs to build multi-tiered canopy	
	Variety and seasonality	Low 0	Medium 4	High 8		1	2	Plant evergreens to provide winter cover	
	Nesting and denning sites	Low 0	Medium 2	High 4		1	2	Plant evergreen and deciduous trees shrubs to build multi-tiered canopy	
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8		1	1		
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6		3	3		
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4		0	0		
	Flora	Not rare 0	Somewhat 2	Very 4		0	0		
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4		0	0		
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8		5	5		
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8		2	2		
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	2	2	
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0% 6	Blackberry, Scots broom, English ivy
	% nonnative canopy	>10% 0	5% 2	3% 3		0% 6	3	3	
TOTAL SCORE:						Existing 27	Enhanced 37		

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Clackamas River Tributary Habitat
 Overall Site Size: 78 acres
 Associated Wetlands: N/A
 Associated Riparian Corridors: N/A

Habitat Code: CL-C
 Field Maps #: G2
 Field Date(s): 3/14/07
 Investigators: EL, TB

General Description

Site includes the upper reach of small unnamed tributary to Clackamas River, and is degraded by nearby residential development, with some reaches piped. Limited Douglas fir, alder and cottonwood forest habitat.

Component		Range of Values					Score Existing	Score Enhanced	Comments		
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8		4	4				
	Quality	Poor 0	Moderate 4	Good 8		3	3				
	Proximity to cover	None 0	Near 4	Adjacent 8		3	3				
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8		4	4			
FOOD	Variety	Low 0	Medium 4	High 8		2	4	Plant berry- or fruit-bearing natives, or species attracting insects			
	Quantity	Low 0	Medium 4	High 8		3	3				
	Seasonality	Low 0	Limited 4	Yr-round 8		4	4				
COVER	Structural diversity	Low 0	Medium 4	High 8		2	5	Plant evergreen & deciduous trees shrubs to build multi-tiered canopy			
	Variety and seasonality	Low 0	Medium 4	High 8		2	4	Plant evergreens to provide winter cover			
	Nesting and denning sites	Low 0	Medium 2	High 4		1	1				
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8		2	3	Repair stream			
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6		0	2	Plant stream buffer			
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4		0	0				
	Flora	Not rare 0	Somewhat 2	Very 4		0	0				
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4		0	0				
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8		2	2				
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8		1	1				
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	3	3			
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0% 6	3	3	
	% nonnative canopy	>10% 0	5% 2	3% 3	0% 6		3	3			
TOTAL SCORE:						Existing 42	Enhanced 52				

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Deep Creek and Upland Habitats
 Overall Site Size: 292 acres
 Associated Wetlands: N/A
 Associated Riparian Corridors: N/A

Habitat Code: DE-A
 Field Maps #: G4, G5
 Field Date(s): 4/6/07
 Investigators: EL, TB

General Description

Diverse wildlife habitat above Clackamas River and Deep Creek confluence. Habitats include mature mixed forest riparian corridors, mature mixed and evergreen upland forests, basalt cliffs, small cobble talus.

Component		Range of Values				Score Existing	Score Enhanced	Comments			
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	4	4					
	Quality	Poor 0	Moderate 4	Good 8	5	5					
	Proximity to cover	None 0	Near 4	Adjacent 8	6	6					
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	4	4				
FOOD	Variety	Low 0	Medium 4	High 8	6	6					
	Quantity	Low 0	Medium 4	High 8	5	5					
	Seasonality	Low 0	Limited 4	Yr-round 8	6	6					
COVER	Structural diversity	Low 0	Medium 4	High 8	6	6					
	Variety and seasonality	Low 0	Medium 4	High 8	6	6					
	Nesting and denning sites	Low 0	Medium 2	High 4	4	4					
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	5	5					
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	3	3					
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	4	4	Olive sided flycatcher, pilcated woodpecker, band tailed pigeon, bald eagle, red-legged frog, salamanders				
	Flora	Not rare 0	Somewhat 2	Very 4	0	0					
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	1	1	Old growth elements				
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	6	6					
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	6	6					
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	3	3			
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	4	4	
	% nonnative canopy	>10% 0	5% 2	3% 3	0 6	3	3				
TOTAL SCORE:					Existing 87	Enhanced 87					

Damascus Goal 5/7 Natural Features Inventory



Wildlife Habitat Assessment Summary Sheet

Habitat Site: Kelley Creek/North Butler Butte Habitats

Habitat Code: KE-A

Overall Site Size: 425 acres

Field Maps #: A3, A4

Associated Wetlands: N/A

Field Date(s): 3/5/07, 4/6/07

Associated Riparian Corridors: N/A

Investigators: EL, TB

General Description

Largely intact, mixed forest habitat dominated by Douglas fir, bigleaf maple and red alder. Headwaters of Kelley Creek, with multiple tributaries; mixed riparian forest habitats. Good wildlife linkages to forested buttes north, south, and east.

Component		Range of Values					Score Existing	Score Enhanced	Comments
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8		4	4		
	Quality	Poor 0	Moderate 4	Good 8		7	7	Water quality (bug) data: "slightly impaired"	
	Proximity to cover	None 0	Near 4	Adjacent 8		6	6		
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8		4	4	
FOOD	Variety	Low 0	Medium 4	High 8		6	6		
	Quantity	Low 0	Medium 4	High 8		6	6		
	Seasonality	Low 0	Limited 4	Yr-round 8		6	6		
COVER	Structural diversity	Low 0	Medium 4	High 8		6	6		
	Variety and seasonality	Low 0	Medium 4	High 8		6	6		
	Nesting and denning sites	Low 0	Medium 2	High 4		4	4		
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8		6	6		
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6		4	4		
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4		4	4	Pileated woodpecker, olive sided fly-catcher, red-legged frog, cutthroat trout	
	Flora	Not rare 0	Somewhat 2	Very 4		0	0		
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4		0	0		
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8		6	6		
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8		4	4		
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	3	3	
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0% 6	
	% nonnative canopy	>10% 0	5% 2	3% 3	0% 6		5	5	
TOTAL SCORE:						Existing 91	Enhanced 91		

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Noyer Creek Basin Habitats
Overall Site Size: 1326 acres
Associated Wetlands: NO-A-01, NO-I-02, NO-A-03, NO-A-04
Associated Riparian Corridors: R-NO-A

Habitat Code: NO-A
Field Maps #: D5
Field Date(s): 3/3/07, 3/13/07, 3/16/07, 4/4/07
Investigators: EL, TB

General Description

Multiple large and significant wetland habitats within site. Upper Noyer Creek riparian habitats degraded by farming and development. Limited upland forests in western and eastern parts of site.

Component		Range of Values				Score Existing	Score Enhanced	Comments		
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	6	6				
	Quality	Poor 0	Moderate 4	Good 8	2	2				
	Proximity to cover	None 0	Near 4	Adjacent 8	4	4				
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	6	6			
FOOD	Variety	Low 0	Medium 4	High 8	4	5	Plant berry- or fruit-bearing natives, or species attracting insects			
	Quantity	Low 0	Medium 4	High 8	4	4				
	Seasonality	Low 0	Limited 4	Yr-round 8	5	5				
COVER	Structural diversity	Low 0	Medium 4	High 8	3	3				
	Variety and seasonality	Low 0	Medium 4	High 8	3	4	Plant evergreens to provide winter cover			
	Nesting and denning sites	Low 0	Medium 2	High 4	2	2				
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	3	5	Repair stream			
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	2	4	Plant stream buffer			
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	0	0				
	Flora	Not rare 0	Somewhat 2	Very 4	0	0				
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	0	0				
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	3	3				
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	3	3				
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	2	3	Remove ivy, reed canarygrass, other invasives	
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	4	4
% nonnative canopy	>10% 0	5% 2	3% 3	0 6	4	4				
TOTAL SCORE:					Existing 60	Enhanced 67				

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Richardson Creek - West Habitat
Overall Site Size: 173 acres
Associated Wetlands: RI-A-01
Associated Riparian Corridors: R-RI-A

Habitat Code: RI-A
Field Maps #: F2, F3
Field Date(s): 3/14/07, 4/4/07
Investigators: EL, TB

General Description

Riparian habitat partly fragmented by road and development. Douglas fir forest patches near stream. Stream drops into an intact forested ravine before joining Richardson Creek in core habitat area (see R-RI-A).

Component		Range of Values				Score Existing	Score Enhanced	Comments			
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	5	5					
	Quality	Poor 0	Moderate 4	Good 8	4	4					
	Proximity to cover	None 0	Near 4	Adjacent 8	3	3					
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	4	4				
FOOD	Variety	Low 0	Medium 4	High 8	4	5	Plant berry- or fruit-bearing natives, or species attracting insects				
	Quantity	Low 0	Medium 4	High 8	3	4	See above				
	Seasonality	Low 0	Limited 4	Yr-round 8	3	4	See above				
COVER	Structural diversity	Low 0	Medium 4	High 8	3	4	Plant evergreen & deciduous trees & shrubs to build multi-tiered canopy				
	Variety and seasonality	Low 0	Medium 4	High 8	3	4	Plant evergreens to provide winter cover				
	Nesting and denning sites	Low 0	Medium 2	High 4	2	2					
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	2	4	Repair stream, especially at South end				
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	2	2					
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	0	0					
	Flora	Not rare 0	Somewhat 2	Very 4	0	0					
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	0	0					
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	1	1					
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	1	1					
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	2	2			
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0% 6	2	2	
	% nonnative canopy	>10% 0	5% 2	3% 3	0% 6	3	3				
TOTAL SCORE:					Existing 47	Enhanced 54					

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Richardson Creek Confluence Habitats
Overall Site Size: 139 acres
Associated Wetlands: N/A
Associated Riparian Corridors: R-RI-B

Habitat Code: RI-B
Field Maps #: E3, F3, F4
Field Date(s): 3/14/07, 3/29/07
Investigators: EL, TB

General Description

Confluence of Richardson Creek's main stem and north branch. One of highest quality riparian and upland habitats within the City. Mixed forested uplands with continuous connection to riparian corridors.

Component		Range of Values				Score Existing	Score Enhanced	Comments			
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	7	7					
	Quality	Poor 0	Moderate 4	Good 8	6	6					
	Proximity to cover	None 0	Near 4	Adjacent 8	7	7					
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	6	6				
FOOD	Variety	Low 0	Medium 4	High 8	6	6					
	Quantity	Low 0	Medium 4	High 8	7	7					
	Seasonality	Low 0	Limited 4	Yr-round 8	6	6					
COVER	Structural diversity	Low 0	Medium 4	High 8	6	6					
	Variety and seasonality	Low 0	Medium 4	High 8	6	6					
	Nesting and denning sites	Low 0	Medium 2	High 4	4	4					
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	6	6					
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	4	4					
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	4	4	Steelhead, Coho; band tailed pigeon, pileated woodpecker, red legged frog				
	Flora	Not rare 0	Somewhat 2	Very 4	0	0					
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	0	0					
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	6	6					
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	4	4					
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	3	3			
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	4	4	
	% nonnative canopy	>10% 0	5% 2	3% 3	0 6	3	3				
TOTAL SCORE:					Existing 95	Enhanced 95					

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Richardson Creek Northwest Habitat
Overall Site Size: 386 acres
Associated Wetlands: RI-C-01, RI-C-02
Associated Riparian Corridors: R-RI-C

Habitat Code: RI-C
Field Maps #: E3
Field Date(s): 3/9/07, 3/21/07, 3/29/07
Investigators: EL, TB

General Description

Richardson Creek tributary with significant stream-associated wetland habitats. Riparian habitat fragmented by roads, pasture and development. Small areas of grassland and forest habitat outside riparian/wetland corridor.

