Appendix F

Critical Areas Assessment

ATSI
Aqua-Terr Systems, Inc.

16 April 2005

Mr. Tim Bates, Mayor
Town of Hamilton
P.O. Box 528
Hamilton, WA 98255

Re: Wetland/Fish and Wildlife Reconnaissance.

Dear Mayor Bates.
As requested, Aqua-Terr Systems, Inc. (ATSI) reviewed the approximate 203-acre Town of Hamilton relocation site prospect to determine the presence of wetlands, streams, and other biological critical areas. The site is within a portion of Sections 11 and 12, Township 35 North, Range 6 East, W.M. (Figures 1 and 2).

The purpose of our review is to provide an assessment of the presence, location, and extent of wetlands, streams, and other biological critical areas and their regulated buffers under the jurisdiction of Skagit County, the Washington State Department of Ecology (DOE), and the U.S. Army Corps of Engineers (COE). The site was initially reviewed on the second week of March 2005 and reviewed again on 29 March 2005 to collect data.

Three jurisdictional wetlands; one palustrine emergent seasonally flooded (PEMC), two palustrine forested seasonally flooded (PFOC) wetlands, and a Type III Water (a ditched stream; description in Hydrology Section) were observed on the site (Figure 2). The PEMC wetland continues off-site to the north where it is a PFOC wetland. The Type III Water is a tributary to Careys Lake that is tributary to the Skagit River. Elk, a state priority species, were observed on the site. No other critical areas, priority species, nor priority habitat were observed on or adjacent to the subject parcel.

METHODS AND PROCEDURES
The wetlands referred to in this report follow the Corps definition: "*...those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.*" (Environmental Laboratory 1987) and the State of Washington, *Washington State Wetlands Identification and Delineation Manual, March, 1997*. Through Section 404 of the Clean Water Act, the Corps has the authority to regulate the placement of fill materials in wetlands and other waters of the U.S., and requires permits for such activities. Skagit County regulates all activities in and around wetlands and other critical areas (SCC Chapter 14.24).
A two-step procedure is used to determine the presence and extent of wetlands and other critical areas on the subject parcel. This procedure includes preliminary data

21993 Grip Road Sedro-Woolley, WA 98284 (360) 856-2139 FAX (360) 856-5238

review and an on-site reconnaissance. A qualitative analysis of biota and habitats is performed. We observe the general terrain and traverse the entire parcel to identify wetlands and other critical areas/habitats. Data are collected from the dominant plant communities and soils. In addition, aerial photographs, soil data, and topographic maps are used for orientation and to assist in locating wetlands, streams, and other unique or critical habitats.

The goal of this analysis and site review is to describe the biological aspects of the parcel in order to provide sufficient information for the client and regulating agency to make informed decisions regarding wetlands, streams, and other critical areas.

A preliminary review of public resource documents is used to provide initial information on soils, vegetation, hydrology, and critical areas of the site and surrounding area. These resources include but are not limited to:

- USDA, Natural Resource Conservation Service soil surveys.
- Natural Resource Conservation Service hydric soil list.
- National Wetland Inventory maps.
- WDFW Priority Habitat & Species maps.

Jim Wiggins, M.S., P.W.S. and Elizabeth Binney, Ph.D., P.W.S. conducted an on-site field reconnaissance on 29 March 2005. Mr. Wiggins made an initial site visit during the second week of March. Mr. Wiggins and Dr. Binney are Professional Wetland Scientists (P.W.S.) certified through the Society of Wetland Scientists. Dr. Binney is provisionally certified through the Seattle District of the U.S. Army Corps of Engineers as a Wetland Delineator and completed the five-day training course for the Washington State Wetland Function Assessment Project Methods for Assessing Wetland Functions.

All wetlands are identified based on the presence of hydrophytic vegetation, hydric soils, and wetland hydrology as described in the Corps of Engineers *Wetland Delineation Manual* (Environmental Laboratory 1987). All three parameters must be present for an area to be considered a jurisdictional wetland under normal circumstances. Atypical situations and problem areas are treated per the Corps and state manuals. Figure 2 depicts the approximate locations of the sample plots and the approximate locations of on-site jurisdictional wetlands and stream. Data Forms for individual sample plots are at the back of this report.

An area has hydrophytic vegetation if greater than 50 percent of the total composition of the dominant plant species from all strata have an indicator status of Facultative (FAC), Facultative Wetland (FACW), or Obligate Wetland (OBL) (Environmental Laboratory 1987) as defined in the *National List of Plant Species that Occur in Wetlands: 1988 Washington* (Reed 1988) and the *1993 Supplement to List of Plant Species that Occur in Wetlands: Northwest (Region 9)* (Reed 1993). Additional indicator status of Facultative Upland (FACU) and Obligate Upland (UPL) are given to plants that usually occur in nonwetlands or nearly always occur in nonwetlands respectively (Reed 1988,

1993). No Indicator (NI) is given to species where sufficient information is lacking to give the species an indicator status (Reed 1988). The percent cover of the dominant plant species is estimated for each stratum (e.g. canopy, shrub layer, and herbaceous layer) within a thirty-foot radius plot and the indicator status of each species is determined.

Hydric soils, in general, are those soils that have high organic-matter, sulfidic material, reduced conditions, aquic or peraquic moisture regimes, soil colors with a chroma of 1, soil colors with a chroma of 2 with mottles, or the presence of iron or manganese concretions (Environmental Laboratory 1987). On-site soils are observed and described from a 20-inch (+/-) soil pit. Hydric characteristics and indicators such as redoxymorphic features (e.g. mottles) are examined within the profile and specifically just below the A-horizon or at 10 inches. Soil color, texture, and hydric indicators, if present, are recorded. Color is determined using a Munsell soil color chart (Kollmorgen 1998).

Wetland hydrology is present when direct or indirect indicators of seasonal or permanent soil saturation or inundation are observed. Indicators include: soil saturation; surface inundation; free water within the top 12 inches of the soil pit; oxidized rhizospheres, water-stained leaves; water marks; drift lines; sediment deposits; drainage patterns; or previously recorded data.

In order to provide an assessment of existing wetland functions, we use a combination of wetland functions listed in the Washington State Department of Ecology (DOE) Wetlands Rating Field Data Form (DOE 1993) and several wetland functional assessment methods, to provide a qualitative assessment of on-site wetlands. This assessment provides information that aids in categorization of the wetlands and baseline information if mitigation is required. Below is a list of functions and attributes addressed (for detailed methods please contact ATSI personnel); a similar list of functions is used to assess other critical areas:

1. Age and classes of wetland communities or populations.
2. Buffer size and character.
3. Cultural, heritage, recreational, and local value.
4. Ecotone complexity and transition zone between dry land and watercourses (sinuosity).
5. Enhancement potential.
6. Flood and storm drainage protection.
7. Habitat for fish and/or wildlife.
8. Presence of sensitive, threatened, or endangered species.
9. Presence and number of habitat features.
10. Shoreline stabilization.
11. Size of wetland or habitat.
12. Support of baseflow and surface or groundwater recharge or discharge.
13. Uniqueness of habitat to area or in general.
14. Water quality functions.
15. Wetland/habitat classification diversity.
16. Wildlife corridors and linkage to other habitats.

SITE DESCRIPTION

The relocation site is located in rural Skagit County north of State Route 20 and the existing Town of Hamilton (Figure 1). The site consists of a mix of pasture/field and forested land (Figure 2). The forested area is predominantly coniferous forest with stands dominated by deciduous trees near the center of the site. The southern portion of the site is predominantly pasture/field with a few patches of trees. This southern portion has a very gentle slope to the south as indicative of the on-site stream. The northern wooded portion has varying slopes, ravines, ridges, and benches. Two farms, with homes and associated buildings, occur on the lower pasture/field portion of the site. The parcel is surrounded by a mix of forestland and farmland.

We observed three wetland areas and one ditched stream. We observed one palustrine emergent seasonally flooded wetland (PEMC) on the west end of the site (Figure 2). This wetland continues off-site to the north where it is a PFOC wetland and is the headwaters of the on-site stream. Water from the wetland flows south into a ditch that hydrologically connects the wetland to other waters (the ditched wetland is now considered a stream). Two palustrine forested seasonally flooded wetlands (PFOC) were observed on the forested slope (Figure 2).

Vegetation

Vegetation on the site consists of upland pasture/field vegetation, upland forest vegetation, PEMC wetland vegetation, and PFOC wetland vegetation. Livestock currently use the pasture in the southwest portion of the site. The field in the east portion of the site is currently used to cultivate trees.

Upland pasture/field

Upland pasture/field vegetation occurs on the southern portion of the site. This vegetation type is dominated by bentgrass (*Agrostis capillaris*; FAC), orchardgrass (*Dactylis glomerata*; FACU), tall fescue (*Festuca arundinacea*; FAC-), dandelion (*Taraxacum officinale*; FACU), and red clover (*Trifolium officinale*; FACU).

Upland forest

Upland forest covers the northern portion of the site (Figure 2). Several forested stands also occur in the pasture/field (Figure 2). Although this vegetation type is dominated by coniferous forest, stands dominated by deciduous trees occur near the middle of the northern portion of the site. Deciduous trees dominate the stands in the pasture/field as well.

This vegetation type is dominated by a canopy of western red cedar (*Thuja plicata*; FAC), western hemlock (*Tsuga heterophylla*; FACU-), big leaf maple (*Acer macrophyllum*; FACU), Douglas fir (*Pseudotsuga menziesii*; FACU), and red alder (*Alnus rubra*; FAC). The shrub layer is dominated by Oregon grape (*Mahonia nervosa*; FACU) and vine maple (*Acer circinatum*; FAC-), with subdominants of salmonberry (*Rubus spectabilis*; FAC+) and red huckleberry (*Vaccinium parvifolium*; NI (upl)). The herbaceous layer is dominated by sword fern (*Polystichum munitum*; FACU).

The deciduous stands in the middle of the coniferous forest are dominated by a canopy of red alder. The shrub layer is dominated by salmonberry and red elderberry (*Sambucus racemosa*; FACU). The herbaceous layer is dominated by sword fern, bleeding heart (*Dicentra formosa*; FACU), and fringecup (*Tellima grandiflora*; FACU).

The deciduous stands in the pasture/field are dominated by red alder with a subdominant of western red cedar and a shrub layer dominated by osoberry and snowberry. The shrub and herbaceous layers have been affected by herbivory from the livestock.

PEMC wetland
This vegetation type is found in the pasture/field on the west end of the site. It is dominated by soft rush (*Juncus effusus*; FACW), reed canarygrass (*Phalaris arundinacea*; FACW), mannagrass (*Glyceria borealis*; OBL), bureed (*Sparganium emersum*), and duckweed (*Lemna minor*; OBL).

PFOC wetland
The PFOC wetland vegetation is found within the two wetlands in the forested portion of the site. This vegetation type is dominated by a canopy of red alder and paper birch (*Betula papyrifera*; FAC). The shrub layer is dominated by slough sedge (*Carex obnupta*; OBL) and skunk cabbage (*Lysichiton americanum*; OBL).

Soils
NRCS Soils
The Natural Resource Conservation Service (NRCS) maps the 5-Barneston gravelly loam, 0 to 8 percent slopes; 50-Dsytric Xerorthents, 50 to 60 percent slopes; 59-Giles silt loam; 61-Gilligan silt loam; 75-Indianloa sandy loam, 0 to 5 percent slopes; and Wickersham silt loam on or near the site (Sheet 23; Klungland and McArthur 1989) (Figure 3). None of the mapped soil units are listed as hydric.

Field Observations
Soils observed in the upland pasture/field and southern end of the site were generally 10YR 4/2 to 3/2 silt loam to gravelly silt loam underlain by 10YR 4/2 to 3/4 sandy gravelly silt loam.

Soils in the northern portion of the site within the forested area were generally 10YR 3/2 loams.

Soils in the PEMC wetland were 10YR 4/1 silt loam in the top 10 inches underlain by 2.5Y 5/1 clay.

Soils in the PFOC wetlands were either 10YR 3/2 coarse sand underlain by silt or 10YR 2/1 loam.

Hydrology

Primary indicators of wetland hydrology, inundation and saturation at the soil surface, were observed in all wetlands during our field reconnaissance. The on-site stream was flowing during our March 2005 site visits.

The PEMC wetland begins as a ditch on the northwest corner of the parcel, and then broadens into the PEMC wetland where it "flows" within a broad swale through the field. This wetland is then ditched (now a stream) where the water from this wetland is conveyed off-site to the south into a natural ravine south of the parcel into Careys Lake (Figure 2). The PEMC wetland is best described as a depressional outflow wetland. The ditched portion is a recent historic connection of the wetland to downgradient surface waters such as streams and Carey's Lake.

The PFOC wetlands are within depressions. Both wetlands lack surface water connection to other waters and appear isolated. These wetlands are depressional closed wetlands.

WILDLIFE & PRIORITY SPECIES

We did not observe endangered, threatened, or sensitive plant or animal species, or their habitats regulated by the federal government on the subject parcel or within the immediate vicinity.

The WDFW maps the site and the surrounding area as a location of regular large concentrations of rocky mountain elk (*Cervus elaphus nelsoni*). Elk and their associated habitat are listed as state priority habitat and species. We observed elk during the initial reconnaissance and observed elk scat, prints, and trails on the site during our field reconnaissance.

The parcel is a mix of forest and pasture/field that is connected to large tracts of forested land. Wildlife that likely use the site, in addition to the elk, are birds, small mammals, coyote (*Canis latrans*), and black tailed deer (*Odocoileus hemionus*). The wetlands provide potential amphibian breeding habitat for species such as the Pacific chorus frog (*Hyla regilla*) and potential breeding and forage habitat for waterfowl. The on-site PEMC and ditched stream provide adult and juvenile salmonid habitat.

WETLAND CATEGORIZATION AND FUNCTION EVALUATION

The on-site wetlands are Category III Wetlands as determined by the Washington State Wetland Rating System (DOE 1993) (Rating forms attached).

We have compiled information from agencies, professionals, the current literature to evaluate qualitatively the functions of wetlands and other habitats. References and a user manual for our evaluation are available upon request. Individual functions (see list in Methods and Procedures section above) are assessed point values of 0 through 3; 0=function or attribute is lacking; 1=low value, 2=medium or moderate value, and

3=high value. The average of the value for functions is used as the overall assessment of the wetland or habitat. Table 1 summaries of our evaluation of the on-site wetlands.

The overall value of PEMC wetland is moderate (Table 1). The wetland is large and has a forested component off-site to the north. The buffer is dominated by grazed pasture. Ecotone complexity (sinuosity) between uplands and is moderate. Enhancement potential for the wetlands is high because although the wetland is dominated by native vegetation, is has low diversity, and has been impacted by livestock. This wetland could be enhanced by removing livestock, planting the wetland with trees and shrubs, adding habitat features (e.g., logs and snags), and planting the buffer with native tree and shrub species. The wetland has moderate potential and opportunity for flood and storm drainage protection because it is within a swale that discharges into other waters, i.e., the ditched stream. It retains seasonal hydrology, attenuates flow, and provides baseflow for downstream waters. Wildlife habitat is moderate because of dominance of native species and duration of hydrology; it could be improved however by implanting the enhancements described above. The wetland provides amphibian breeding habitat and waterfowl forage habitat; it does provide fish habitat. The wetland has moderate to high opportunity and potential to improve water quality because it has a well developed herbaceous layer that filters and treats water and has a degraded source of runoff from livestock feces and silt runoff from use by livestock. Hydrology from the wetland connects to downgradeint waters.

Table 1. Functions and attributes of the PEMC wetland.

Functions and Attributes	Value
1. Age and classes of wetland communities or populations.	2
2. Buffer size and character.	1.5
3. Cultural, heritage, recreational, and local value.	1.5
4. Ecotone complexity & transition zone between dry land and watercourses (sinuosity).	1.5
5. Enhancement potential.	2.5
6. Flood and storm drainage protection.	2
7. Habitat for fish and/or wildlife.	2
8. Presence of sensitive, threatened, or endangered species.	0
9. Presence and number of habitat features.	1
10. Shoreline stabilization.	na
11. Size of wetland or habitat.	2
12. Support of baseflow and surface or groundwater recharge or discharge.	2
13. Uniqueness of habitat to area or in general.	2
14. Water quality functions.	2.5
15. Wetland/habitat classification diversity.	2
16. Wildlife corridors and linkage to other habitats.	2

The overall value of PFOC wetlands is also moderate (Table 2). The wetlands are small to moderate in size. The buffer function is high because it is upland native forest for more than 500 feet in all directions. Ecotone complexity (sinuosity) between uplands and is moderate. Enhancement potential for the wetlands is low because the wetlands are dominated by native vegetation, has well developed vertical structure (canopy,

shrub, and herbaceous layers), and have habitat features such as logs and snags. The wetlands have moderate potential and opportunity for flood and storm drainage protection because of there size. They are depressional closed wetlands therefore all stormwater is retained within the wetland. For the same reason they provide none to low baseflow support for downstream waters. Wildlife habitat is moderate because of dominance of native species and duration of hydrology. The wetlands provide amphibian breeding habitat and potential waterfowl forage and breeding habitat; they do not provide fish habitat. The wetlands have low to moderate opportunity and potential to improve water quality because they do not receive degraded runoff. Hydrology from the wetlands is isolated. The wetlands are connected to upland forest habitat.

Table 2. Functions and attributes of the PFOC wetlands.

Functions and Attributes	Value
1. Age and classes of wetland communities or populations.	2
2. Buffer size and character.	3
3. Cultural, heritage, recreational, and local value.	1
4. Ecotone complexity & transition zone between dry land and watercourses (sinuosity).	1.5
5. Enhancement potential.	1
6. Flood and storm drainage protection.	2.5
7. Habitat for fish and/or wildlife.	2
8. Presence of sensitive, threatened, or endangered species.	0
9. Presence and number of habitat features.	2
10. Shoreline stabilization.	na
11. Size of wetland or habitat.	1.5
12. Support of baseflow and surface or groundwater recharge or discharge.	1
13. Uniqueness of habitat to area or in general.	2
14. Water quality functions.	1.5
15. Wetland/habitat classification diversity.	2
16. Wildlife corridors and linkage to other habitats.	1.5

DETERMINATION

Three wetlands and one stream were observed on the relocation site, one Category III PEMC wetland and two Category III PFOC wetlands. These wetlands, as estimated in the field, are greater than 2,500 square feet. Wetland identification and delineation were made by the presence of positive indicators of hydrophytic vegetation, hydric soil, and wetland hydrology. The site is also a state priority habitat for elk.

Regulations

Skagit County regulates Category III Wetlands 2,500 square feet in size or greater and requires a standard 50-foot buffer (SCC 14.24.230). Buffers are measured horizontally in a landward direction from the wetland edge as delineated in the field (SCC 14.24.240). The onsite stream is a Type III Water. Skagit County requires a standard 100 foot buffer from all Type III Waters. We recommend that the WDFW be contacted regarding habitat recommendations for the elk.

The U.S. Army Corps of Engineers (Corps) requires notification of all disturbances to **all** wetlands, streams, and other waters and it is incumbent upon the landowner to disclose

such disturbances. Isolated wetlands are not under the jurisdiction of the Corps but confirmation of isolation must be made by the Corps. The Environmental Protection Agency (EPA) require a 401 water quality certification for disturbance of wetlands depending upon the type of project and for disturbance of wetlands one-half (0.5) acre or greater. Any disturbance of a wetland area one-half (0.5) acre or greater, or within a 100-year floodplain requires an Individual Permit from the Corps which includes the requirement of compensatory mitigation and an alternatives analysis. The Corps also has the discretion to not allow disturbance to high quality wetlands. The Corps requires certification that no listed nor known endangered, threatened, or sensitive plant or animal species, or National Historic Places are present on the parcel.

SIGNATORY

We have used the most current, established methods to make determinations as to the location, size, and types of wetlands on this parcel. All of the above statements are based on our best professional judgment. Although we follow the federal, state, and local criteria, we cannot guarantee that the U.S. Army Corps of Engineers or the local jurisdiction determination will correspond to ours. Please note that regulations pertaining to critical areas are subject to change over time.

If you have further questions or comments about this report, please contact Mr. Wiggins or Dr. Binney at (360) 856-2139 or FAX at (360) 856-5238. Please contact Skagit County Planning Department to confirm our wetland determinations and to confirm current regulations.

Thank you,

Jim Wiggins, M.S., P.W.S.
President
ATSI

for E.B.

Elizabeth Binney, Ph.D., P.W.S.
Vice-President
ATSI

Enclosures: Bibliography
Figures (3)
Data Forms (14)

BIBLIOGRAPHY

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Azous, A.L. and R.R. Horner, eds. 2001. *Wetlands and Urbanization: Implications for the Future.* Boca Raton, FL: CRC Press (Lewis Publishers).

Cooke, S.S. May 1996. Wetland and Buffer Functions Semi-Quantitative Assessment Methodology. Cook Scientific Services. Seattle, WA.

Cooke, S.S., Editor. 1997. *A Field Guide to the Common Wetland Plants of Western Washington and Northwestern Oregon.* Seattle Audubon Society, Washington Native Plant Society. Seattle, WA.

Cowardin, L.M. V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States.* Fish and Wildlife Service, U. S. Dept. of the Interior. FWS/OBS-79/31.

Cronk, J.K. and M.S. Fennessy. 2001. *Wetland Plants: Biology and Ecology.* Boca Raton, FL: CRC Press (Lewis Publishers).

Department of Natural Resources. 1995. *Washington Forest Practices.* Department of Natural Resources, Forest Practices Division: Olympia, WA.

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*, Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station, Vicksburg, Miss.

Federal Register. 15 January 2002. Part II. Final Notice of Issuance of Nationwide Permits; Notice.

Franklin, J.F., and C.T. Dyrness 1973. *Natural Vegetation of Oregon and Washington.* Oregon State University Press. Corvallis, Oregon.

Haeussler, S., D. Coates, and J. Mather. 1990. *Autecology of Common Plants in British Columbia: A Literature Review.* FRDA Report 158. B.C. Ministry of Foresty and Canada - B.V. Forest Resource Development Agreement; Victoria, B.C.

Hickman, J.C, ed., 1993, *The Jepson Manual, Higher Plants of Californa*, University of California Press, Berkely, CA.

Hitchcock, C.L. and A. Cronquist. 1973. *Flora of the Pacific Northwest.* University of Washington Press. Seattle, Washington.

Holling, C.S. (ed.). 1978. *Adaptive Environmental Assessment and Management.* John Wiley, New York.

Hruby, T., T.Granger, K. Brunner, S. Cooke, K. Dublanica, R. Gersib, L. Reinelt, K. Richter, D. Sheldon, E. Teachout, A. Wald, and F. Weinmann. July 1999. Methods for Assessing Wetland Functions Volume 1: Riverine and Depressional Wetlands in the Lowlands of Western Washington. Washington State Department Ecology Publication #99-115.

Keddy, P. A. 2000. *Wetland Ecology: Principles and Conservation.* New York: Cambridge University Press.