Component		Range of Values				Score Existing	Score Enhanced	Comments			
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	4	4	Intermittent stream and wetland				
	Quality	Poor 0	Moderate 4	Good 8	4	4	Bug data – “moderately impaired” downstream				
	Proximity to cover	None 0	Near 4	Adjacent 8	4	4					
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	6	6				
FOOD	Variety	Low 0	Medium 4	High 8	4	5	Plant berry- or fruit-bearing natives, or species attracting insects				
	Quantity	Low 0	Medium 4	High 8	3	5	See above				
	Seasonality	Low 0	Limited 4	Yr-round 8	3	5	See above				
COVER	Structural diversity	Low 0	Medium 4	High 8	2	4	Plant evergreen & deciduous trees & shrubs to build multi-tiered canopy layers				
	Variety and seasonality	Low 0	Medium 4	High 8	2	4	Plant evergreens to provide winter cover				
	Nesting and denning sites	Low 0	Medium 2	High 4	2	2					
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	2	4	Restore stream meanders				
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	3	3					
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	0	0					
	Flora	Not rare 0	Somewhat 2	Very 4	0	0					
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	0	0					
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	1	1					
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	1	1					
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	1	2	Remove invasives		
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	3	4	Remove invasives
	% nonnative canopy	>10% 0	5% 2	3% 3	0 6	3	3				
TOTAL SCORE:					Existing 48	Enhanced 61					

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Richardson Creek North Habitat
Overall Site Size: 609 acres
Associated Wetlands: RI-D-01, RI-D-02
Associated Riparian Corridors: R-RI-D

Habitat Code: RI-D
Field Maps #: D4, E3, E4
Field Date(s): 3/21/07, 3/29/07, 4/4/07
Investigators: EL, TB

General Description

Richardson Creek tributary through Damascus town center. Riparian habitats generally fragmented. Upland forest habitat limited and located primarily on steeper slopes at north end of site.

Component		Range of Values				Score Existing	Score Enhanced	Comments			
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8		4	4				
	Quality	Poor 0	Moderate 4	Good 8		4	4				
	Proximity to cover	None 0	Near 4	Adjacent 8		4	4				
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	6	6				
FOOD	Variety	Low 0	Medium 4	High 8		4	5	Plant berry- or fruit-bearing natives, or species attracting insects			
	Quantity	Low 0	Medium 4	High 8		4	6	See above			
	Seasonality	Low 0	Limited 4	Yr-round 8		4	5	See above			
COVER	Structural diversity	Low 0	Medium 4	High 8		3	5	Plant evergreen & deciduous trees & shrubs to build multi-tiered canopy			
	Variety and seasonality	Low 0	Medium 4	High 8		4	5	Plant evergreens to provide winter cover			
	Nesting and denning sites	Low 0	Medium 2	High 4		2	3	Plant evergreen & deciduous trees & shrubs to build multi-tiered canopy			
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8		4	4				
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6		2	2				
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4		1	1	Bufflehead			
	Flora	Not rare 0	Somewhat 2	Very 4		0	0				
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4		0	0				
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8		2	2				
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8		2	2				
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	2	3	Remove invasive herbs		
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0% 6	2	4	Remove hackberry
	% nonnative canopy	>10% 0	5% 2	3% 3	0% 6		3	3			
TOTAL SCORE:						Existing 57	Enhanced 67				

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Richardson Creek - Northeast Habitat
 Overall Site Size: 399 acres
 Associated Wetlands: RI-E-01
 Associated Riparian Corridors: R-RI-E

Habitat Code: RI-E
 Field Maps #: D4, E4
 Field Date(s): 3/16/07, 3/29/07
 Investigators: EL, TB

General Description

A largely farmed and developed habitat site with minimal forest cover along stream. One stream-associated wetland habitat.

Component		Range of Values				Score Existing	Score Enhanced	Comments			
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	4	4					
	Quality	Poor 0	Moderate 4	Good 8	2	2					
	Proximity to cover	None 0	Near 4	Adjacent 8	2	2					
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	6	6				
FOOD	Variety	Low 0	Medium 4	High 8	1	3	Plant berry- or fruit-bearing natives, or species attracting insects				
	Quantity	Low 0	Medium 4	High 8	1	3	See above				
	Seasonality	Low 0	Limited 4	Yr-round 8	1	3	See above				
COVER	Structural diversity	Low 0	Medium 4	High 8	1	2	Plant evergreen & deciduous trees & shrubs to build multi-tiered canopy				
	Variety and seasonality	Low 0	Medium 4	High 8	1	4	Plant evergreens to provide winter cover				
	Nesting and denning sites	Low 0	Medium 2	High 4	1	2	Plant evergreen & deciduous trees & shrubs to build multi-tiered canopy				
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	1	2	Repair stream				
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	2	2					
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	0	0					
	Flora	Not rare 0	Somewhat 2	Very 4	0	0					
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	0	0					
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	1	2	Plant stream corridor				
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	0	0					
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	1	2	Remove ivy		
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	2	2	
	% nonnative canopy	>10% 0	5% 2	3% 3	0 6	2	2				
TOTAL SCORE:					Existing 29	Enhanced 43					

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Richardson Creek East Habitat
Overall Site Size: 342 acres
Associated Wetlands: N/A
Associated Riparian Corridors: R-RI-F

Habitat Code: RI-F
Field Maps #: F4, F5
Field Date(s): 3/29/07
Investigators: EL, TB

General Description

High bird use with good connection to forested Clackamas River canyon to south. Riparian habitats partly fragmented by roads, farming and development. Mixed upland forest is scattered throughout site; shrub and grasslands provide some connective habitat.

Component		Range of Values				Score Existing	Score Enhanced	Comments			
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	3	3					
	Quality	Poor 0	Moderate 4	Good 8	3	3					
	Proximity to cover	None 0	Near 4	Adjacent 8	3	3					
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	4	4				
FOOD	Variety	Low 0	Medium 4	High 8	2	3	Plant berry- or fruit-bearing natives, or species attracting insects				
	Quantity	Low 0	Medium 4	High 8	1	3	See above				
	Seasonality	Low 0	Limited 4	Yr-round 8	2	3	See above				
COVER	Structural diversity	Low 0	Medium 4	High 8	2	3	Plant evergreen & deciduous trees & shrubs to build multi-tiered canopy				
	Variety and seasonality	Low 0	Medium 4	High 8	2	4	Plant evergreens to provide winter cover				
	Nesting and denning sites	Low 0	Medium 2	High 4	1	2	Plant evergreen & deciduous trees & shrubs to build multi-tiered canopy				
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	2	3	Repair stream				
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	1	1					
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	0	0					
	Flora	Not rare 0	Somewhat 2	Very 4	0	0					
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	0	0					
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	1	2	Plant stream corridor				
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	2	2					
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	1	2	Remove invasives		
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	2	2	
	% nonnative canopy	>10% 0	5% 2	3% 3	0 6	2	2				
TOTAL SCORE:					Existing 34	Enhanced 45					

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Rock Creek - South Tributary Habitats
Overall Site Size: 445 acres
Associated Wetlands: RO-A-01, RO-A-02, RO-A-03
Associated Riparian Corridors: R-RO-A

Habitat Code: RO-A
Field Maps #: F1, F2
Field Date(s): 3/9/07, 3/14/07, 4/4/07
Investigators: EL, TB

General Description

Lower Rock Creek tributary with multiple and diverse wetlands connected to forest habitats. Mature upland forests connected to forested riparian corridors. Nearby residential development and roads fragment habitat areas.

Component		Range of Values				Score Existing	Score Enhanced	Comments			
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	7	7	Perennial streams				
	Quality	Poor 0	Moderate 4	Good 8	4	4					
	Proximity to cover	None 0	Near 4	Adjacent 8	5	5	No cover at pond				
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	8	8				
FOOD	Variety	Low 0	Medium 4	High 8	5	5	Blackberry dominated areas				
	Quantity	Low 0	Medium 4	High 8	4	5	Plant berry- or fruit-bearing natives, or species attracting insects				
	Seasonality	Low 0	Limited 4	Yr-round 8	4	4					
COVER	Structural diversity	Low 0	Medium 4	High 8	4	5	Plant evergreen & deciduous trees & shrubs to build multi-tiered canopy				
	Variety and seasonality	Low 0	Medium 4	High 8	4	5	Plant evergreens to provide winter cover				
	Nesting and denning sites	Low 0	Medium 2	High 4	3	3					
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	4	4					
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	1	1					
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	3	3	Pileated woodpecker, bufflehead, red legged frog				
	Flora	Not rare 0	Somewhat 2	Very 4	0	0					
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	0	0					
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	2	2					
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	4	4					
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	3	4	Remove invasives		
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	2	3	Remove invasives
	% nonnative canopy	>10% 0	5% 2	3% 3	0 6	4	4	English holly			
TOTAL SCORE:					Existing 71	Enhanced 76					

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Rock Creek - Sunnyside Tributary Habitats
Overall Site Size: 246 acres
Associated Wetlands: RO-B-01
Associated Riparian Corridors: R-RO-A

Habitat Code: RO-B
Field Maps #: E2
Field Date(s): 3/21/07, 3/29/07
Investigators: EL, TB

General Description

Rock Creek tributary with ash swale riparian habitat; degraded elsewhere. Small forested upland habitat patches.

Component		Range of Values				Score Existing	Score Enhanced	Comments			
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	5	5					
	Quality	Poor 0	Moderate 4	Good 8	4	4					
	Proximity to cover	None 0	Near 4	Adjacent 8	3	3					
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	6	6				
FOOD	Variety	Low 0	Medium 4	High 8	3	4	Plant berry- or fruit-bearing natives, or species attracting insects				
	Quantity	Low 0	Medium 4	High 8	2	4	See above				
	Seasonality	Low 0	Limited 4	Yr-round 8	3	4	See above				
COVER	Structural diversity	Low 0	Medium 4	High 8	2	4	Plant evergreen & deciduous trees & shrubs to build multi-tiered canopy				
	Variety and seasonality	Low 0	Medium 4	High 8	3	4	Plant evergreens to provide winter cover				
	Nesting and denning sites	Low 0	Medium 2	High 4	1	2	Plant evergreen & deciduous trees & shrubs to build multi-tiered canopy				
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	3	4	Repair stream				
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	2	2					
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	0	0					
	Flora	Not rare 0	Somewhat 2	Very 4	0	0					
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	0	0					
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	1	2	Plant stream corridor				
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	1	1					
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	2	2			
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	1	2	Remove invasives
	% nonnative canopy	>10% 0	5% 2	3% 3	0 6	2	2				
TOTAL SCORE:					Existing 44	Enhanced 55					

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Rock Creek - Vogel Tributary Habitat
Overall Site Size: 313 acres
Associated Wetlands: N/A
Associated Riparian Corridors: R-RO-C

Habitat Code: RO-C
Field Maps #: D2
Field Date(s): 3/21/07
Investigators: EL, TB

General Description

Mature forest habitat area near confluence of two stream branches. Riparian corridor fragmented by roads and development; Douglas fir dominated upland forest patches.

Component		Range of Values				Score Existing	Score Enhanced	Comments			
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	6	6	Spring fed (at least one tributary)				
	Quality	Poor 0	Moderate 4	Good 8	4	4	Some siltation				
	Proximity to cover	None 0	Near 4	Adjacent 8	4	4					
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	4	4				
FOOD	Variety	Low 0	Medium 4	High 8	3	5					
	Quantity	Low 0	Medium 4	High 8	2	5					
	Seasonality	Low 0	Limited 4	Yr-round 8	4	4					
COVER	Structural diversity	Low 0	Medium 4	High 8	3	5					
	Variety and seasonality	Low 0	Medium 4	High 8	3	5					
	Nesting and denning sites	Low 0	Medium 2	High 4	2	2					
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	0	0	Extensive piped stream segments				
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	1	1					
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	0	0					
	Flora	Not rare 0	Somewhat 2	Very 4	0	0					
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	0	0					
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	1	1					
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	2	2					
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	3	3			
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	2	2	
	% nonnative canopy	>10% 0	5% 2	3% 3	0 6	3	3	Cherry (<i>P. avium</i>)			
TOTAL SCORE:					Existing 47	Enhanced 56					

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Rock Creek - Northwest Habitats
Overall Site Size: 180 acres
Associated Wetlands: RO-D-01, RO-D-02
Associated Riparian Corridors: R-RO-D

Habitat Code: RO-D
Field Maps #: A2, B2
Field Date(s): 3/5/07, 3/6/07
Investigators: EL, TB

General Description

Large wetland complex, linked to Johnson Creek wetland habitats to the north (this site is part of a saddle between basins). Riparian areas largely pastureland; small forest patches to north and south.

Component		Range of Values				Score Existing	Score Enhanced	Comments			
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	5	5					
	Quality	Poor 0	Moderate 4	Good 8	4	6	Add streamside cover, fencing				
	Proximity to cover	None 0	Near 4	Adjacent 8	2	4	Add streamside cover, fencing				
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	6	6				
FOOD	Variety	Low 0	Medium 4	High 8	2	4	Plant berry- or fruit-bearing natives, or species attracting insects				
	Quantity	Low 0	Medium 4	High 8	3	4					
	Seasonality	Low 0	Limited 4	Yr-round 8	3	3					
COVER	Structural diversity	Low 0	Medium 4	High 8	1	3	Add cover				
	Variety and seasonality	Low 0	Medium 4	High 8	1	3	Plant evergreen & deciduous trees & shrubs to build multi-tiered canopy				
	Nesting and denning sites	Low 0	Medium 2	High 4	0	2	Plant evergreen & deciduous trees & shrubs to build multi-tiered canopy				
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	3	3					
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	3	3					
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	1	1	Pileated woodpecker				
	Flora	Not rare 0	Somewhat 2	Very 4	0	0					
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	0	0					
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	1	1					
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	0	0					
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	1	1			
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	2	2	
	% nonnative canopy	>10% 0	5% 2	3% 3	0 6	3	3				
TOTAL SCORE:					Existing 41	Enhanced 54					

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Rock Creek - NE Tributary and Butte Habitats
Overall Site Size: 752 acres
Associated Wetlands: RO-E-01
Associated Riparian Corridors: R-RO-E

Habitat Code: RO-E
Field Maps #: B3
Field Date(s): 3/5/07, 3/16/07, 4/6/07
Investigators: EL, TB

General Description

Site contains large habitat patches and one of most significant wetlands in City. Mixed riparian forests along stream corridor. Douglas fir and bigleaf maple dominated forest habitats occur in large blocks on buttes.

Component		Range of Values				Score Existing	Score Enhanced	Comments	
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	4	4			
	Quality	Poor 0	Moderate 4	Good 8	5	5			
	Proximity to cover	None 0	Near 4	Adjacent 8	6	6			
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	6	6		
FOOD	Variety	Low 0	Medium 4	High 8	5	5			
	Quantity	Low 0	Medium 4	High 8	5	5			
	Seasonality	Low 0	Limited 4	Yr-round 8	6	6			
COVER	Structural diversity	Low 0	Medium 4	High 8	5	5			
	Variety and seasonality	Low 0	Medium 4	High 8	5	5			
	Nesting and denning sites	Low 0	Medium 2	High 4	4	4			
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	6	6			
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	5	5			
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	1	1	Pileated woodpecker		
	Flora	Not rare 0	Somewhat 2	Very 4	0	0			
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	0	0			
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	5	5			
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	4	4			
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	3	3	
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	4
% nonnative canopy	>10% 0	5% 2	3% 3	0 6	4	4			
TOTAL SCORE:					Existing 83	Enhanced 83			

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Rock Creek and Butte Habitats
Overall Site Size: 1,567 acres
Associated Wetlands: RO-F-01, RO-F-02
Associated Riparian Corridors: R-RO-F

Habitat Code: RO-F
Field Maps #: C3, C4, B4
Field Date(s): 3/5/07, 3/16/07
Investigators: EL, TB

General Description

Diverse wetland, riparian and upland habitats with high number of interspersed seeps and springs. Large blocks of intact mixed forest habitats on buttes and connected to stream corridors; good quality grassland habitats connected to forest habitats. Mature cedars are common in forests throughout site. Some stream sections disturbed and fragmented by development.

Component		Range of Values				Score Existing	Score Enhanced	Comments		
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	5	5				
	Quality	Poor 0	Moderate 4	Good 8	6	6				
	Proximity to cover	None 0	Near 4	Adjacent 8	6	6				
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	6	6			
FOOD	Variety	Low 0	Medium 4	High 8	6	6				
	Quantity	Low 0	Medium 4	High 8	6	6				
	Seasonality	Low 0	Limited 4	Yr-round 8	7	7				
COVER	Structural diversity	Low 0	Medium 4	High 8	5	5				
	Variety and seasonality	Low 0	Medium 4	High 8	6	6				
	Nesting and denning sites	Low 0	Medium 2	High 4	4	4				
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	4	4				
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	3	3				
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	4	4	Olive sided flycatcher, pileated woodpecker, red legged frog, cutthroat trout			
	Flora	Not rare 0	Somewhat 2	Very 4	0	0				
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	1	1	Unusual diversity of springs and seeps			
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	5	5				
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	5	5				
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	3	3		
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	4	4
% nonnative canopy	>10% 0	5% 2	3% 3	0 6	5	5				
TOTAL SCORE:					Existing 91	Enhanced 91				

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Sunshine Creek Habitats
Overall Site Size: 1,489 acres
Associated Wetlands: SU-A-01, SU-A-02, SU-A-03
Associated Riparian Corridors: R-SU-A

Habitat Code: SU-A
Field Maps #: A6
Field Date(s): 2/22/07, 3/4/07, 3/5/07, 3/6/07
Investigators: EL, TB

General Description

Sunshine Creek riparian habitat includes large farmed wetland area. Site is impacted by farming, roads and development. Smaller patches of upland forest occur primarily in eastern portion of site, with limited riparian forests to the north and south. Key restoration opportunities in the wetland and stream areas.

Component		Range of Values				Score Existing	Score Enhanced	Comments
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	6	6		
	Quality	Poor 0	Moderate 4	Good 8	2	2	Bug data – “severely impaired”	
	Proximity to cover	None 0	Near 4	Adjacent 8	4	4		
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	6	6	Stream/wetlands
FOOD	Variety	Low 0	Medium 4	High 8	4	5	Enhance/widen woody riparian corridor	
	Quantity	Low 0	Medium 4	High 8	2	4	Enhance/widen woody riparian corridor	
	Seasonality	Low 0	Limited 4	Yr-round 8	4	5	Enhance/widen woody riparian corridor	
COVER	Structural diversity	Low 0	Medium 4	High 8	3	5	Enhance/widen woody riparian corridor	
	Variety and seasonality	Low 0	Medium 4	High 8	3	5	Enhance/widen woody riparian corridor	
	Nesting and denning sites	Low 0	Medium 2	High 4	2	3	Enhance/widen woody riparian corridor	
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	1	1		
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	1	1		
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	3	3	Olive sided flycatcher, willow flycatcher, red legged frog	
	Flora	Not rare 0	Somewhat 2	Very 4	0	0		
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	2	2	Ash/slough sedge wetland	
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	3	3		
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	2	2		
	% nonnative herbs	100% 0	80% 1	50% 2	25% 3	10% 6	0% 0	
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0% 6
% nonnative canopy	>10% 0	5% 2	3% 3	0% 6	4	4		
TOTAL SCORE:					Existing 56	Enhanced 65		

Damascus Goal 5/7 Natural Features Inventory

Wildlife Habitat Assessment Summary Sheet



Habitat Site: Sunshine Creek - West Tributary & Butte Habitats **Habitat Code:** SU-B
Overall Site Size: 533 acres **Field Maps #:** A5
Associated Wetlands: N/A **Field Date(s):** 3/5/07, 4/6/07
Associated Riparian Corridors: R-SU-B **Investigators:** EL, TB

General Description

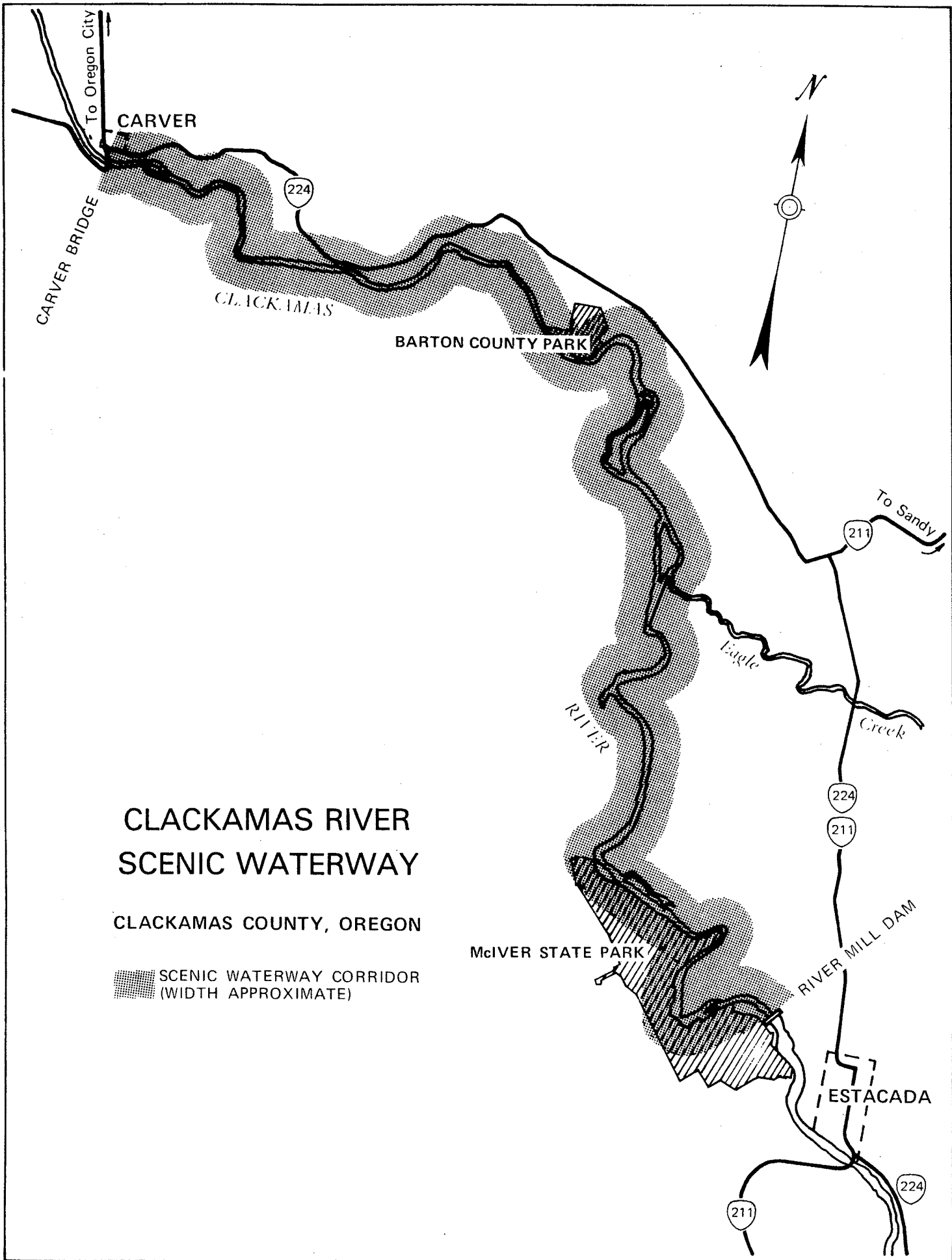
Mature cedar forest and large blocks of intact mixed forest habitats on "North Sunshine" butte connected to generally intact riparian corridor.