Kollmorgen Corporation. 1998. *Munsell soil color charts*, Baltimore, MD.

Klungland, M.W. and M. McArthur. 1989. *Soil Survey of Skagit County Area, Washington.* Soil Conservation Service, U.S.D.A., Washington State Department of Natural Resources, and Washington State University, Agriculture Research Center.

Leonard W.P., H.A. Brown, L.L.C. Jones, K.R. McAllister, and R.M. Storm. 1993. *Amphibians of Washington and Oregon.* Seattle Audubon Society. Seattle, WA.

Mitsch, W.J. and J.G. Gosselink. 2000. *Wetlands*, 3rd ed. John Wiley & Sons, New York. 920 pp.

National Wetland Inventory, 1987. U.S. Department of the Interior: Fish and Wildlife Service.

Peterson, R.T. 1990. *A Field Guide to Western Birds.* Peterson Field Guides. Houghton Mifflin Co. Boston, Massachusetts.

Reed, P.B., Jr. 1988. *National List of Plant Species that occur in Wetlands: 1988 Northwest.* Biological Report 88 (26.9), U.S. Fish and Wildlife Service, St. Petersburg, Florida.

Richardson, J.L. and M.J. Vepraskas (Eds.). 2001. *Wetland Soils: Genesis, Hydrology, Landscapes, and Classification.* Lewis Publishers, Boca Raton, Florida.

Skagit Co. CAO. 2000. *Skagit County Critical Areas Ordinance Title 14, Chapter 14.06.* Skagit County Planning Department: Mount Vernon, Washington.

Stebbins, R.C. 1985. *A Field Guide to Western Reptiles and Amphibians*, 2nd edition. Houghton Mifflin Co. Boston, Massachusetts.

Tiner, R.W., 1999. *Wetland Indicators, A Guide to Wetland Identification, Delineation, Classification, and Mapping.* Lewis Publishers, Boca Raton, Florida.

United States Department of the Interior, Fish and Wildlife Service. 1977. ANational Wetlands Inventory Maps, Scale 1:24,000. Office of Biological Services.

Washington Department of Ecology. 1993. *Washington State Wetlands Rating System for Western Washington.* Publication #93-74.

Washington State Department of Ecology, *Washington State Wetlands Identification and Delineation Manual,* March, 1997; Pub. No. 96-94

Washington State Department of Wildlife. 1993. *Priority Habitats and Species.* Olympia, WA. 22 pp.

Washington State Department of Wildlife. May 1991. *Management Recommedations for Washington's Priority Habitats and Species.* Olympia, WA.

FIGURES

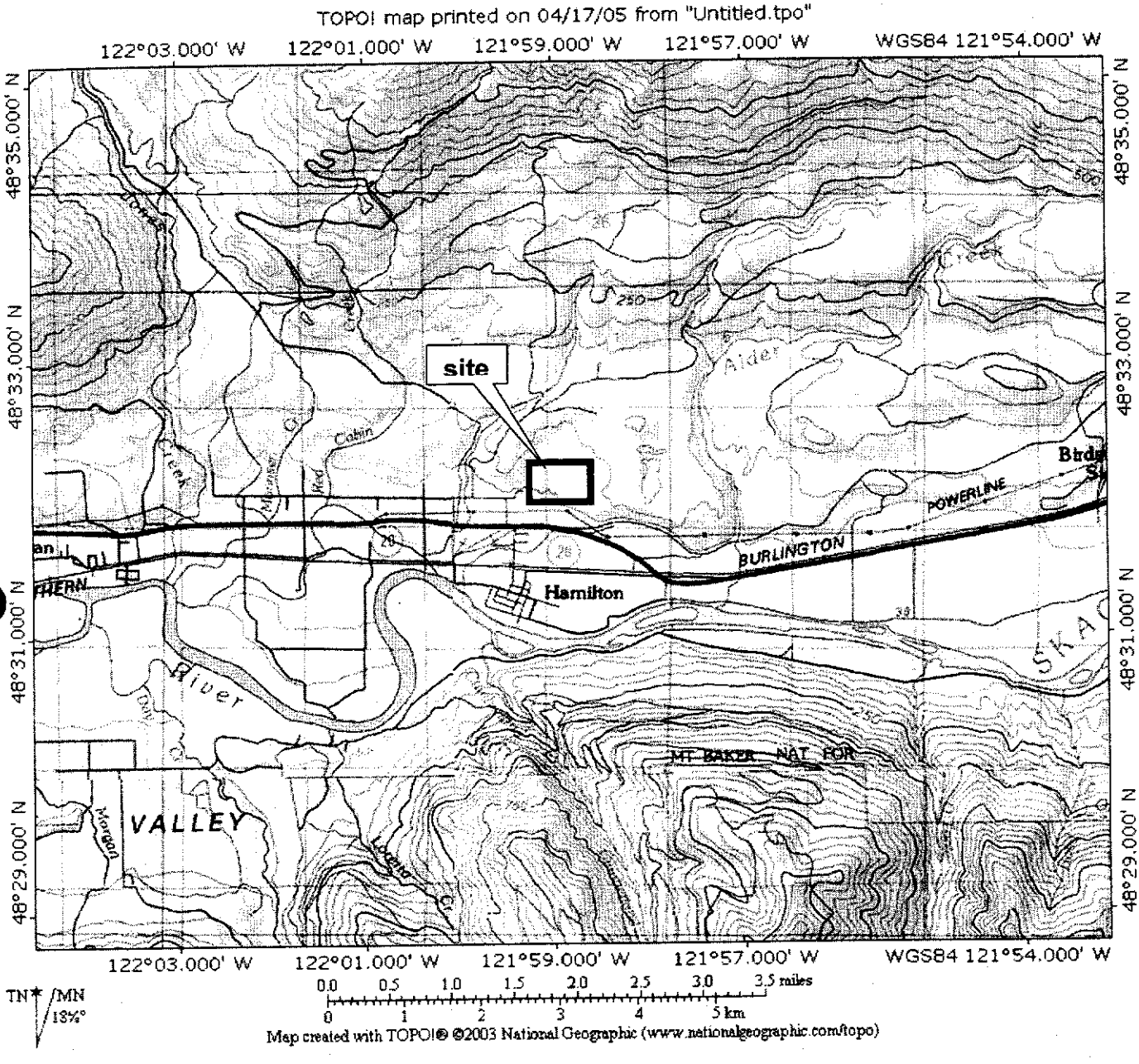
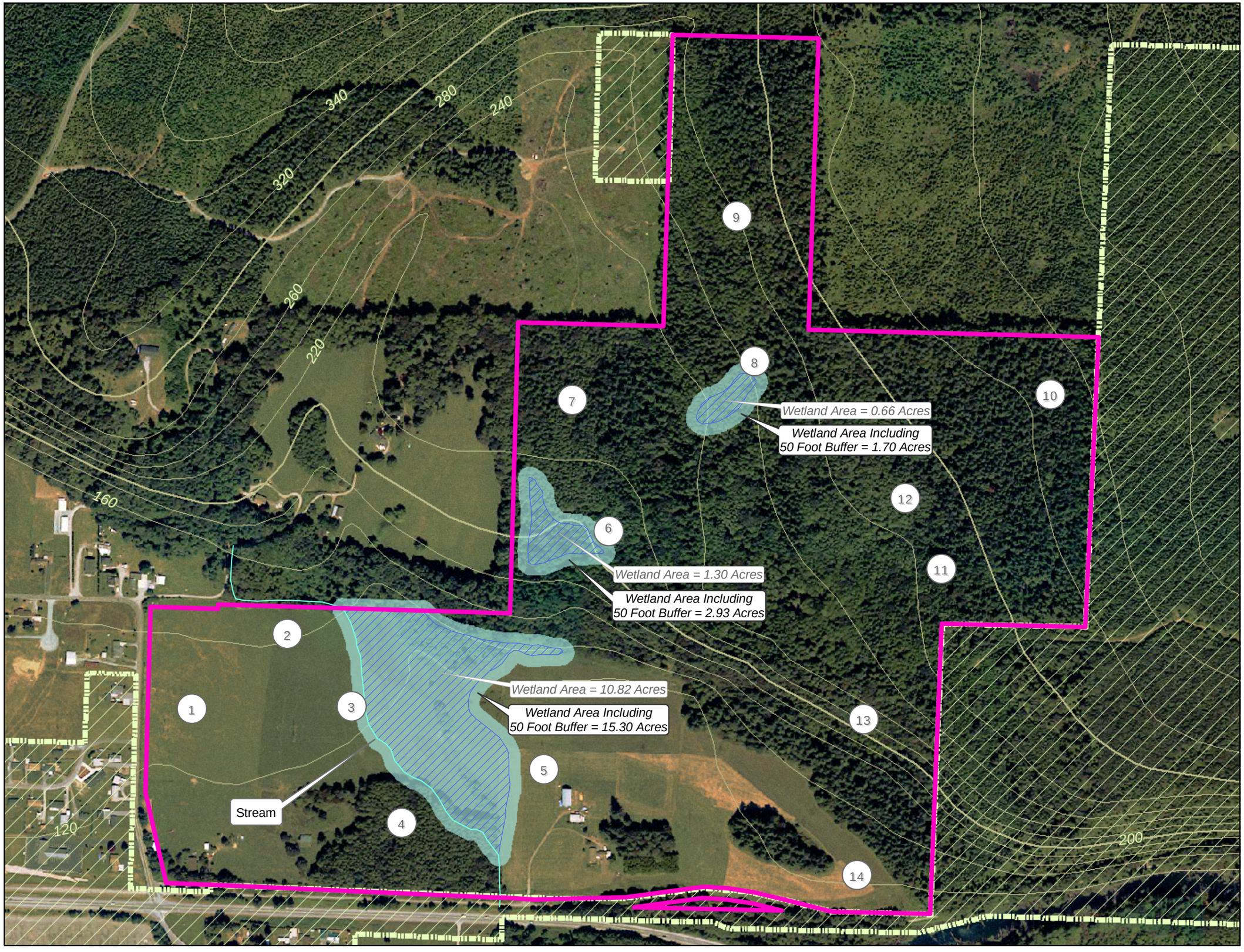


Figure 1. Location map of the Town of Hamilton relocation site.

Hamilton Relocation Feasibility Study



Legend

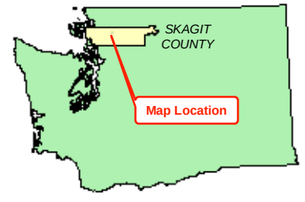
- Existing City Limits
- Contours: 20 Foot Interval
- Area for Assessment
- *Wetland Location
- *Wetland & 50 Foot Buffer
- *Stream
- 1 *Sample Plots

*Wetlands are approximate. Wetlands, Streams, and Sample Plots were digitized using field sketch and field notes from Wetland Biologist.

Map Date: August 3, 2005

1 inch equals 400 feet

400 200 0 400 Feet



N W E S

Skagit County
Geographic Information Services
700 S. 2nd Street, Room 202
Mount Vernon, WA 98273
(360) 336-9368
www.skagitcounty.net

SLC021

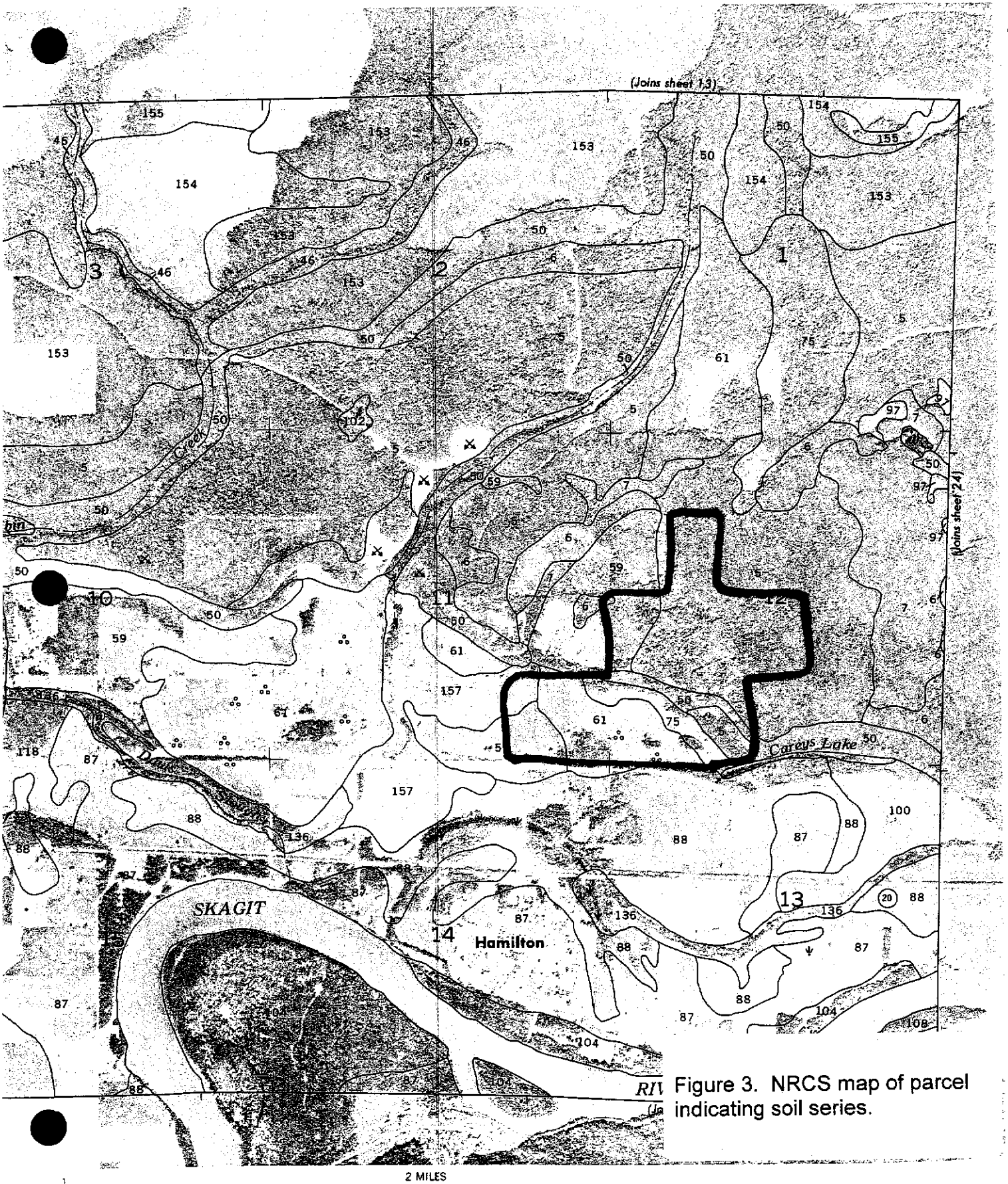


Figure 3. NRCS map of parcel indicating soil series.

DATA FORMS

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Investigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: Mix of pasture and forested land. Plot w/in pasture W. end of parcel. UPL

VEGETATION

Dominant Species	Stratum	%cover	Indicator	Dominant Species	Stratum	%cover	Indicator
1 *Agrostis capillaris*	herb.	30	FAC	9			
2 *Dactylis glomerata*	herb.	20	FACU	10			
3 *Festuca arundinacea*	herb.	20	FAC-	11			
4 *Taraxacum officinale*	herb.	20	FACU	12			
5 *Trifolium pratense*	herb.	20	FACU	13			
6				14			
7				15			
8				16			

Percent of Dominant Species that are OBL, FACW, or FAC: 27%

Other hydrophytic indicators: None

Remarks: Lacks hydrophytic vegetation indicators.

HYDROLOGY

Depth to Surface Water: None Depth to saturated soil: None Depth to free standing water in soil pit: None

Recorded Data		Primary Indicators		Secondary Indicators (2 or more required)	
Stream, Lake, or Tide Gauge	☐	Inundated	☐	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
Other (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Lacks wetland hydrology indicators.

SOILS

Series/Phase-Mapped: 59-Giles silt loam.

Field observation confirm mapped type? No

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-14	10YR 4/2	none	na	gravelly silt loam
14-20	10YR 4/2	none	na	sandy gravelly silt loam

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☐

Remarks: Lacks hydric soil indicators.

WETLAND DETERMINATION

Hydrophytic Vegetation present? No
Wetland Hydrology present? No
Hydric Soil present? No

Is this sample plot within a wetland? NO

Remarks:

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Investigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: Mix of pasture and forested land. Plot w/in Pasture W. end of parcel near N. line. UPL

VEGETATION

Dominant Species	Stratum	%cover	Indicator	Dominant Species	Stratum	%cover	Indicator
1 *Agrostis capillaris*	herb.	30	FAC	9			
2 *Dactylis glomerata*	herb.	20	FACU	10			
3 *Festuca arundinacea*	herb.	20	FAC-	11			
4 *Taraxacum officinale*	herb.	20	FACU	12			
5 *Trifolium pratense*	herb.	20	FACU	13			
6				14			
7				15			
8				16			

Percent of Dominant Species that are OBL, FACW, or FAC: 27%

Other hydrophytic indicators: None

Remarks: Lacks hydrophytic vegetation indicators.

HYDROLOGY

Depth to Surface Water: None Depth to saturated soil: None Depth to free standing water in soil pit: None

Recorded Data		Primary Indicators		Secondary Indicators (2 or more required)	
Stream, Lake, or Tide Gauge	☐	Inundated	☐	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
Other (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Lacks wetland hydrology indicators.

SOILS

Series/Phase-Mapped: 61-Gilligan silt loam

Field observation confirm mapped type? Yes

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-10	10YR 4/2	none	na	gravelly silt loam
10-20	2.5Y 4/2	none	na	silty clay

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☐

Remarks: Lacks hydric soil indicators.

WETLAND DETERMINATION

Hydrophytic Vegetation present? No
Wetland Hydrology present? No
Hydric Soil present? No

Is this sample plot within a wetland? NO

Remarks:

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Investigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: Mix of pasture and forested land. Plot w/in pasture, W. side. PEM

VEGETATION

Dominant Species	Stratum	%cover	Indicator	Dominant Species	Stratum	%cover	Indicator
1 *Juncus effusus*	herb.	70	FACW	9			
2 *Glyceria borealis*	herb.	25	OBL	10			
3 *Lemna minor*	herb.	25	OBL	11			
4 *Phalaris arundinacea*	herb.	20	FACW	12			
5 *Sparganium emersum*	herb.	20	OBL	13			
6				14			
7				15			
8				16			

Percent of Dominant Species that are OBL, FACW, or FAC: 100%
Other hydrophytic indicators: None
Remarks: Hydrophytic vegetation indicators present.

HYDROLOGY

Depth to Surface Water: Up to 12" Depth to saturated soil: Surface Depth to free standing water in soil pit: Surface

Recorded Data		Primary Indicators		Secondary Indicators (2 or more required)	
Stream, Lake, or Tide Gauge	☐	Inundated	☒	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
Other (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Wetland hydrology indicators present.

SOILS

Series/Phase-Mapped: 61-Gilligan silt loam
Field observation confirm mapped type? No

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-10	10YR 4/1	none	na	silt loam
10+*	2.5Y 5/1	none	na	clay

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☒

Remarks: *too sat. for accurate profile descript. below 10". Hydric soil indicators present.

WETLAND DETERMINATION

Hydrophytic Vegetation present? Yes
Wetland Hydrology present? Yes
Hydric Soil present? Yes

Is this sample plot within a wetland? YES

Remarks:

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Investigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: Mix of pasture and forested land. Plot in forested stand S. end of parcel. Heavily impacted by livestock. UPL

VEGETATION

Dominant Species	Stratum	%cover	Indicator	Dominant Species	Stratum	%cover	Indicator
1 *Alnus rubra*	canopy	75	FAC	9			
2 *Thuja plicata*	canopy	20	FAC	10			
3 *Oemleria cerasiformis*	shrub	40	FACU	11			
4 *Symphoricarpos albus*	shrub	20	FACU	12			
5				13			
6				14			
7				15			
8				16			

Percent of Dominant Species that are OBL, FACW, or FAC: 61% Other hydrophytic indicators: None

Remarks: No spp "wetter" than FAC. Much of shrub layer grazed. Lacks hydrophytic vegetation indicators.

HYDROLOGY

Depth to Surface Water: None Depth to saturated soil: None Depth to free standing water in soil pit: None

Recorded Data	☐	**Primary Indicators**	☐	**Secondary Indicators (2 or more required)**	☐
Stream, Lake, or Tide Gauge	☐	Inundated	☐	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
Other (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Lacks wetland hydrology indicators.

SOILS

Series/Phase-Mapped: 61-Gilligan silt loam Field observation confirm mapped type? Yes

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-7	10YR 3/2	none	na	loam
7-20	10YR 3/4	none	na	loam

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☐

Remarks: Lacks hydric soil indicators.

WETLAND DETERMINATION

Hydrophytic Vegetation present? No
Wetland Hydrology present? No
Hydric Soil present? No

Is this sample plot within a wetland? NO

Remarks:

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Investigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: Mix of pasture and forested land. Plot up slope in forested portion of parcel. PFO

VEGETATION

Dominant Species	Stratum	%cover	Indicator	Dominant Species	Stratum	%cover	Indicator
1 *Alnus rubra*	canopy	35	FAC	9			
2 *Betula papyrifera*	canopy	25	FAC	10			
3 *Thuja plicata*	canopy	10	FAC	11			
4 *Rubus spectabilis*	shrub	40	FAC+	12			
5 *Carex obnupta*	herb.	45	OBL	13			
6 *Lysichiton ameriacum*	herb.	20	OBL	14			
7				15			
8				16			

Percent of Dominant Species (>=20%) that are OBL, FACW, or FAC: 100% Other hydrophytic indicators: None
Remarks: Tree and shrub spp. not in standing water. Hydrophytic vegetation indicators present.

HYDROLOGY

Depth to Surface Water: >12" Depth to saturated soil: Surface Depth to free standing water in soil pit: Surface

Recorded Data		Primary Indicators		Secondary Indicators (2 or more required)	
Stream, Lake, or Tide Gauge	☐	Inundated	☒	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
Other (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Wetland hydrology indicators present.

SOILS

Series/Phase-Mapped: 59-Giles silt loam

Field observation confirm mapped type? No

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-6	10YR 3/2	none	na	coarse sand
6-10+*	10YR 3/2	none	na	silt

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☐

Remarks: *too sat. for accurate soil descript. below 10". Soils saturation may be obscuring hydric indicators.

WETLAND DETERMINATION

Hydrophytic Vegetation present? Yes
Wetland Hydrology present? Yes
Hydric Soil present? No

Is this sample plot within a wetland? YES

Remarks: *Hydric soil was not observed at this plot; however, the soils were saturated possibly obscuring hydric indicators. Wetland hydrology with inundation >12" present and dominance of obligate plant spp.*

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Investigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: Mix of pasture and forested land. Plot w/in field/tree plantation (36-48" tall). UPL

VEGETATION

Dominant Species	Stratum	%cover	Indicator	Dominant Species	Stratum	%cover	Indicator
1 *Agrostis capillaris*	herb.	30	FAC	9			
2 *Dactylis glomerata*	herb.	30	FACU	10			
3 *Festuca pratensis*	herb.	25	FACU	11			
4 *Taraxacum officinale*	herb.	25	FACU	12			
5				13			
6				14			
7				15			
8				16			

Percent of Dominant Species that are OBL, FACW, or FAC: 27% Other hydrophytic indicators: None

Remarks: Also various spp. of planted conifers (rows). Lacks hydrophytic vegetation indicators.