Component		Range of Values				Score Existing	Score Enhanced	Comments			
WATER	Seasonality and Quantity	None 0	Moderate 4	Good 8	6	6					
	Quality	Poor 0	Moderate 4	Good 8	5	5	Bug data – "moderately impaired"				
	Proximity to cover	None 0	Near 4	Adjacent 8	7	7					
	Diversity (streams, ponds, wetlands)	Zero 0	One 4	Two 6	Three+ 8	4	4				
FOOD	Variety	Low 0	Medium 4	High 8	6	6					
	Quantity	Low 0	Medium 4	High 8	6	6					
	Seasonality	Low 0	Limited 4	Yr-round 8	6	6					
COVER	Structural diversity	Low 0	Medium 4	High 8	6	6					
	Variety and seasonality	Low 0	Medium 4	High 8	6	6					
	Nesting and denning sites	Low 0	Medium 2	High 4	4	4					
HUMAN DISTURB	Habitat modification, structures, etc.	High 0	Medium 4	Low 8	4	4					
	Direct human disturb. (people, traffic, pets)	High 0	Medium 3	Low 6	3	3	Dogs, cats				
RARE FEATURES	Wildlife	Not rare 0	Somewhat 2	Very 4	4	4	Purple martin, pileated woodpecker, willow flycatcher, olive sided flycatcher, red legged frog				
	Flora	Not rare 0	Somewhat 2	Very 4	0	0					
	Rarity of habitat type	Not rare 0	Somewhat 2	Very 4	1	1	Mature cedar forest				
IMPORTANT HABITAT FEATURES	Connectivity	Low 0	Medium 4	High 8	5	5					
	Downed wood, old stumps, snags	Low 0	Medium 4	High 8	6	6					
	% nonnative herbs	100% 0	80% 1	50% 2	10% 3	0% 6	3	3			
	% nonnative shrubs	100% 0	75% 1	50% 2	25% 3	10% 4	5% 5	0 6	4	4	
	% nonnative canopy	>10% 0	5% 2	3% 3	0 6	4	4				
TOTAL SCORE:					Existing 90	Enhanced 90					

CLACKAMAS RIVER
STATE SCENIC WATERWAY
(Clackamas County)

MANAGEMENT PROGRAM
AND BACKGROUND REPORT

PREPARED BY
OREGON DEPARTMENT OF TRANSPORTATION
STATE PARKS AND RECREATION DIVISION
SCENIC WATERWAY PROGRAM
OCTOBER, 1985



CLACKAMAS RIVER SCENIC WATERWAY

CLACKAMAS COUNTY, OREGON

 SCENIC WATERWAY CORRIDOR
(WIDTH APPROXIMATE)

To Oregon City

CARVER

CARVER BRIDGE

224

CLACKAMAS
FALLS

BARTON COUNTY PARK



To Sandy

211

Eagle

RIVER

Creek

224

211

McIVER STATE PARK

RIVER MILL DAM

ESTACADA

211

224

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Executive Summary

This report recommends a management program for the Clackamas River Scenic Waterway (12 miles - River Mill Dam to Baker Bridge at Carver) designated by the 1975 Oregon Legislature.

The Oregon Scenic Waterway Act (ORS 390.805 - ORS 390.925) requires the Oregon Transportation Commission, through the State Parks and Recreation Division administer the scenic waterway (including adjacent lands within 1/4 mile of each bank) for the protection and enhancement of "esthetic, scenic, fish and wildlife, scientific and recreation features".

Since its designation in 1975, the Clackamas River Scenic Waterway has been managed under the Commission's general rules for scenic waterway management. This report establishes specific management guidelines for the Clackamas based on the special scenic, natural and recreational attributes of the river corridor.

These attributes, as listed in the report, include:

1. The river's close proximity to the Portland metro area.
2. The very high water quality.
3. The natural appearing riverbanks with a wide mixture of streamside vegetation (species and size).
4. The excellent fish and wildlife habitat that allow frequent encounters with osprey, great blue heron, deer and other wildlife. Steelhead are also abundant.
5. The outstanding recreation opportunities for fishing, float and power boating, picnicking, swimming and camping. Five public recreation areas covering over 1000 acres are within the corridor.
6. The outstanding scenic qualities as evidenced by the streambank trees, whitewater riffles, deep pools, islands, and tall sandstone cliffs. The area is rural, pastoral in its appearance.

In order to protect and enhance these values, this report recommends the river be classified a Recreational River Area by the Transportation Commission. This classification recognizes the semi-developed, rural/pastoral nature of the river segment. The rule proposed to carry out the program requires new structures, improvements (including road building), mining operations and timber harvesting activities to be screened from view from the river by topography or vegetation. Facilities necessary for public outdoor recreation may be visible from the river.

Streambank erosion protection projects (riprap) would be permitted under this classification where a need is demonstrated and when non-structural efforts (reconturing, tree planting, etc.) have failed or are not feasible.

This proposed rule classifying the Clackamas River Scenic Waterway must be approved by the Oregon Transportation Commission with the concurrence of the Water Policy Review Board before it goes into effect.

I. WHAT IS A SCENIC WATERWAY?

The Oregon Scenic Waterway Program was established by a vote of the people in 1969. Scenic waterways are administered under the authority of the Oregon Transportation Commission through the State Parks and Recreation Division (ORS 390.805 to ORS 390.925). The scenic waterway program seeks to preserve, protect and enhance scenic, recreational, fish and wildlife and cultural values possessed by each individual scenic waterway. The Commission's rules specifically outline the manner in which the Scenic Waterways Act is to be carried out.

The Act and the Commission's rules generally require proposed changes of land use within $\frac{1}{4}$ mile on each side of the river to be evaluated for their potential to affect the natural scene. Property owners wanting to build roads, houses, develop mines, cut timber or do similar activities must notify the Commission in advance. Within one year of notification, the Commission must decide if the proposal will impair the scenic beauty of the river. The Commission relies on its rules for each designated scenic waterway to make the determination. The Act allows the Commission to pay property owners for their land if impairment of the scenic beauty cannot be prevented by any other means. Other local and state agencies must comply with the Act. (See Appendix for Oregon Scenic Waterways Act and Administrative Rules.)

Filling in the river, removing soil and gravel from the river or changing the riverbank in any way, regardless of the amount of soil or rock involved, requires special approval of the State Land Board and the Director of the Division of State Lands.

The Director of the Oregon Department of Water Resources is required to insure that new water rights issued within the scenic waterway will be used only for human consumption, livestock, fish, wildlife and recreation. Other uses may be permitted, but only after a finding that sufficient flow is available for existing uses, plus the previously described five. Dams, impoundments, reservoirs and placer mining are prohibited within the scenic waterway corridor including tributary streams within the $\frac{1}{4}$ mile boundary.

II. BACKGROUND

This report examines the Clackamas River Scenic Waterway (12 miles, from River Mill Dam to Baker Bridge) added to the state scenic waterway system by the Oregon Legislature in 1975. The report looks at the various natural resource, land use and recreational features found along the scenic waterway. It proposes a program to manage land use within the scenic waterway corridor in conformance with the Act and the rules for scenic waterway management.

The river was first designated as a county "natural river" by a majority of Clackamas County voters in 1974 following a successful county initiative petition drive. Later that year, Circuit Court action overturned the county designation. The proponents for river protection of the Clackamas then turned to the state legislature and sought state designation. In 1975, the Oregon Legislature voted the Clackamas River into State Scenic Waterway designation. Since that time, the Clackamas River Scenic Waterway has been administered by the State Parks and Recreation Division. The Division has applied the Commission's general rules for scenic waterways management to the Clackamas. This management program establishes rules specific to the Clackamas based on its own special attributes.

III. WHAT'S SPECIAL ABOUT THE CLACKAMAS RIVER SCENIC WATERWAY?

Inventory and study of the Clackamas River Scenic Waterway revealed six attributes that are peculiar to this stretch of the Clackamas and set it apart as "special" among the state's rivers. These attributes led the citizens of Clackamas County and the Oregon Legislature to designate the river as a state scenic waterway. Recognizing these attributes or conditions, and protecting them, when appropriate, is the basis for the management program outlined in this report.

1. The Clackamas River is close to Oregon's major urban center - the Portland-Metropolitan area. The river area provides an attractive alternative to city living.

2. Water of the Clackamas River is of very high quality; it is the potable water source for numerous jurisdictions downstream of the scenic waterway.
3. The riverbanks along much of the segment are natural appearing, except where development is readily visible. The streamside vegetation is dense with a mixture of deciduous and coniferous trees. This mixture of vegetation creates a pleasant, scenic river environment.
4. The Clackamas River area, because of its abundant vegetation, variety of topography, scattered development and high water quality is an excellent habitat for fish and wildlife. Sightings of small animals and deer, great blue heron, ducks, osprey, and other wildlife are not unusual. Fishlife in the river is particularly abundant, helped along by hatcheries on Eagle Creek and at McIver State Park. Steelhead populations are returning to levels not seen in several decades.
5. The scenic waterway corridor from River Mill Dam to Carver includes two state park areas and two county parks. Recreation opportunities on this stretch of river include boating, overnight camping, picnicking, fishing, and swimming. A recreational activity showing great popularity is river floating. Jet-pump driven power boats are used during the fishing seasons. During the warm summer months, recreationists in rubber rafts, canoes, and kayaks are abundant along the river from McIver Park and Barton Park to Carver.
6. The river is a definite scenic attraction. Whitewater riffles, large streambank trees, deep pools, islands and long shallow river stretches combine to make the river exciting and interesting to the river users. Even though the river is not isolated (because of its close proximity to Portland), it is pleasing to view because of its rural, pastoral appearance.

IV. RECOMMENDED MANAGEMENT PROGRAM

The Act requires that the Commission, through the State Parks and Recreation Division administer the area in order to protect and enhance the values which caused the river to be included in the scenic waterway system.

The Division's management is based on the "special attributes of each area," and gives primary emphasis to protecting the esthetic, scenic, fish and wildlife, scientific and recreational features. The aim of the program is to maintain the scenic "status quo" condition of the area without "turning back the clock" on existing developed land uses.

In order to do so, the river would be classified into one or more of six possible classifications, according to the level of existing developed land uses. Once the classifications are set, specific guidelines for new development are established as rules. The six possible classifications with general descriptions and their general management directions follow:

1. Natural River Areas are generally inaccessible except by trail or river with primitive or minimally developed shorelands. Preservation and enhancement of the primitive character of these areas is the goal of this and the next three classifications.
2. Accessible Natural River Areas are relatively primitive, undeveloped areas with access by railroad or lightly traveled road.
3. Scenic River Areas may be accessible by roads but are largely undeveloped and primitive except for agriculture and grazing.
4. Natural Scenic View Areas are designated where one riverbank is inaccessible, undeveloped or primitive in character while the opposite bank is accessible and developed.