HYDROLOGY

Depth to Surface Water: None Depth to saturated soil: None Depth to free standing water in soil pit: None

Recorded Data		Primary Indicators		Secondary Indicators (2 or more required)	
Stream, Lake, or Tide Gauge	☐	Inundated	☐	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
Other (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Lacks wetland hydrology indicators.

SOILS

Series/Phase-Mapped: Gilligan silt loam Field observation confirm mapped type? Yes

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-14	10YR 3/2	none	na	loam
14-20	2.5Y 4/3	none	na	very fine sandy loam

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☐

Remarks: Lacks hydric soil indicators.

WETLAND DETERMINATION

Hydrophytic Vegetation present? No
Wetland Hydrology present? No
Hydric Soil present? No

Is this sample plot within a wetland? No

Remarks:

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Investigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: Mix of pasture and forested land. Plot w/in forested area on slope near NW corner. UPL

VEGETATION

Dominant Species	Stratum	%cover	Indicator	Dominant Species	Stratum	%cover	Indicator
1 *Thuja plicata*	canopy	40	FAC	9			
2 *Acer macrophyllum*	canopy	30	FACU	10			
3 *Tsuga heterophylla*	canopy	20	FACU-	11			
4 *Alnus rubra*	canopy	10	FAC	12			
5 *Mahonia nervosa*	shrub	20	FACU	13			
6 *Polystichum munitum*	herb.	50	FACU	14			
7				15			
8				16			

Percent of Dominant Species (>= 20%) that are OBL, FACW, or FAC: 25% Other hydrophytic indicators: None

Remarks: Lacks hydrophytic vegetation indicators.

HYDROLOGY

Depth to Surface Water: None Depth to saturated soil: None Depth to free standing water in soil pit: None

Recorded Data		Primary Indicators		Secondary Indicators (2 or more required)	
Stream, Lake, or Tide Gauge	☐	Inundated	☐	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
Other (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Lacks wetland hydrology indicators.

SOILS

Series/Phase-Mapped: *59-Giles silt loam* Field observation confirm mapped type? Yes

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-7	7.5YR 3/1	none	na	loamy duff
7-20	7.5YR 2.5/3	none	na	gravelly loam

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☐

Remarks: Lacks hydric soil indicators.

WETLAND DETERMINATION

Hydrophytic Vegetation present? No
Wetland Hydrology present? No
Hydric Soil present? No

Is this sample plot within a wetland? No

Remarks:

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Fi[redacted]vestigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: Mix of pasture and forested land. Plot w/in forested portion of parcel, N-central. PFO

VEGETATION

Dominant Species	Stratum	%cover	Indicator	Dominant Species	Stratum	%cover	Indicator
1 *Alnus rubra*	canopy	50	FAC	9			
2 *Rubus spectabilis*	shrub	40	FAC+	10			
3 *Lysichiton americanum*	herb.	20	OBL	11			
4				12			
5				13			
6				14			
7				15			
8				16			

Percent of Dominant Species that are OBL, FACW, or FAC: 100%

Other hydrophytic indicators: None

Remarks: Hydrophytic vegetation indicators present.

HYDROLOGY

Depth to Surface Water: 12" Depth to saturated soil: Surface Depth to free standing water in soil pit: Surface

Recorded Data	☐	**Primary Indicators**		**Secondary Indicators (2 or more required)**	
Stream, Lake, or Tide Gauge	☐	Inundated	☒	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
Other (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Wetland hydrology indicators present.

SOILS

Series/Phase-Mapped: 5-Barneston gravelly loam, 0-8% slopes

Field observation confirm mapped type? No

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-10	10YR 2/1	none	na	loam
10+*	10YR 3/2	?	?	loam

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☒

Remarks: *too sat. for accurate profile descript. below 10". Hydric soil indicators appear to be present.

WETLAND DETERMINATION

Hydrophytic Vegetation present? Yes
Wetland Hydrology present? Yes
H[redacted]ic Soil present? Yes

Is this sample plot within a wetland? YES

R[redacted]arks:

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Fi[redacted]nvestigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: Mix of pasture and forested land. Plot w/in forested portion of parcel ~ 50' N of Plot 8. UPL

VEGETATION

Dominant Species	Stratum	%cover	Indicator		Dominant Species	Stratum	%cover	Indicator
1 *Thuja plicata*	canopy	25	FAC	9	*Dicentra formosa*	herb.	25	FACU
2 *Alnus rubra*	canopy	20	FAC	10	*Tellima grandiflora*	herb.	25	NI(upl)
3 *Tsuga heterophylla*	canopoy	20	FACU-	11				
4 *Pseudotsuga menziesii*	canopy	10	FACU	12				
5 *Thuja plicata*	redprod.	10	FAC	13				
6 *Acer circinatum*	shrub	20	FAC-	14				
7 *Rubus spectabilis*	shrub	10	FAc+	15				
8 *Polystichum munitum*	herb.	60	FACU	16				

Percent of Dominant Species (>=20%) that are OBL, FACW, or FAC: 23% Other hydrophytic indicators: None
Remarks: Lacks hydrophytic vegetation indicators.

HYDROLOGY

Depth to Surface Water: None Depth to saturated soil: None Depth to free standing water in soil pit: None

Recorded Data	☐	**Primary Indicators**	☐	**Secondary Indicators (2 or more required)**	☐
Stream, Lake, or Tide Gauge	☐	Inundated	☐	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
Other (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Lacks wetland hydrology indicators.

SOILS

Series/Phase-Mapped: 5-Barneston gravelly loam, 0-8% slopes Field observation confirm mapped type? Yes

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-12	10YR 3/2	none	na	loam
12-20	10YR 3/3	none	na	loam

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☐

Remarks: Lacks hydric soil indicators.

WETLAND DETERMINATION

Hydrophytic Vegetation present? No
Wetland Hydrology present? No
H[redacted]ric Soil present? No

Is this sample plot within a wetland? NO

Remarks:

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Investigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: *Mix of pasture and forested land. Plot w/in forested portion of parcel near NW corner. UPL*

VEGETATION

Dominant Species	Stratum	%cover	Indicator	Dominant Species	Stratum	%cover	Indicator
1 *Thuja plicata*	canopy	45	FAC	9			
2 *Pseudotsuga menziesii*	canopy	35	FACU	10			
3 *Acer macrophyllum*	canopy	20	FACU	11			
4 *Polystichum munitum*	herb.	60	FACU	12			
5				13			
6				14			
7				15			
8				16			

Percent of Dominant Species that are OBL, FACW, or FAC: 28%

Other hydrophytic indicators: None

Remarks: Lacks hydrophytic vegetation indicators.

HYDROLOGY

Depth to Surface Water: None Depth to saturated soil: None Depth to free standing water in soil pit: None

Recorded Data		**Primary Indicators**		**Secondary Indicators (2 or more required)**	
Stream, Lake, or Tide Gauge	☐	Inundated	☐	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
Other (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Lacks wetland hydrology indicators.

SOILS

Series/Phase-Mapped: 5-Barneston gravelly loam, 0-8% slopes

Field observation confirm mapped type? Yes

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-7	7.5YR 3/1	none	na	duffy loam
7-20	7.5YR 2.5/3	none	na	gravelly loam (some cobble)

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☐

Remarks: Lacks hydric soil indicators.

WETLAND DETERMINATION

Hydrophytic Vegetation present? No
Wetland Hydrology present? No
Hydric Soil present? No

Is this sample plot within a wetland? NO

Remarks:

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Investigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: Mix of pasture and forested land. Plot w/in forested portion of parcel, near E end. UPLO

VEGETATION

Dominant Species	Stratum	%cover	Indicator		Dominant Species	Stratum	%cover	Indicator
1 *Pseudotsuga menziesii*	canopy	40	FACU	9	*Polystichum munitum*	herb.	30	FACU
2 *Acer macrophyllum*	canopy	25	FACU	10	*Dicentra formosa*	herb.	20	FACU
3 *Thuja plicata*	canopy	25	FAC	11				
4 *Tsuga heterophylla*	reprod.	10	FACU-	12				
5 *Thuja plicata*	reprod.	10	FAC	13				
6 *Mahonia nervosa*	shrub	30	FACU	14				
7 *Acer circinatum*	shrub	20	FAC-	15				
8 *Vaccinium parvifolium*	shrub	10	NI(upl)	16				

Percent of Dominant Species (>= 20%) that are OBL, FACW, or FAC: 13% Other hydrophytic indicators: None

Remarks: Lacks hydrophytic vegetation indicators.

HYDROLOGY

Depth to Surface Water: None Depth to saturated soil: None Depth to free standing water in soil pit: None

Recorded Data		Primary Indicators		Secondary Indicators (2 or more required)	
Stream, Lake, or Tide Gauge	☐	Inundated	☐	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
Other (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Lacks wetland hydrology indicators.

SOILS

Series/Phase-Mapped: 5-Barneston gravelly loam, 0-8% slopes Field observation confirm mapped type? Yes

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-4	7.5YR 3/1	none	na	duffy loam
4-20	7.5YR 2.5/3	none	na	gravelly loam

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☐

Remarks: Lacks hydric soil indicators.

WETLAND DETERMINATION

Hydrophytic Vegetation present? No
Wetland Hydrology present? No
Hydric Soil present? No

Is this sample plot within a wetland? NO

Remarks:

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Fi[redacted]vestigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: Mix of pasture and forested land. Plot w/in forested portion of parcel, near center of forest; w/in stand of deciduous trees. UPL

VEGETATION

Dominant Species	Stratum	%cover	Indicator		Dominant Species	Stratum	%cover	Indicator
1 *Alnus rubra*	canopy	85	FAC	9				
2 *Rubus spectabilis*	shrub	45	FAC+	10				
3 *Sambucus racemosa*	shrub	25	FACU	11				
4 *Dicentra formosa*	herb.	75	FACU	12				
5 *Polystichum munitum*	herb.	20	FACU	13				
6 *Tellima grandiflora*	herb.	20	FACU	14				
7				15				
8				16				

Percent of Dominant Species that are OBL, FACW, or FAC: 48%
Other hydrophytic indicators: None
Remarks: No "wet" spp in herb. layer; lacks hydrophytic vegetation indicators.

HYDROLOGY

Depth to Surface Water: None
Depth to saturated soil: None
Depth to free standing water in soil pit: None

Recorded Data	☐	***Primary Indicators***	☐	**Secondary Indicators (2 or more required)**	☐
Stream, Lake, or Tide Gauge	☐	Inundated	☐	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
O[redacted] (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
[redacted]		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Lacks wetland hydrology indicators.

SOILS

Series/Phase-Mapped: 5-Barneston gravelly loam, 0-8% slopes
Field observation confirm mapped type? Yes

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-5	7.5YR 2.5/2	none	na	loam
5-18	7.5YR 3/3	none	na	loam
18-20+	2.5Y 4/4	none	na	loam

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☐

Remarks: Lacks hydric soil indicators.

WETLAND DETERMINATION

Hydrophytic Vegetation present? No
Wetland Hydrology present? No
H[redacted] Soil present? No

Is this sample plot within a wetland? NO

Remarks:

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Fi[redacted]nvestigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: Mix of pasture and forested land. Plot w/in forested portion of parcel, near east end. UPL.