5. Recreational River Areas are readily accessible by road or railroad with some agricultural, commercial and/or residential development along the banks. Management is aimed at allowing development consistent with what is present while protecting the view from the river and other natural features.
6. River Community Areas are highly developed areas of commercial or residential uses in natural settings. Allowing development with an eye toward maintaining the natural setting is the aim of management.

The rules established for each classified river segment generally allow continuation of the use of existing structures and improvements. In fact, though some improvements require notification/review/approval by the Commission, many others do not. For example, on some other scenic waterways, notification and approval is not needed for construction of new fences; maintenance of farm buildings; fences or outbuildings; laying of irrigation lines; crop rotation; removal of danger trees; construction of grain storage facilities under certain conditions; maintenance of existing residences and outbuildings; minor residential remodeling; construction of garages adjacent to existing homes; certain changes in homesite landscaping; maintenance of roads and bridges; and firewood cutting for personal use.

Mining, roadbuilding, construction of most new structures, placement of mobile homes, land clearing and timber harvest are examples of activities requiring approval. River classification and the rules or guidelines determine how the natural and scenic beauty of the river will be maintained.

It is recommended that the scenic waterway segment of the Clackamas River be classified as a Recreational River Area by the Oregon Transportation Commission. This river classification will allow it to be managed for the continuation of the existing developed compatible uses, to protect the important riverbank vegetation along the river, and to recognize importance of the river and its adjacent public lands for public outdoor recreation purposes. Classifying this stretch as a Recreational River recognizes its close proximity to the Portland-Metropolitan area and the

existing land use patterns of suburban/rural development that have already occurred. The classification will permit restoration of eroding riverbanks, when done carefully, where there is demonstrated need. Nonstructural means to stabilize riverbanks (e.g., plantings, recontouring, etc.) will be favored over rip-rapping or other structural methods.

The proposed management program, stated below, places strong emphasis on protecting and preserving the riverbank vegetation. The program is consistent with the Clackamas County Comprehensive Plan and zoning ordinances.

Recreational River Area

- a. *That segment of the Scenic Waterway extending from River Mill Dam downstream approximately 12 miles to Bakers Bridge at Carver is classified as a Recreational River Area.*

- b. *The Recreational River Area will be administered consistent with the purposes of OAR 736-40-040 (1)(c)(B). Within this area, new structures and improvements, mining operations and timber harvesting activities shall be permitted only when substantially screened from view from the river by topography or vegetation. If no such topographic or vegetative screening exists on a site, the structure or improvement may be permitted if vegetation is established which will provide substantial screening to the proposal in a reasonable time (for example, 2-3 years). The condition of "substantial vegetative screening" shall consist of an ample density and mixture of native evergreen and deciduous vegetation to totally obscure or allow only a highly filtered view of, the proposed structures or improvements. Developments necessary for public outdoor recreation, as provided by public agencies, and resource protection may be visible from the river but must blend into the natural scene as much as possible.*

All the Commission's rules for scenic waterway management, OAR 736-40-025 through OAR 736-40-035, shall apply to the Clackamas River Scenic Waterway except where this section is more specific.

These rules, if adopted, will have the effect of clarifying policy direction for the review of public and private projects proposed within the Clackamas River Scenic Waterway. Not only will the Oregon Transportation Commission, through the State Parks and Recreation Division, rely on them, but also the State Land Board, Division of State Lands, Water Resources Department and to some extent all other local, state and federal agencies.

Other management program objectives include:

1. The State Parks Division and the Oregon Department of Fish and Wildlife (ODFW) shall encourage private property owners to investigate and apply for riparian property tax deferral program. The program is administered by the ODFW and offers property tax benefits to certain qualified riverfront property owners.
2. The possibility of making river islands available for public use should be investigated. River islands are important to fish and wildlife habitat and for public recreation use. Using river islands for public use can relieve some of the trespassing problems along the riverbanks.
3. The ODFW, the Division and the Clackamas County shall cooperate with conservation, fishing and boating organizations (e.g., Northwest Steelheaders, Northwest Rafters Association, Oregon Kayak and Canoe Club, Izaak Walton League) to:
 - a. Provide information and education to river users that will reduce conflicts among users especially recreationists and landowners;

- b. Accept volunteer help in taking care of the Clackamas River Scenic Waterway (e.g., litter clean-up, facility maintenance and improvement);
 - c. Identify additional lands needed for fishing access, scenic protection, or public recreation use.
 4. The Division should accept the donation of scenic easements and property from riverfront property owners.
 5. The Division shall seek the cooperation of all local, state and federal agencies in meeting the objectives of this program and complying with the Act and Commission's rules.
 6. Any modification to existing policy or program established by the Oregon Water Resources Commission should take into account instream recreation use needs as identified in ORS 390.835(1). Desirable flow levels for various recreational uses should be identified. When recreational flow levels have been identified, discussions should be initiated to resolve conflicts resulting from flow fluctuations.

V. Background Report

- A. The mainstem Clackamas River originates south of the Sandy Basin. The Collawash Fork, a major headwater tributary, originates in southeast Clackamas and northeast Marion Counties. The Oak Grove fork originates east of Timothy Lake joining the Clackamas near Ripplebrook Ranger Station. The river flows west to its confluence with the Willamette River at the Oregon City/Gladstone city limits.

The drainage basin contains 936 square miles, consisting largely of forest and agricultural uses. Average annual flow is about 3,700 cubic feet per second.

There are two minimum flow points for the Clackamas River. The minimum flow for the Upper Clackamas River (established on May 25, 1966) is 150 cfs from July 1 through September 15 and 240 cfs from

September 16 through June 30 at the SE¼, Section 26, Township 6 South, Range 7 East. These minimum flows are based on minimum needs to maintain aquatic life. No flow has been established for minimum flows for other instream uses such as recreation.

The Clackamas can be characterized as a relatively young river, i.e., making occasional channel changes, downcutting and following a steep gradient. Average gradient is 16.4 feet per mile from the U.S. Forest Service boundary to the Willamette River.

Below the U.S. Forest Service boundary, upstream from Estacada, the banks are fairly well defined; river canyons are not uncommon.

Three dams are present, North Fork, Faraday and River Mill. A fourth dam is located on the Oak Grove Fork. There are no dams within the scenic waterway segment. All four dams are owned by Portland General Electric Company and utilized for power generation. Since the dams are used for power generation, water fluctuations are common on the river. Warning notices are posted at various points along the river.

B. Land Ownership and Use

1. Public Ownership

Within the 12-mile scenic waterway section, there are four public park areas:

Milo McIver State Park	- 847 acres
Bonnie Lure State Park	- 94 acres
Barton County Park	- 100 acres
Carver Boat Ramp	- 5 acres

A public river access site does exist at Feldenheimer Ferry. Legal parking is limited to the existing county roadway. It is undeveloped.

Major boating facilities (i.e., paved ramps) are located at Barton, McIver (2), and Carver. Bonnie Lure provides walk-in riverbank access only.

2. Private Ownership

Much of the riverbank is in private ownership. The County's Comprehensive plan identifies forest and agriculture as the two major land uses. Private homes dot the landscape while some are concentrated in the three major subdivisions at Twin Island, Paradise Park, and Laura Dell Acres.

The land use breakdown within the scenic waterway corridor is as follows:

	<u>Estimated Acreage</u>	<u>Percent</u>
Residential	455.50	(8.5%)
Commercial	0.90	(0+%)
Industrial	125.60	(2.3%)
Developed	585.0	(10.9%)
Open Space Agr/Forest	4,202.2	(78.3%)
Total	5,369.2	100.0%

Three commercial and one public gravel mining operations are located within the scenic waterway boundary, but are not readily visible from the river. All are partially or totally screened from view from the river (by topography and/or vegetation).

3. Roads, Highways, and Powerline Crossings

A major Bonneville Power Administration electrical distribution line crosses the river at about River Mile 16. The multi-line structure dominates the river scene for several hundred yards. Two low-voltage powerlines cross the river just above Feldenheimer's Ferry Crossing.

The left bank of the river is almost totally free of a direct view of a major road. Highway 224 runs along the right bank for several hundred yards just above Carver Bridge, and, although cars are visible, the impact is minimal on the view from the river. There are minor roads that provide access to riverside developments but few are readily visible from the river.

4. County Comprehensive Planning and Zoning Designations

The Rivers Area Design Plan, a component of the Clackamas County Comprehensive Plan acknowledges that the river corridor has many natural values that should be maintained. The Comprehensive Plan acknowledges and supports the role of the State Scenic Waterways Act as it applies to the Clackamas River.

Existing land uses include agriculture, forestry and rural residential. These are allowed and implemented by the EFU (Exclusive Farm Use), TT (Transitional Timber), and GTD (General Timber District) zones. While these zones recognize, and to an extent, retain aesthetic values, their primary purpose is to further the predominant use, without regard for the appearance of new development.

In order to implement the Rivers Area Design Plan, the PRC (Principal River Conservation) overlay zone was created. This overlay establishes a one-quarter mile corridor (measured from mean low water) and certain use criteria for development within it. The main purpose is to maintain the integrity of the river, taking into consideration its natural, scenic, historic, economic, cultural and recreational elements. This is accomplished primarily through the establishment of a set-back line of a minimum of 100 feet from mean low water. This set-back may be increased to 150 feet to lessen the impact of development, if required.

Other standards for development govern: height of residential structures which can be seen from the river (35 feet); the prohibition of subsurface sewage disposal systems within 100 feet of mean low water; screening requirements for commercial and industrial parking; signs and storage areas; the allowance of minor residential partitioning; and review criteria for water impoundments, diversions and hydroelectric facilities.

This zone is applied to the Clackamas, Sandy/Salmon, Molalla/Pudding and Tualatin river corridors with the exception of those areas designated as State Scenic Waterways. In the designated State Scenic Waterway portion of the Clackamas, the provisions of the State Scenic Waterways Act prevail when found to be either in conflict with or more restrictive than the provisions of the PRC zone.

Further protection of the natural attributes of the Clackamas is provided by the FPMD (Flood Plain Management District) overlay zone. This overlay establishes various flood plain zones and criteria for development within it.

C. Natural, Cultural and Scenic Resources.

1. Water quality

A County study on water quality classifies the Clackamas as "very good." Sixteen jurisdictions use its water for public water supply. No point source discharges are evident within the scenic waterway. However, there are discharge points above the scenic waterway segment. These discharges apparently have little or no impact on the water quality within the scenic waterway. No chemical analysis of the water within the scenic waterway is included in this report. Turbidity apparently is only a factor during high winter flows.

Maintaining good water quality is vitally important to steelhead and other fish in the Clackamas River.

2. River Hydrology

The banks located on the outside curve of the river bend are subject to the constant erosive power of the river. Some banks experience continual erosion. As they erode, they deposit large chunks of sandstone or soil into the river itself. In other places, the gravel and soil riverbank is melted away by the high

flows, leaving an undercut or vertical bank. Residents have moved to protect their residential frontage with rock riprap.

Severe erosion is evident along Baker's Ferry Road and in other areas. No non-structural erosion control appears to have been attempted. Vegetative plantings and log placement may lessen or slow the erosion process.

3. Flooding

Flooding occurs seasonally usually during winter months. The highest recorded flow was December 22 in 1964. Historically, the river runs from 15,000 cubic feet per second (cfs) to 600 cfs, with an average annual flow of 3,700.