VEGETATION

Dominant Species	Stratum	%cover	Indicator		Dominant Species	Stratum	%cover	Indicator
1 *Pseudotsuga menziesii*	canopy	35	FACU	9	*Hydrophyllum tenuipes*	herb.	20	NI(fac)
2 *Thuja plicata*	canopy	35	FAC	10				
3 *Tsuga heterophylla*	canopy	20	FACU-	11				
4 *Acer macrophyllum*	canopy	10	FACU	12				
5 *Alnus rubra*	canopy	10	FAC	13				
6 *Mahonia nervosa*	shrub	35	FACU	14				
7 *Rubus spectabilis*	shrub	20	FAC+	15				
8 *Polystichum munitum*	herb.	65	FACU	16				

Percent of Dominant Species that are OBL, FACW, or FAC: 33%

Other hydrophytic indicators: None

Remarks: Lacks hydrophytic vegetation indicators.

HYDROLOGY

Depth to Surface Water: None Depth to saturated soil: None Depth to free standing water in soil pit: None

Recorded Data		Primary Indicators		Secondary Indicators (2 or more required)	
Stream, Lake, or Tide Gauge	☐	Inundated	☐	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
O[redacted] (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
[redacted]		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Lacks wetland hydrology indicators.

SOILS

Series/Phase-Mapped: 5-Barneston gravelly loam, 0-8% slopes

Field observation confirm mapped type? Yes

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-3	7.5YR 2.5/2	none	na	loam
3-20	7.5YR 3/3	none	na	loamy sand

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☐

Remarks: Lacks hydric soil indicators.

WETLAND DETERMINATION

Hydrophytic Vegetation present? No
Wetland Hydrology present? No
H[redacted]c Soil present? No

Is this sample plot within a wetland? NO

Remarks:

ROUTINE WETLAND DETERMINATION DATA FORM

(1987 COE Wetlands Delineation Manual)

Project Name: Hamilton
Applicant/Owner: Town of Hamilton
Investigator(s): E. Binney & J. Wiggins

Date: 29 March 2005
County: Skagit
State: Washington
S-T-R: 11 & 12 -35N-6E

Do Normal Circumstances exist on the site? Yes
Is this site significantly disturbed (Atypical Situation)? No
Is the Area a potential Problem Area? No

Description: Mix of pasture and forested land. Parcel in pasture, near SE. corner of parcel. UPL

VEGETATION

Dominant Species	Stratum	%cover	Indicator	Dominant Species	Stratum	%cover	Indicator
1 *Dactylis glomerata*	herb.	40	FACU	9			
2 *Agrostis capillaris*	herb.	30	FAC	10			
3 *Festuca arundinacea*	herb.	30	FAC-	11			
4 *Plantago lanceolata*	herb.	20	FAC	12			
5 *Taraxacum officinale*	herb.	20	FACU	13			
6 *Ranunculus acris*	herb.	20	FACW-	14			
7				15			
8				16			

Percent of Dominant Species that are OBL, FACW, or FAC: 44%

Other hydrophytic indicators: None

Remarks: Lacks hydrophytic vegetation indicators.

HYDROLOGY

Depth to Surface Water: None Depth to saturated soil: None Depth to free standing water in soil pit: None

Recorded Data		Primary Indicators		Secondary Indicators (2 or more required)	
Stream, Lake, or Tide Gauge	☐	Inundated	☐	Oxidized Root Channels in upper 12 inches	☐
Aerial Photographs	☐	Saturated in Upper 12 Inches	☐	Water-Stained Leaves	☐
Other (Explain in Remarks)	☐	Water Marks	☐	Local Soil Survey data	☐
		Drift Lines	☐	FAC-Neutral Test	☐
No Recorded Data Available	☒	Sediment Deposits	☐	Other (Explain in Remarks)	☐
		Drainage Patterns in Wetlands	☐		

Remarks: Lacks wetland hydrology indicators.

SOILS

Series/Phase-Mapped: 75-Indianola sandy loam, 0-5% slopes

Field observation confirm mapped type? Yes

Profile Description:

Depth (in.)	Color	Mottle	Mottle %	Texture
0-13	7.5YR 2.5/2	none	na	sandy loam
13-20	7.5YR 3/3	none	na	loamy sand

Hydric Soil Indicators:

Histosol	☐	Concretions	☐
Histic Epipedon	☐	High Organic Content	☐
Sulfidic Odor	☐	Organic Streaking (sand)	☐
Aquic Moisture Regime	☐	On Hydric Soils List	☐
Reducing Conditions	☐	Gleyed or Low Chroma	☐

Remarks: Lacks hydric soil indicators.

WETLAND DETERMINATION

Hydrophytic Vegetation present? No
Wetland Hydrology present? No
Hydric Soil present? No

Is this sample plot within a wetland? NO

Remarks:

WETLANDS RATING FIELD DATA FORMS

Wetlands Rating Field Data Form

Background Information:

Name of Rater: E. Binney Affiliation: ATSI Date: 17 April 05
Field - 29 MARCH 05

Name of wetland (if known): PEMC

Government Jurisdiction of wetland: Skagit Co, WSDOE, COE

Location: 1/4 Section: ____ of 1/4 S: ____ Section: 11 Township: 35N Range: 6E

Sources of Information: (Check all sources that apply)

Site visit: ✓ USGS Topo Map: ✓ NWI map: ____ Aerial Photo: ✓ Soils survey: ✓

Other: ____ Describe: ____

When The Field Data form is complete enter Category here: III

Q.1. High Quality Natural Wetland

Circle Answers

Answer this question if you have adequate information or experience to do so. If not find someone with the expertise to answer the questions. Then, if the answer to questions 1a, 1b and 1c are all NO, contact the Natural Heritage program of DNR.

1a. Human caused disturbances.

Is there significant evidence of human-caused changes to topography or hydrology of the wetland as indicated by any of the following conditions? Consider only changes that may have taken place in the last 5 decades. The impacts of changes done earlier have probably been stabilized and the wetland ecosystem will be close to reaching some new equilibrium that may represent a high quality wetland.

1a1. Upstream watershed > 12% impervious.	Yes: go to Q.2
1a2. Wetland is ditched and water flow is not obstructed.	Yes: go to Q.2
1a3. Wetland has been graded, filled, logged.	Yes: go to Q.2
1a4. Water in wetland is controlled by dikes, weirs, etc.	Yes: go to Q.2
1a5. Wetland is grazed.	Yes: go to Q.2
1a6. Other indicators of disturbance (list below)	Yes: go to Q.2
	No: go to 1b.

1b Are there populations of non-native plants which are currently present, cover more than 10% of the wetland, and appear to be invading native populations? Briefly describe any non-native plant populations and Information source(s):_____	YES: go to Q.2 No: go to 1c.
1c. Is there evidence of human-caused disturbances which have visibly degraded water quality. Evidence of the degradation of water quality include: direct (untreated) runoff from roads or parking lots; presence, or historic evidence, of waste dumps; oily sheens; the smell of organic chemicals; or lifestock use. Briefly describe:	YES: go to Q.2 NO: Possible Cat. I contact DNR
Q.2. Irreplaceable Ecological Functions: Does the wetland: ⊕ have at least 1/4 acre of organic soils deeper than 16 inches and the wetland is relatively undisturbed; OR *[If the answer is NO because the wetland is disturbed briefly describe:* Indicators of disturbance may include: - Wetland has been graded, filled, logged; - Organic soils on the surface are dried-out for more than half of the year; - Wetland receives direct stormwater runoff from urban or agricultural areas.]; OR	(NO to all: go to Q.3) YES go to 2a
⊕ have a forested class greater than 1 acre; OR	YES: Go to 2b
⊕ have characteristics of an estuarine system; OR	YES: Go to 2c
⊕ have eel grass, floating or non-floating kelp beds?	YES: Go to 2d
2a. Bogs and Fens Are any of the three following conditions met for the area of organic soil?	
2a.1. Are Sphagnum mosses a common ground cover (>30%) and the cover of invasive species (see Table 3) is less than 10%?	
Is the area of sphagnum mosses and deep organic soils > 1/2 acre? Is the area of sphagnum mosses and deep organic soils 1/4-1/2 acre?	YES: Category I YES: Category II
	NO: Go to 2a.3
2a.2. Is there an area of organic soil which has an emergent class with at least one species from Table 2, and cover of invasive species is < 10% (see Table 3)?	
Is the area of herbaceous plants and deep organic soils > 1/2 acre? Is the area of herbaceous plants and deep organic soils 1/4-1/2 acre?	YES: Category I YES: Category II
	NO: Go to 2a.3

2a.3. Is the vegetation a mixture of only herbaceous plants and Sphagnum mosses with no scrub/shrub or forested classes? Is the area of herbaceous plants, Sphagnum, and deep organic soils > 1/2 acre? Is the area of herbaceous plants, Sphagnum, and deep organic soils 1/4-1/2 acre?	 YES: Category I YES: Category II NO: Go to Q.3.
Q.2b. Mature forested wetland. 2b.1. Does 50% of the cover of upper forest canopy consist of evergreen trees older than 80 years or deciduous trees older than 50 years? *Note:* The size of trees is often not a measure of age, and size cannot be used as a surrogate for age (see guidance). 2b.2. Does 50% of the cover of forest canopy consist of evergreen trees older than 50 years, AND is the structural diversity of the forest high as characterized by an additional layer of trees 20'-49' tall, shrubs 6' - 20', tall, and a herbaceous groundcover? 2b.3. Does < 25% of the areal cover in the herbaceous/groundcover or the shrub layer consist of invasive/exotic plant species from the list on p. 19?	 YES: Category I NO: Go to 2b.2 YES: Go to 2b.3 NO: Go to Q.3 YES: Category I NO: Go to Q.3
Q.2c. Estuarine wetlands. 2c1. Is the wetland listed as National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park, or Educational, Environmental or Scientific Reserves designated under WAC 332-30-151? . . . . . 2c.2. Is the wetland > 5 acres; . . . . . . *Note:* If an area contains patches of salt tolerant vegetation that are 1) less than 600 feet apart and that are separated by mudflats that go dry on a Mean Low Tide, or 2) separated by tidal channels that are less than 100 feet wide; all the vegetated areas are to be considered together in calculating the wetland area. or is the wetland 1-5 acres; . . . . . . or is the wetland < 1 acre?.	 YES: Category I NO: Go to 2c.2 YES: Category I YES: Go to 2c.3 YES: Go to 2c.4

2c.3. Does the wetland meet at least 3 of the following 4 criteria: . . . . . - minimum existing evidence of human related disturbance such as diking, ditching, filling, cultivation, grazing or the presence of non-native plant species (see guidance for definition); - surface water connection with tidal saltwater or tidal freshwater; - at least 75% of the wetland has a 100' buffer of ungrazed pasture, open water, shrub or forest; - has at least 3 of the following features: low marsh; high marsh; tidal channels; lagoon(s);woody debris; or contiguous freshwater wetland.	YES: Category I NO: Category II
2c.4. Does the wetland meet all of the four criteria under 2c3. (above)?. .	YES: Category II NO: Category III
Q.2d. Eel Grass and Kelp Beds. 2d.1. Are eel grass beds present?.	YES: Category I NO: go to 2d.2
2d.2. Are there floating or non-floating kelp bed(s) present with greater than 50% macro algal cover in the month of August or September?	YES: Category I NO: Category II
Q.3. Category IV wetlands. 3a. Is the wetland: less than 1 acre and, hydrologically isolated and, comprised of one vegetated class that is dominated (> 80% areal cover) by one species from Table 3 (page 19) or Table 4 (page 20)	YES: Category IV NO: go to 3b
3b. Is the wetland: less than two acres and, hydrologically isolated, with one vegetated class, and > 90% of areal cover is any combination of species from Table 3 (page 19)	YES: Category IV NO: go to 3c
3c. Is the wetland excavated from upland and a pond smaller than 1 acre without a surface water connection to streams, lakes, rivers, or other wetland, and has < 0.1 acre of vegetation.	YES: Category IV NO: go to Q.4

Q.4. Significant habitat value.

Answer all questions and enter data requested.

4a. Total wetland area

Estimate area, select from choices in the *near-right column*, and score in the far column:

Enter acreage of wetland here: >1 acres, and source: On-site estimate

Circle scores that qualify

acres	points
> 200	6
40- 200	5
10 - 40	4
5 - 10	3
1 - 5	2
0.1 - 1	1
< 0.1	0

2

4b. Wetland classes: Circle the wetland classes below that qualify:

Open Water: if the area of open water is > 1/4 acre

Aquatic Beds: if the area of aquatic beds > 1/4 acre,

Emergent: if the area of emergent class is > 1/4 acre, ✓

Scrub-Shrub: if the area of scrub-shrub class is > 1/4 acre,

Forested: if area of forested class is > 1/4 acre, ✓

Add the number of wetland classes, above, that qualify, and then score according to the columns at right.

e.g. If there are 4 classes (aquatic beds, open water, emergent & scrub- shrub), you would circle 8 points in the far right column.

# of classes	Points
1	0
2	3
3	6
4	8
5	10

3

4c. Plant species diversity.

For each wetland class (at right) that qualifies in 4b above, count the number of different plant species you can find that cover more than 5% of the ground. You do not have to name them.

Score in column at far right:

e.g. If a wetland has an aquatic bed class with 3 species, an emergent class with 4 species and a scrub-shrub class with 2 species you would circle 2, 2, and 1 in the far column.

Note: Any plant species with a cover of > 5% qualifies for points within a class, even those that are not of that class.

Class	# species in class	Points
Aquatic Bed	1	0
	2	1
	3	2
	> 3	3
Emergent	1	0
	2-3	1
	4-5	2
	≥ 5	3
Scrub-Shrub	1	0
	2	1
	3-4	2
	> 4	3
Forested	1	0
	2	1
	3-4	2
	> 4	3

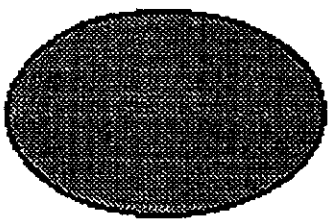
6 11

4d. Structural diversity.
If the wetland has a forested class, add 1 point if each of the following classes is present within the forested class and is larger than 1/4 acre:

-trees > 50' tall	YES - 1
-trees 20'- 49' tall	YES - 1
-shrubs	YES - 1
-herbaceous ground cover	YES - 1
Also add 1 point if there is any "open water" or "aquatic bed" class immediately next to the forested area (ie. there is no scrub/shrub or emergent vegetation between them).	YES - 1

4e. Decide from the diagrams below whether interspersion between wetland classes is high, moderate, low or none? If you think the amount of interspersion falls in between the diagrams score accordingly (i.e. a moderately high amount of insterspersion would score a 4, while a moderately low amount would score a 2)

High - 5
Moderate - 3
Low - 1
None - 0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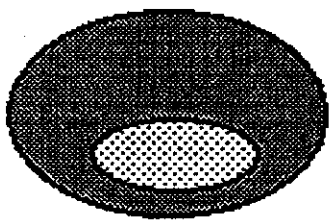
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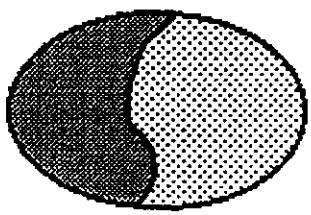
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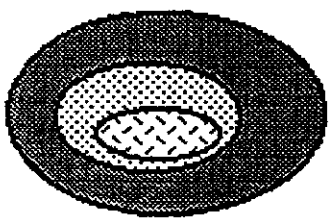
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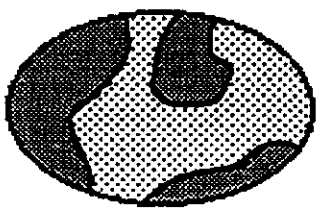
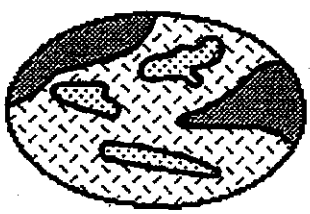

moderate


high

4f. Habitat features.
Answer questions below, circle features that apply, and score to right:

Is there evidence that the open or standing water was caused by beavers	YES = 2
Is a heron rookery located within 300'?	YES = 1
Are raptor nest/s located within 300'?	YES = 1
Are there at least 3 standing dead trees (snags) per acre greater than 10" in diameter at "breast height" (DBH)?.	YES = 1
Are there at least 3 downed logs per acre with a diameter > 6" for at least 10' in length?	YES = 1
Are there areas (vegetated or unvegetated) within the wetland that are ponded for at least 4 months out of the year, and the wetland has not qualified as having an open water class in Question 4b. ?	YES = 2

4g. Connection to streams. (Score one answer only.) 4g.1. Does the wetland provide habitat for fish at any time of the year AND does it have a perennial surface water connection to a fish bearing stream.	YES = 6
4g.2 Does the wetland provide fish habitat seasonally AND does it have a seasonal surface water connection to a fish bearing stream.	YES = 4
4g.3 Does the wetland function to export organic matter through a surface water connection at all times of the year to a perennial stream.	YES = 4 3
4g.4 Does the wetland function to export organic matter through a surface water connection to a stream on a seasonal basis?	YES = 2 3
4h. Buffers. Score the existing buffers on a scale of 1-5 based on the following four descriptions. If the condition of the buffers do not exactly match the description, score either a point higher or lower depending on whether the buffers are less or more degraded.	
Forest, scrub, native grassland or open water buffers are present for more than 100' around 95% of the circumference.	Score = 5
Forest, scrub, native grassland, or open water buffers wider than 100' for more than 1/2 of the wetland circumference, or a forest, scrub, grasslands, or open water buffers for more than 50' around 95% of the circumference.	Score = 3
Forest, scrub, native grassland, or open water buffers wider than 100' for more than 1/4 of the wetland circumference, or a forest, scrub, native grassland, or open water buffers wider than 50' for more than 1/2 of the wetland circumference.	Score = 2
No roads, buildings or paved areas within 100' of the wetland for more than 95% of the wetland circumference.	Score = 2
No roads, buildings or paved areas within 25' of the wetland for more than 95% of the circumference, or No roads buildings or paved areas within 50' of the wetland for more than 1/2 of the wetland circumference.	Score = 1
Paved areas, industrial areas or residential construction (with less than 50' between houses) are less than 25 feet from the wetland for more than 95% of the circumference of the wetland.	Score = 0 2

5

4i. Connection to other habitat areas: Select the description which best matches the site being evaluated. -Is the wetland connected to, or part of, a riparian corridor at least 100' wide connecting two or more wetlands; or, is there an upland connection present >100' wide with good forest or shrub cover (>25% cover) connecting it with a Significant Habitat Area?	YES = 5
- Is the wetland connected to any other Habitat Area with either 1) a forested/shrub corridor < 100' wide, or 2) a a corridor that is > 100' wide, but has a low vegetative cover less than 6 feet in height?	YES = 3
-Is the wetland connected to, or a part of, a riparian corridor between 50 - 100' wide with scrub/shrub or forest cover connection to other wetlands?	YES = 3
- Is the wetland connected to any other Habitat Area with narrow corridor (<100') of low vegetation (< 6' in height)?	YES = 1
- Is the wetland and its buffer (if the buffer is less than 50' wide) completely isolated by development (urban, residential with a density greater than 2/acre, or industrial)?	YES = 0
Now add the scores circled (for Q.5a - Q.5i above) to get a total. 20 **Is the Total greater than or equal to 22 points?**	**YES = Category II** **NO = Category III**

Wetlands Rating Field Data Form

Background Information:

Name of Rater: E. Binney Affiliation: ATST Date: 17 April 05 - field 24 March 05

Name of wetland (if known): PFOC (2)

Government Jurisdiction of wetland: Skagit Co, WSDOE, COE

Location: 1/4 Section: _____ of 1/4 S: _____ Section: 12 Township: 35N Range: 6E

Sources of Information: (Check all sources that apply)

Site visit: ✓ USGS Topo Map: ✓ NWI map: ___ Aerial Photo: ✓ Soils survey: ✓

Other: ___ Describe: _____

When The Field Data form is complete enter Category here: III

Q.1. High Quality Natural Wetland

Circle Answers

Answer this question if you have adequate information or experience to do so. If not find someone with the expertise to answer the questions. Then, if the answer to questions 1a, 1b and 1c are all NO, contact the Natural Heritage program of DNR.

1a. Human caused disturbances.

Is there significant evidence of human-caused changes to topography or hydrology of the wetland as indicated by any of the following conditions? Consider only changes that may have taken place in the last 5 decades. The impacts of changes done earlier have probably been stabilized and the wetland ecosystem will be close to reaching some new equilibrium that may represent a high quality wetland.

1a1. Upstream watershed > 12% impervious.	Yes: go to Q.2
1a2. Wetland is ditched and water flow is not obstructed.	Yes: go to Q.2
1a3. Wetland has been graded, filled, logged. > 10 yrs ago	Yes: go to Q.2
1a4. Water in wetland is controlled by dikes, weirs, etc.	Yes: go to Q.2
1a5. Wetland is grazed.	Yes: go to Q.2
1a6. *Other indicators* of disturbance (list below)	Yes: go to Q.2
	No: go to 1b.

_____

_____

_____

_____

1b Are there populations of non-native plants which are currently present, cover more than 10% of the wetland, and appear to be invading native populations? Briefly describe any non-native plant populations and Information source(s):_____	YES: go to Q.2 No: go to 1c.
1c. Is there evidence of human-caused disturbances which have visibly degraded water quality. Evidence of the degradation of water quality include: direct (untreated) runoff from roads or parking lots; presence, or historic evidence, of waste dumps; oily sheens; the smell of organic chemicals; or lifestock use. Briefly describe:	YES: go to Q.2 NO: Possible Cat. I contact DNR
Q.2. Irreplaceable Ecological Functions: Does the wetland: ⊕ have at least 1/4 acre of organic soils deeper than 16 inches and the wetland is relatively undisturbed; OR [IIf the answer is NO because the wetland is disturbed briefly describe: Indicators of disturbance may include: - Wetland has been graded, filled, logged; - Organic soils on the surface are dried-out for more than half of the year; - Wetland receives direct stormwater runoff from urban or agricultural areas.]; OR	(NO to all: go to Q.3) YES go to 2a
⊕ have a forested class greater than 1 acre; ? < 1 acre OR	YES: Go to 2b
⊕ have characteristics of an estuarine system; OR	YES: Go to 2c
⊕ have eel grass, floating or non-floating kelp beds?	YES: Go to 2d
2a. Bogs and Fens Are any of the three following conditions met for the area of organic soil? 2a.1. Are Sphagnum mosses a common ground cover (>30%) and the cover of invasive species (see Table 3) is less than 10%?	
Is the area of sphagnum mosses and deep organic soils > 1/2 acre? Is the area of sphagnum mosses and deep organic soils 1/4-1/2 acre?	YES: Category I YES: Category II
	NO: Go to 2a.3
2a.2. Is there an area of organic soil which has an emergent class with at least one species from Table 2, and cover of invasive species is < 10% (see Table 3)?	
Is the area of herbaceous plants and deep organic soils > 1/2 acre? Is the area of herbaceous plants and deep organic soils 1/4-1/2 acre?	YES: Category I YES: Category II
	NO: Go to 2a.3