4. Geological Features

The most significant geologic features along the scenic waterway are the sandstone cliffs and outcroppings. Most evident are deposits at McIver State Park boat ramp and upstream of Barton County Park. There large blocks of sandstone have been eroded from the bank and are submerged in the river.

5. Vegetation

The County comprehensive plan classifies approximately 70 percent of the river corridor as forest land. The remainder is devoted to agricultural, open space and residential development. Coniferous species such as Douglas fir, grand fir, western red cedar and white fir are abundant; maple, cottonwood, ash and alder are also widespread and sometimes mixed with the conifers.

The riverbank has a mixed deciduous/conifer forest cover of moderate height (50-80 feet tall on the average) with some trees exceeding 100' tall. The undergrowth is dense brush including scotch broom, blackberry and other related species (including Oregon grape and vine maple).

The vegetation is important to stabilize the riverbank; provide food, cover and habitat for wildlife; provide shade and food for fish; provide a scenic backdrop for recreationists; and to buffer upland property owners from river users.

6. Fish and Wildlife

There is abundant fish and wildlife along the scenic waterway corridor. Sightings of deer, osprey, great blue heron, ducks and other birds and animals are common.

The anadromous fishery--salmon and steelhead--has been enhanced by hatcheries at McIver State Park and Eagle Creek.

At the present, the variety and abundance of fish and wildlife can be attributed in large part to the water quality, vegetative cover and open space.

7. History

Feldenheimer's Ferry Crossing is the only remaining significant historical site on the river. During the early pioneer days Feldenheimer's Ferry was a necessary link in the famous Barlow Trail. All that remains of the trail today are a few ruts in the hillside and a county road.

8. Scenic Features

The river is a definite scenic attraction. Whitewater riffles, large stream bank trees, deep pools, islands and long shallow river stretches combine to make the river exciting and interesting to the river users. Even though the river is not isolated, it is pleasing to view because of its rural, pastoral appearance.

Grazing cattle and large areas of undisturbed vegetation border the river in many places. Some high bluffs with steep banks are located along the river and provide variety to the view because of their height, color and texture.

A few developed areas (mostly residential) adjoin the riverbank, most are unobtrusive. Many are screened from view from the river by vegetation and/or topography. The most conspicuous developments are perched atop unvegetated rock revetments. These areas lack the irregularity of the natural riverbank and are not as pleasing to view as the natural riverbank.

D. Existing Recreational Use

1. Boating

Boaters use the river for fishing or to enjoy a scenic whitewater float trip. Power boats are used for both fishing and sightseeing trips, although most power boat use occurs during the fishing season.

Heavy use occurs during the hot summer days, especially on weekends, when various sizes and shapes of floating devices are launched into the river. Drownings have occurred on the river.

It is during this use season, when the boater/landowner conflicts are likely to occur. Floaters stop on private land to ask the time of day, or the distance to Carver, all of which cause conflict. Particularly aggravating to private property owners are the large organized "raft race" type activities sponsored by various organizations. Floater/landowner conflicts during these activities are more frequent than on other occasions of "regular" use.

Some commercial boat rental/shuttle services and guiding services operate on the river.

The scenic waterway portion of the Clackamas is apparently a day use experience. Little, if any, overnight camping by boat occurs on this river segment. There are no estimates available on total boating use.

2. Fishing

Heavy use occurs during the steelhead-salmon runs usually December to May, with the heaviest use occurring on weekends. During these times, boater conflicts sometimes occur. All of the ramps are small and only one boat at a time can be launched or retrieved.

Feldenheimer's has no designated parking area or developed ramp; cars and trailers park along the narrow county roadway. A second boat ramp at the lower end of McIver State Park has helped to relieve some of these problems.

Approximately 41,800 angler days per year occur on this segment of the Clackamas River. Bank anglers concentrate use around the existing public parks and roadways. However, some trespass does occur in the area of the west bank downstream of Barton Bridge.

3. Camping, Picnicking, Swimming and Others

The scenic waterway portion of the Clackamas is close to the Portland urban area. McIver receives heavy day use during the summer months. Camping demand is not high. Barton County Park and McIver State Park provide camping facilities.

Bonnie Lure State Park has no developed facilities and provides only walk-in river access. Barton provides camping facilities and is popular as a day use area. Carver is strictly a boating access site, although the parking lot and restrooms serve day users seeking fishing, swimming and sunbathing opportunities. Annual use at McIver State Park is about 144,000 user days, and 6,000 campernights. Annual use at Barton County Park is about 200,000 user days and 8,000 campernights.

4. Recreation Use Projections

Boating use, especially non-angler use, seems to be growing but no data is available to determine actual annual use or annual growth. Existing public access and park facilities appear to be adequate to meet existing demands. Future needs might include: additional river access for bank anglers and boat launching (possibly at Feldenheimer's or near Barton Bridge); and additional day use facilities at Carver boat ramp.

Increased river use from both boat and bank recreationists, may result in increased conflicts with private land owners and other users. River and land patrols for litter, clean-up, river user education and rule enforcement may be necessary.

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Appendix J. Wetland Staff Qualifications

This section is provided as a required element of the Local Wetlands Inventory and is therefore limited to field staff who worked specifically on the wetlands inventory.

Tim Brooks: **Principal Environmental Planner**
Project Role: Project Manager
Project Responsibilities: Wetland inventory, assessment and mapping; agency coordination; public involvement

Tim has more than 18 years of experience managing Goal 5 natural resource inventory and planning projects for local communities in Oregon. Tim has recently completed wetland inventories or inventory updates for the cities of Prineville, Newberg, Woodburn, Albany, and West Linn. In addition to project management, Tim's responsibilities have included extensive field investigations, functional value assessments, significance determinations, and impact analyses. Tim has conducted wetland delineations, functional value assessments, and wildlife habitat assessments for both public and private clients throughout Oregon and Washington. Tim worked for six years under the guidance of Andy Castelle and other professional wetland scientists. He completed the Interagency Wetland Delineation Course in 1993, and specialized courses in wetland ecology and vegetation since then.

Anita Cate Smyth, PWS: **Wetland Scientist**
Project Role: Senior Wetland Scientist
Project Responsibilities: Wetland determinations and assessments,

Anita is a Professional Wetland Scientist with twelve years of experience in natural resource inventories, with emphasis on wetland delineation and permitting. She holds Professional Master's Degree in Environmental Sciences from Oregon State University. She spent two years at Clackamas County's Department of Transportation and Development, Engineering Section as a program manager and a resource for wetland and other environmental expertise. During her nine years at W&H Pacific, she expanded that technical and project management expertise through execution of numerous wetland mitigation site design projects, natural resource inventories, and riparian and wetland functional assessments as stand-alone projects and as part of Joint Permit Applications for specific actions. Anita now heads Westbrook Science & Design, LLC, a woman-owned business focused on using her experience and talent on behalf of public and private clients in Oregon and Idaho.

Esther Lev: **Biologist**
Project Role: Senior Wildlife and Wetlands Scientist
Project Responsibilities: Wildlife habitat and wetland assessments

Esther is a wildlife and restoration ecologist with over 30 years experience in wildlife ecology, wetlands assessment, natural resource planning, public outreach and education. Her experience includes the preparation of designs for site and watershed assessments,

restoration design, planting plans, project permitting, project construction and implementation, collaborative community and volunteer education and supervision. Esther is currently Executive Director of The Wetlands Conservancy (TWC). Her studies in the Damascus area have included a landscape analysis and evaluation of wildlife habitats within the Rock and Richardson Creek Watersheds and development of a methodology to assess biological health of tributaries of the Clackamas River, including upland habitats.

Mary Bushman: **Environmental Scientist**
Project Role: Botanist
Project Responsibilities: Wetlands documentation and assessment, data compilation

Mary Bushman holds a Master's degree in Botany and Plant Ecology and has experience in habitat assessment using field data collection and analysis, GIS analysis, public outreach, scientific reporting, natural resource management planning, and restoration planning. For Metro, Mary was an intern in the Fish and Wildlife Protection Program. For the Department of State Lands, she was Program Director for the Coast Range Association. At the Institute for Applied Ecology, Mary worked on projects designed to attain knowledge of rare plants in the Willamette Valley and Eastern Oregon. At Sitka Center for Arts and Ecology, she developed plans for policy change and environmental restoration projects on the Lower Salmon river. At Winterbrook, Mary has worked on Natural Features Inventories for the Cities of Prineville and Damascus.

Ryan Ruggiero **Natural Resources & Landscape Planner**
Project Role: Project Wetland Scientist
Project Responsibilities: Wetlands documentation

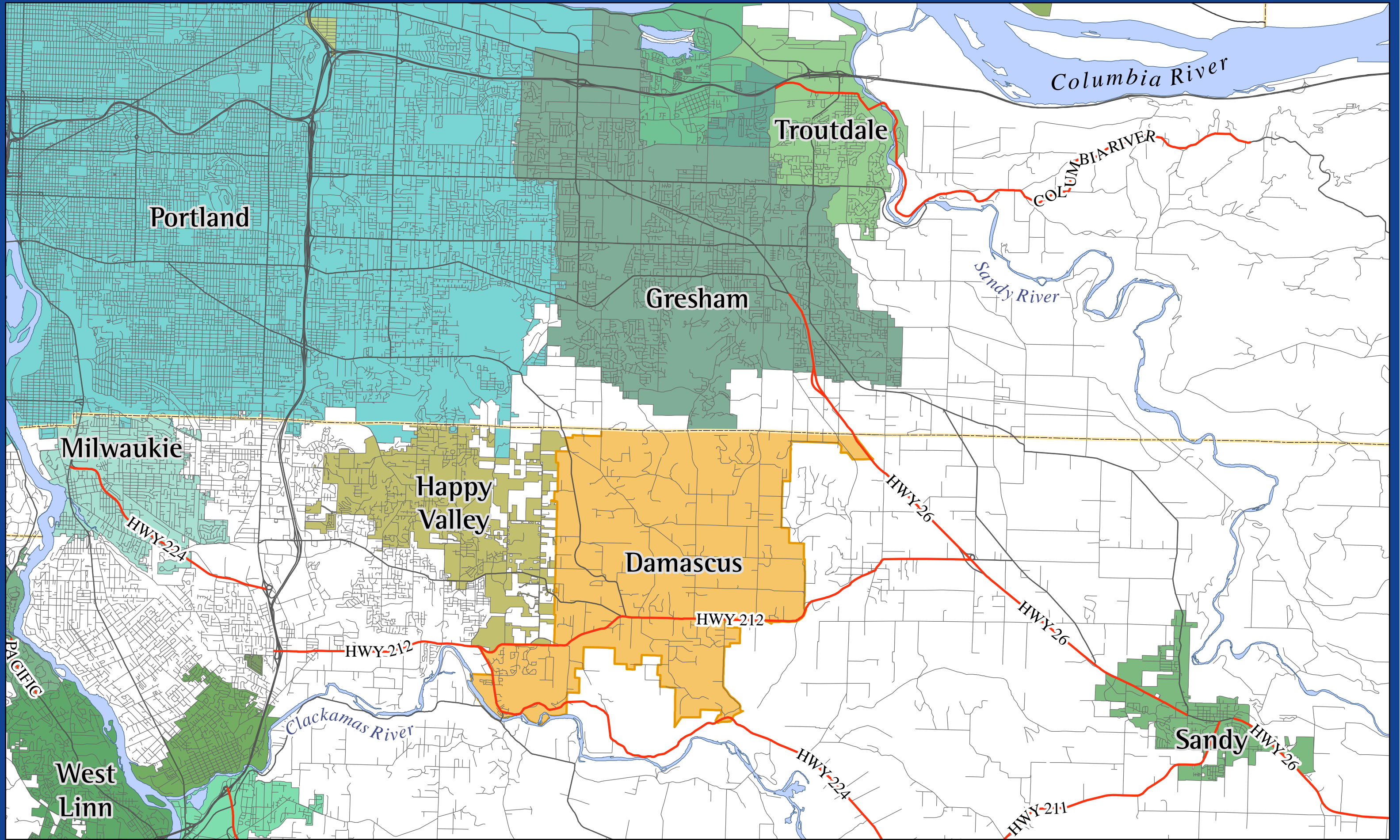
Ryan has over three years of experience conducting wetland determinations and delineations, writing wetland delineation reports, and working on other wetlands projects. He played a key role in both the Clark County Regional Wetland Inventory and the Happy Valley Local Wetlands Inventory, engaging in spatial data collection and development, field verification, and documentation. In addition, he has been a major contributor on several recent wetland mitigation projects including the Mirror Lake and East Fork Minnow Creek Wetland Mitigation Banks (ODOT) and the Coho Creek Relocation Project at the Hoonah Airport in Hoonah, Alaska (ADOT). He has also conducted wetland field work and historical research in support of expert testimony in a recent court case. Mr. Ruggiero has an extensive background in ecology, botany, and Geographic Information Systems.

Analisa Gunnell **Chief Cartographer and GIS Analyst**
Project Role: Senior GIS Analyst
Project Responsibilities:

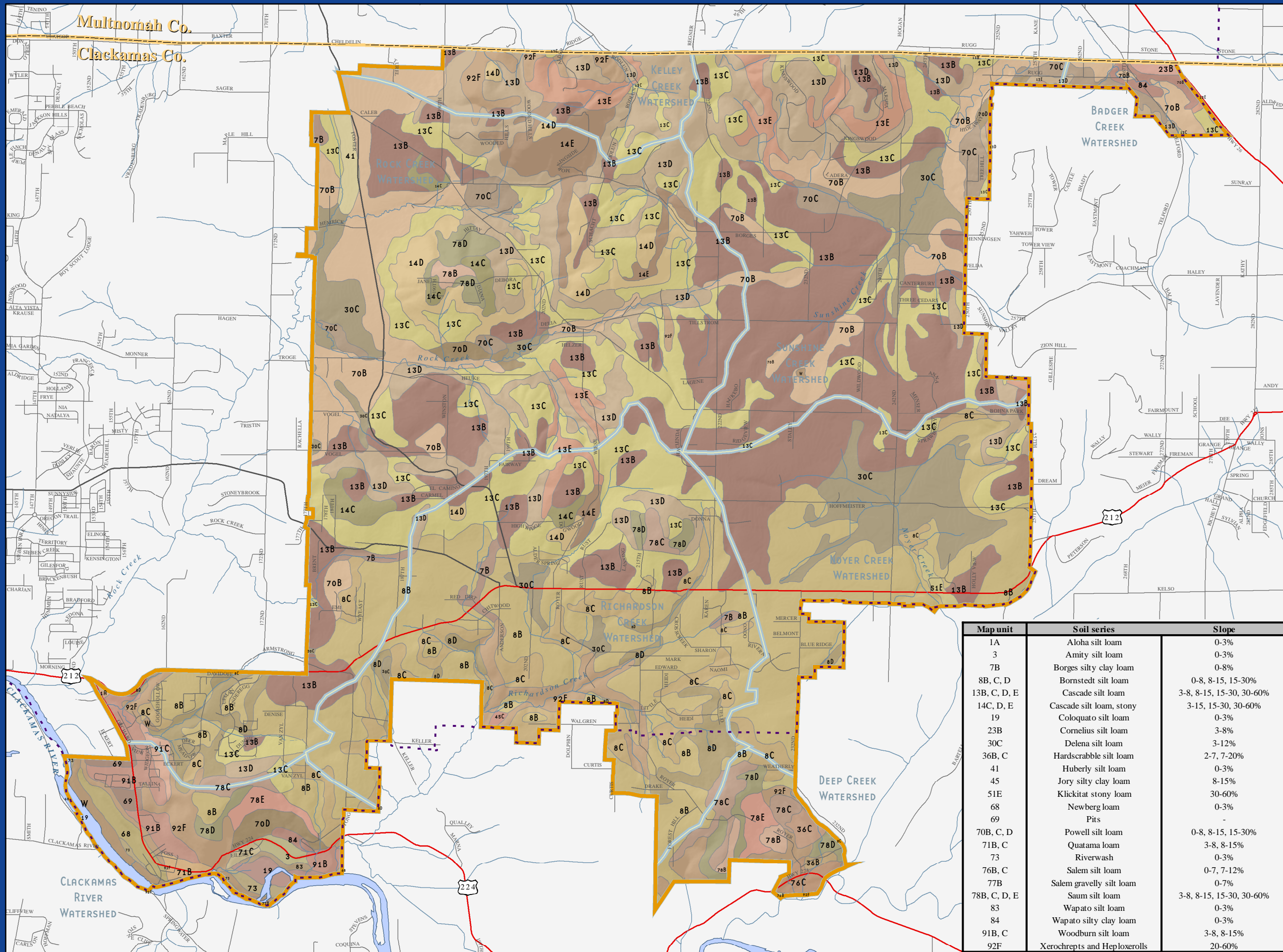
Analisa has 5 years of professional GIS and Cartographic experience. Her recent experience includes data creation, compilation and mapping for the Corvallis Natural

Features Inventory and West Linn Goal 5 Inventory. Both studies were led by Winterbrook and included Local Wetland Inventories. She worked extensively with the Oregon Department of State Lands to ensure that all wetland data created for both inventories met the DSL adopted guidelines and rules for conducting LWIs within urban growth boundaries. Analisa also conducted all GIS analysis, data compilation, and map composition for the Sandy Basin Habitat Conservation Plan. Data compilation and assistance in the development of an iterative tool for selecting the key watersheds to anchor the regional salmon recovery efforts in Western Oregon and Washington. Data creation, compilation, management and creation of maps focusing on ownership, tree density and size, as well as data discrepancy between agencies for specified salmon anchor habitats within Oregon and Washington. Before coming to Ecotrust, Analisa was contracted by the Bureau of Land Management to help develop a complete data set for all hydrology resources found on BLM land.

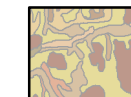
D A M A S C U S V I C I N I T Y - F I G U R E 1




SOIL INVENTORY - FIGURE 2





Damascus Natural Features Inventory


 Soil data - SSURGO


General Features

 Damascus City - Metro, 2007

 Urban Growth Boundary - Metro, 2007

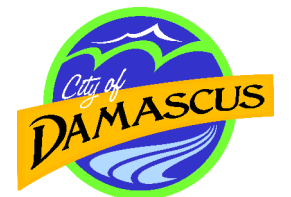
 County Boundary - Metro, 2007

 Watershed Boundary - Winterbrook Planning, 2007

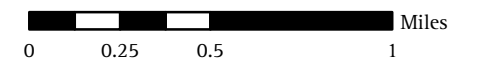
 Streams - Winterbrook Planning, 2007

Note:

This is a preliminary map, thus data shown is subject to change without notice. Data was compiled from a variety of sources. Map created by Ecotrust June, 2007

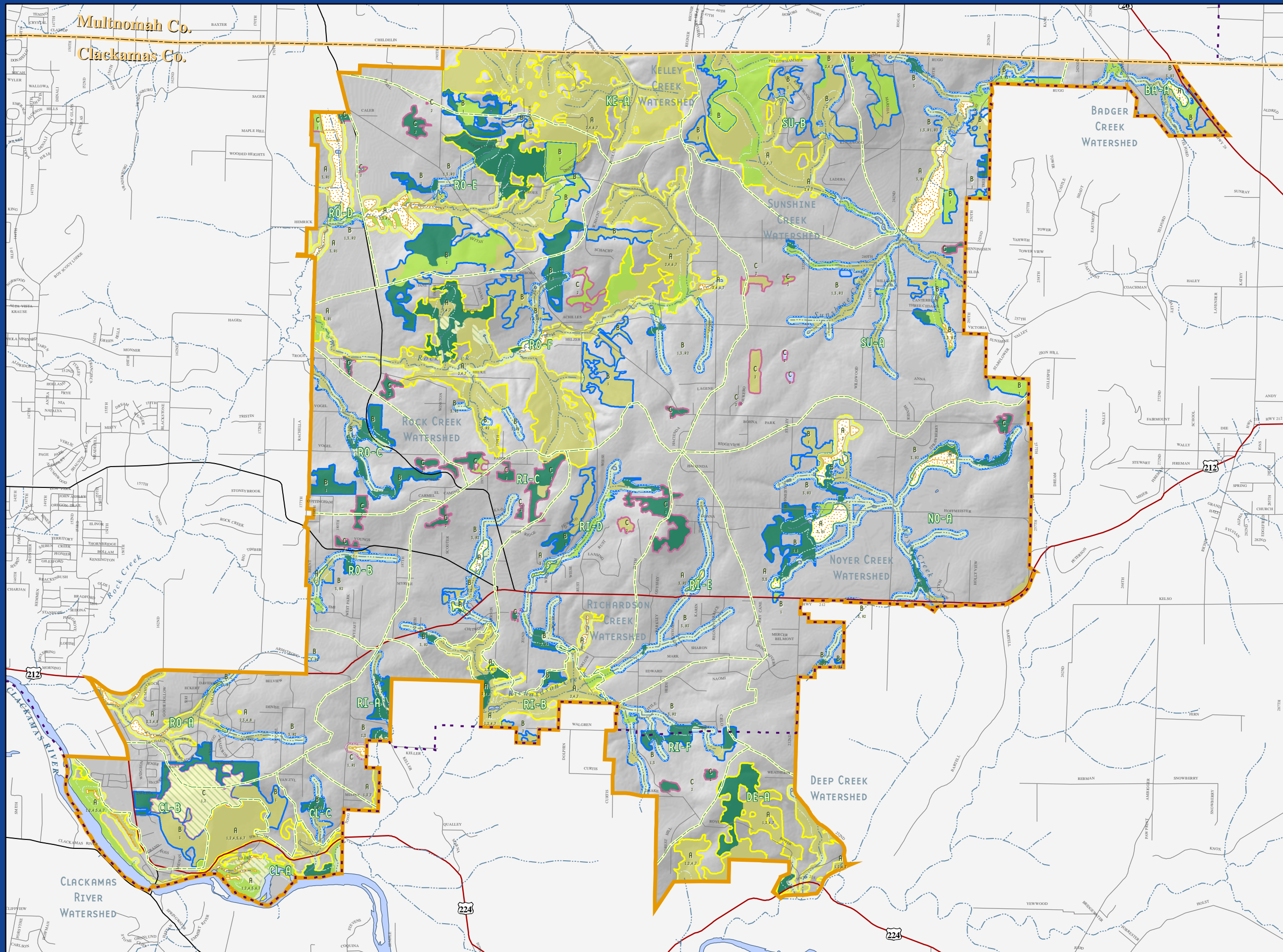


Projection:
State Plane Oregon North FIPS 3601
Datum NAD83



Map unit	Soil series	Slope
1A	Aloha silt loam	0-3%
3	Amity silt loam	0-3%
7B	Borges silty clay loam	0-8%
8B, C, D	Bornstedt silt loam	0-8, 8-15, 15-30%
13B, C, D, E	Cascade silt loam	3-8, 8-15, 15-30, 30-60%
14C, D, E	Cascade silt loam, stony	3-15, 15-30, 30-60%
19	Coloquato silt loam	0-3%
23B	Cornelius silt loam	3-8%
30C	Delena silt loam	3-12%
36B, C	Hardscrabble silt loam	2-7, 7-20%
41	Huberly silt loam	0-3%
45	Jory silty clay loam	8-15%
51E	Klickitat stony loam	30-60%
68	Newberg loam	0-3%
69	Pits	-
70B, C, D	Powell silt loam	0-8, 8-15, 15-30%
71B, C	Quatama loam	3-8, 8-15%
73	Riverwash	0-3%
76B, C	Salem silt loam	0-7, 7-12%
77B	Salem gravelly silt loam	0-7%
78B, C, D, E	Saum silt loam	3-8, 8-15, 15-30, 30-60%
83	Wapato silt loam	0-3%
84	Wapato silty clay loam	0-3%
91B, C	Woodburn silt loam	3-8, 8-15%
92F	Xerochrepts and Haploxerolls	20-60%