2a.3. Is the vegetation a mixture of only herbaceous plants and Sphagnum mosses with no scrub/shrub or forested classes? Is the area of herbaceous plants, Sphagnum, and deep organic soils > 1/2 acre? Is the area of herbaceous plants, Sphagnum, and deep organic soils 1/4-1/2 acre?	 YES: Category I YES: Category II NO: Go to Q.3.
Q.2b. Mature forested wetland. 2b.1. Does 50% of the cover of upper forest canopy consist of evergreen trees older than 80 years or deciduous trees older than 50 years? *Note:* The size of trees is often not a measure of age, and size cannot be used as a surrogate for age (see guidance). 2b.2. Does 50% of the cover of forest canopy consist of evergreen trees older than 50 years, AND is the structural diversity of the forest high as characterized by an additional layer of trees 20'-49' tall, shrubs 6' - 20', tall, and a herbaceous groundcover? 2b.3. Does < 25% of the areal cover in the herbaceous/groundcover or the shrub layer consist of invasive/exotic plant species from the list on p. 19?	 YES: Category I NO: Go to 2b.2 YES: Go to 2b.3 NO: Go to Q.3 YES: Category I NO: Go to Q.3
Q.2c. Estuarine wetlands. 2c1. Is the wetland listed as National Wildlife Refuge, National Park, National Estuary Reserve, Natural Area Preserve, State Park, or Educational, Environmental or Scientific Reserves designated under WAC 332-30-151? . . . . . 2c.2. Is the wetland > 5 acres; . . . . . . *Note:* If an area contains patches of salt tolerant vegetation that are 1) less than 600 feet apart and that are separated by mudflats that go dry on a Mean Low Tide, or 2) separated by tidal channels that are less than 100 feet wide; all the vegetated areas are to be considered together in calculating the wetland area. or is the wetland 1-5 acres; . . . . . . or is the wetland < 1 acre?.	 YES: Category I NO: Go to 2c.2 YES: Category I YES: Go to 2c.3 YES: Go to 2c.4

2c.3. Does the wetland meet at least 3 of the following 4 criteria: . . . . . - minimum existing evidence of human related disturbance such as diking, ditching, filling, cultivation, grazing or the presence of non-native plant species (see guidance for definition); - surface water connection with tidal saltwater or tidal freshwater; - at least 75% of the wetland has a 100' buffer of ungrazed pasture, open water, shrub or forest; - has at least 3 of the following features: low marsh; high marsh; tidal channels; lagoon(s);woody debris; or contiguous freshwater wetland.	YES: Category I NO: Category II
2c.4. Does the wetland meet all of the four criteria under 2c3. (above)?. .	YES: Category II NO: Category III
Q.2d. Eel Grass and Kelp Beds. 2d.1. Are eel grass beds present?.	YES: Category I NO: go to 2d.2
2d.2. Are there floating or non-floating kelp bed(s) present with greater than 50% macro algal cover in the month of August or September?	YES: Category I NO: Category II
Q.3. Category IV wetlands. 3a. Is the wetland: less than 1 acre and, hydrologically isolated and, comprised of one vegetated class that is dominated (> 80% areal cover) by one species from Table 3 (page 19) or Table 4 (page 20)	YES: Category IV NO: go to 3b
3b. Is the wetland: less than two acres and, hydrologically isolated, with one vegetated class, and > 90% of areal cover is any combination of species from Table 3 (page 19)	YES: Category IV NO: go to 3c
3c. Is the wetland excavated from upland and a pond smaller than 1 acre without a surface water connection to streams, lakes, rivers, or other wetland, and has < 0.1 acre of vegetation.	YES: Category IV NO: go to Q.4

Q.4. Significant habitat value.

Answer all questions and enter data requested.

4a. Total wetland area

Estimate area, select from choices in the near-right column, and score in the far column:

Enter acreage of wetland here: <1 acres, and source: on-site estimate

Circle scores that qualify

acres	points
> 200	6
40- 200	5
10 - 40	4
5 - 10	3
1 - 5	2
(0.1 - 1)	(1)
< 0.1	0

\

4b. Wetland classes: Circle the wetland classes below that qualify:

Open Water: if the area of open water is > 1/4 acre

Aquatic Beds: if the area of aquatic beds > 1/4 acre,

Emergent: if the area of emergent class is > 1/4 acre,

Scrub-Shrub: if the area of scrub-shrub class is > 1/4 acre,

Forested: if area of forested class is > 1/4 acre, ✓

Add the number of wetland classes, above, that qualify, and then score according to the columns at right.

e.g. If there are 4 classes (aquatic beds, open water, emergent & scrub- shrub), you would circle 8 points in the far right column.

# of classes	Points
(1)	(0)
2	3
3	6
4	8
5	10

0

4c. Plant species diversity.

For each wetland class (at right) that qualifies in 4b above, count the number of different plant species you can find that cover more than 5% of the ground. You do not have to name them.

Score in column at far right:

e.g. If a wetland has an aquatic bed class with 3 species, an emergent class with 4 species and a scrub-shrub class with 2 species you would circle 2, 2, and 1 in the far column.

Note: Any plant species with a cover of > 5% qualifies for points within a class, even those that are not of that class.

Class	# species in class	Points
Aquatic Bed	1	0
	2	1
	3	2
	> 3	3
Emergent	1	0
	2-3	1
	4-5	2
	> 5	3
Scrub-Shrub	1	0
	2	1
	3-4	2
	> 4	3
Forested	1	0
	2	1
	3-4	2
	(> 4)	(3)

3 4

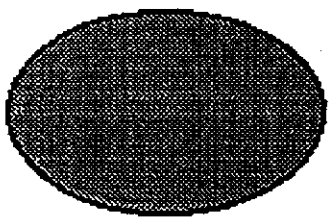
4d. Structural diversity.
If the wetland has a forested class, add 1 point if each of the following classes is present within the forested class and is larger than 1/4 acre:
-trees > 50' tall . . . . . YES - 1
-trees 20'- 49' tall . . . . . YES - 1
-shrubs. . . . . YES - 1
-herbaceous ground cover. . . . . YES - 1
Also add 1 point if there is any "open water" or "aquatic bed" class immediately next to the forested area (ie. there is no scrub/shrub or emergent vegetation between them). YES - 1

4

4e. Decide from the diagrams below whether interspersion between wetland classes is high, moderate, low or none? If you think the amount of interspersion falls in between the diagrams score accordingly (i.e. a moderately high amount of insterspersion would score a 4, while a moderately low amount would score a 2)

High - 5
Moderate - 3
Low - 1
None - 0

0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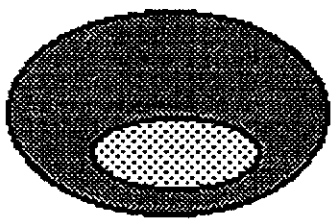
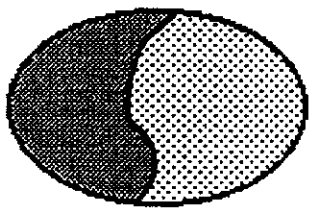

low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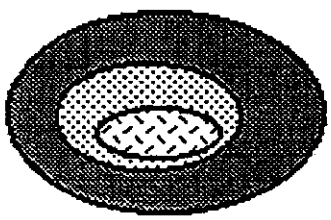
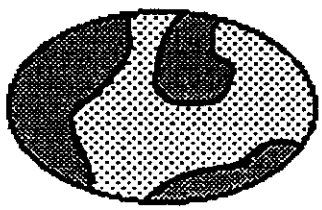
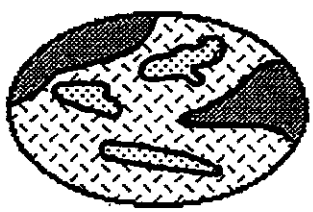

moderate


moderate


high

4f. Habitat features.
Answer questions below, circle features that apply, and score to right:

Is there evidence that the open or standing water was caused by beavers — YES = 2
Is a heron rookery located within 300'? — YES = 1
Are raptor nest/s located within 300'? — YES = 1
Are there at least 3 standing dead trees (snags) per acre greater than 10" in diameter at "breast height" (DBH)?. — YES = 1
Are there at least 3 downed logs per acre with a diameter > 6" for at least 10' in length? — YES = 1
Are there areas (vegetated or unvegetated) within the wetland that are ponded for at least 4 months out of the year, and the wetland has not qualified as having an open water class in Question 4b. ? — YES = 2

2

6

4g. Connection to streams. (Score one answer only.) 4g.1. Does the wetland provide habitat for fish at any time of the year AND does it have a perennial surface water connection to a fish bearing stream.	YES = 6
4g.2 Does the wetland provide fish habitat seasonally AND does it have a seasonal surface water connection to a fish bearing stream.	YES = 4
4g.3 Does the wetland function to export organic matter through a surface water connection at all times of the year to a perennial stream.	YES = 4
4g.4 Does the wetland function to export organic matter through a surface water connection to a stream on a seasonal basis?	YES = 2 Ø
4h. Buffers. Score the existing buffers on a scale of 1-5 based on the following four descriptions. If the condition of the buffers do not exactly match the description, score either a point higher or lower depending on whether the buffers are less or more degraded.	
Forest, scrub, native grassland or open water buffers are present for more than 100' around 95% of the circumference.	Score = 5
Forest, scrub, native grassland, or open water buffers wider than 100' for more than 1/2 of the wetland circumference, or a forest, scrub, grasslands, or open water buffers for more than 50' around 95% of the circumference.	Score = 3
Forest, scrub, native grassland, or open water buffers wider than 100' for more than 1/4 of the wetland circumference, or a forest, scrub, native grassland, or open water buffers wider than 50' for more than 1/2 of the wetland circumference.	Score = 2
No roads, buildings or paved areas within 100' of the wetland for more than 95% of the wetland circumference.	Score = 2
No roads, buildings or paved areas within 25' of the wetland for more than 95% of the circumference, or No roads buildings or paved areas within 50' of the wetland for more than 1/2 of the wetland circumference.	Score = 1
Paved areas, industrial areas or residential construction (with less than 50' between houses) are less than 25 feet from the wetland for more than 95% of the circumference of the wetland.	Score = 0 5

5

4i. Connection to other habitat areas: Select the description which best matches the site being evaluated. -Is the wetland connected to, or part of, a riparian corridor at least 100' wide connecting two or more wetlands; or, is there an upland connection present >100' wide with good forest or shrub cover (>25% cover) connecting it with a Significant Habitat Area?	YES = 5
- Is the wetland connected to any other Habitat Area with either 1) a forested/shrub corridor < 100' wide, or 2) a a corridor that is > 100' wide, but has a low vegetative cover less than 6 feet in height?	> 4 YES = 3
-Is the wetland connected to, or a part of, a riparian corridor between 50 - 100' wide with scrub/shrub or forest cover connection to other wetlands?	YES = 3
- Is the wetland connected to any other Habitat Area with narrow corridor (<100') of low vegetation (< 6' in height)?	YES = 1
- Is the wetland and its buffer (if the buffer is less than 50' wide) completely isolated by development (urban, residential with a density greater than 2/acre, or industrial)?	YES = 0
Now add the scores circled (for Q.5a - Q.5i above) to get a total. 19 **Is the Total greater than or equal to 22 points?**	**YES = Category II** **NO = Category III**