WILDLIFE HABITAT AND RIPARIAN CORRIDORS - FIGURE 4



Damascus Natural Features Inventory

Wildlife Habitat- Winterbrook Planning

- Evergreen
- Deciduous
- Mixed
- Shrub/Grassland Habitat
- Shrub/Grassland/Restoration Area
- Wetland Habitat
- Riparian Corridors

Wildlife Classes

- Class A
- Class B
- Class C

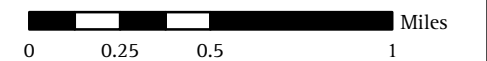
General Features

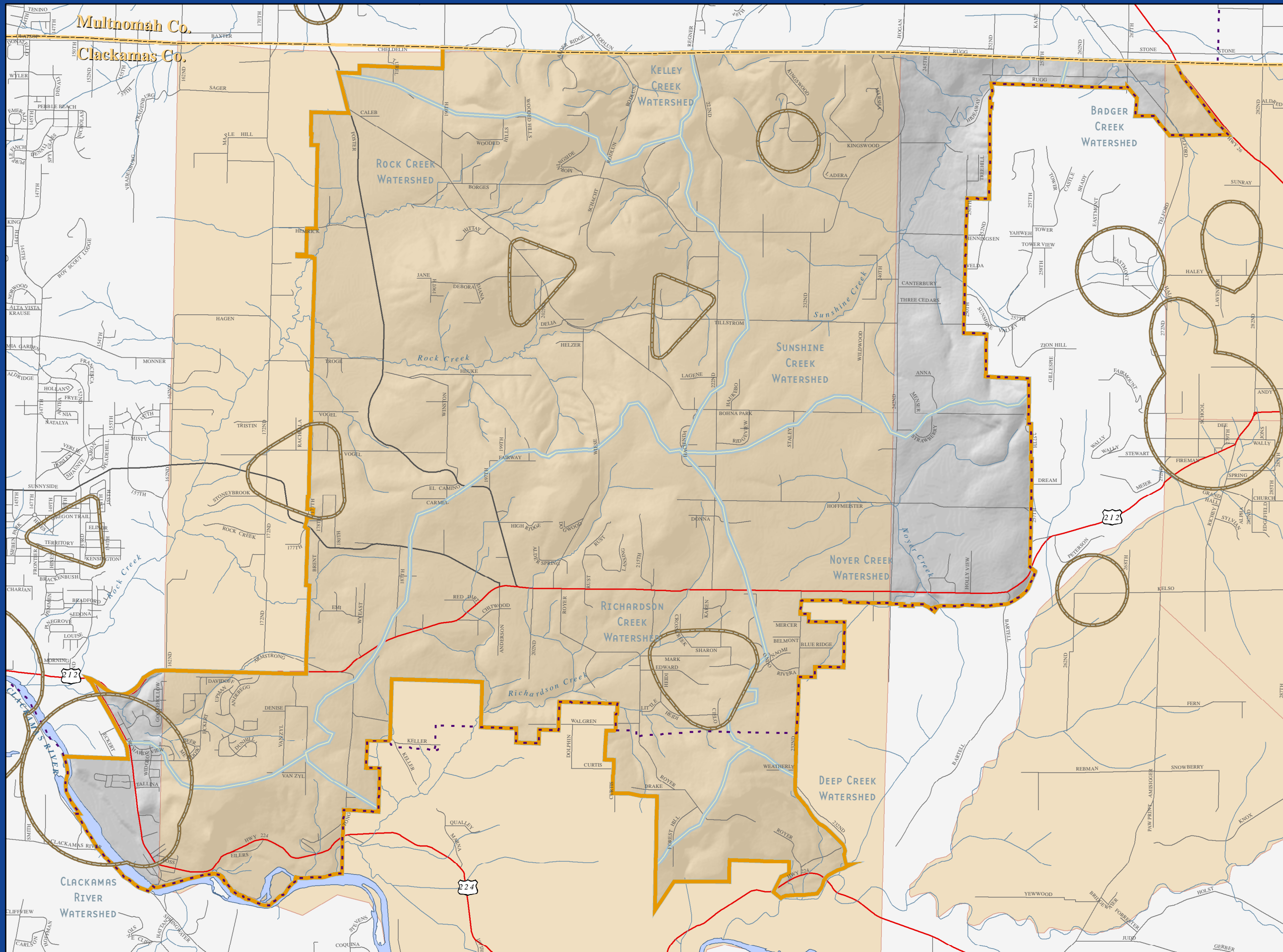
- Damascus City
- Urban Growth Boundary
- County Boundary
- Resource Site
- Streams - Winterbrook Planning

Note:
Map shows significant Riparian Corridors and Wildlife Habitats, based on significance evaluation factors recommended by the Damascus Natural Features TST. Impact Areas are defined as the entire watershed located outside the resource areas for each site, as recommended by the Damascus Natural Features TST. This is a preliminary map, thus data shown is subject to change without notice. Data was compiled from a variety of sources. Map Created by Ecotrust June, 2007.





Projection:
State Plane Oregon North FIPS 3601
Datum NAD83










Damascus Natural Features Inventory

Groundwater Features

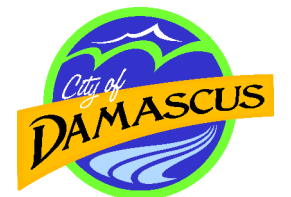
-  Groundwater Drinking Source Areas-DEQ
-  Limited Groundwater Area-OWRD

General Features

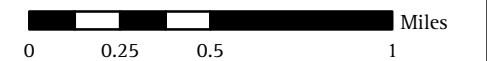
-  Damascus City - Metro, 2007
-  Urban Growth Boundary - Metro, 2007
-  County Boundary - Metro, 2007
-  Watershed Boundary- Winterbrook Planning, 2007
-  Streams - Winterbrook Planning, 2007

Note:

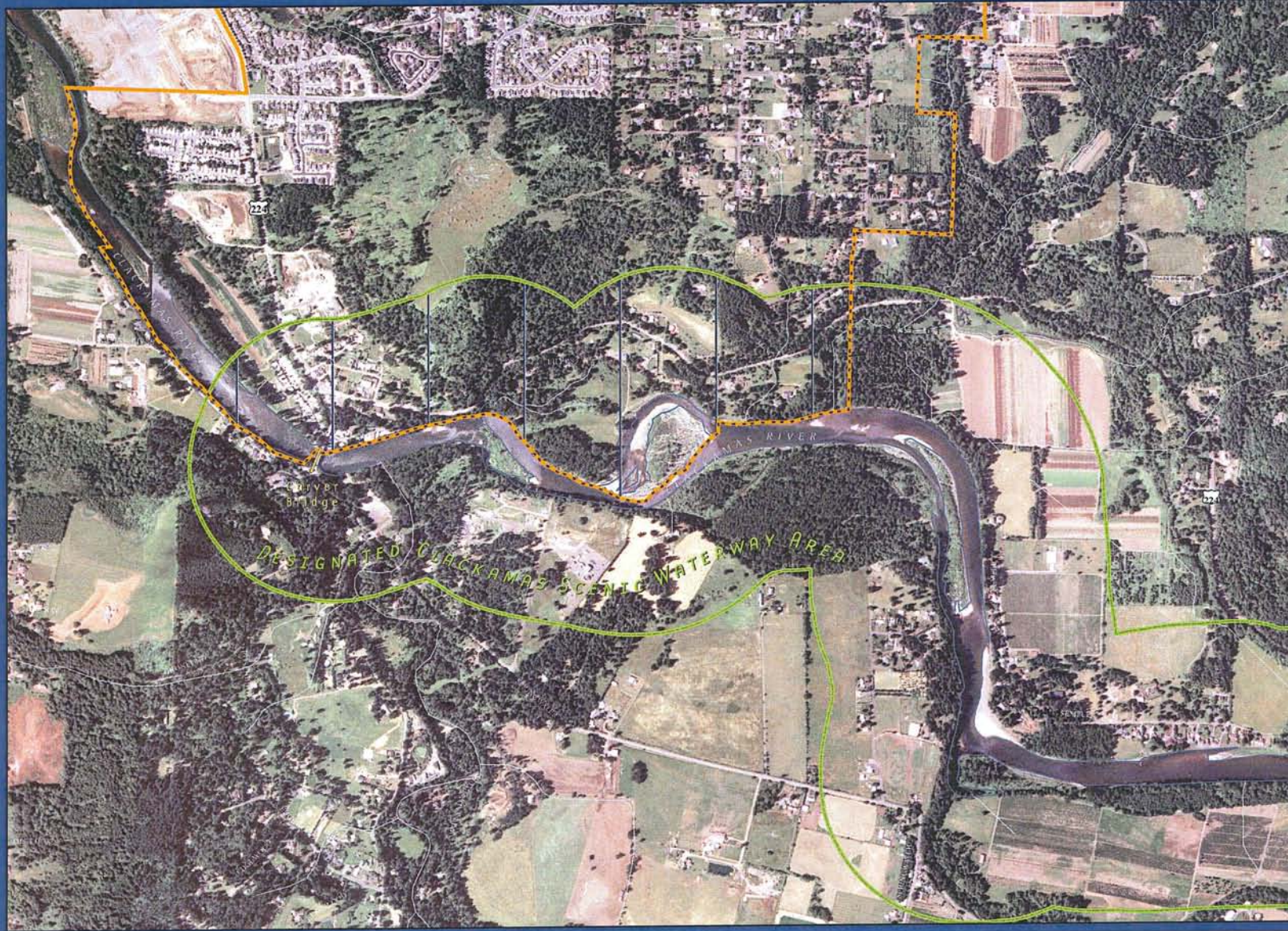
This is a preliminary map, thus data shown is subject to change without notice. Data was compiled from a variety of sources. Map created by Ecotrust June, 2007



Projection:
State Plane Oregon North FIPS 3601
Datum NAD83





OREGON SCENIC WATERWAY CLACKAMAS RIVER TO CARVER BRIDGE - FIGURE 6



Damascus Natural Features Inventory

-  Scenic Waterway-
Clackamas River to
Carver Bridge
-  Scenic Waterway within
Damascus City Limits
-  Clackamas Riverbank
-  Revised Streams -
Winterbrook Planning

General Features

-  Damascus City
-  Urban Growth Boundary

Note:
This is a preliminary map, thus data shown is subject to change without notice. Data was compiled from a variety of sources. Map Created by Ecotrust May, 2007.



Projection:
State Plane Oregon North FIPS 3601
Datum NAD83

