BIOLOGICAL ASSESSMENT

FOR THE

POINT NO POINT
DRAINAGE IMPROVEMENT PROJECT

HANSVILLE

Kitsap County, Washington

Prepared For:

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INDEX

	PAGE
SUMMARY	1
INTRODUCTION	2
SETTING	3
PROJECT DESCRIPTION	3
Action Area	5
Environmental Baseline	6
DESCRIPTION OF HABITAT AND SPECIES	6
Wetlands	6
Water Resources	7
Vegetation	8
Species Occurrence	8
Bald Eagle Occurrence	8
Chinook Salmon Occurrence	8
Steller Sea Lion Occurrence	9
Bull Trout Occurrence	9
Proposed Critical Habitat	9
Candidate Species	10
Coho Occurrence	10
Species of Concern	10
Species of Concern-Bats	10
Species of Conern-Peregrine Falcon	10
POTENTIAL IMPACTS AND EFFECTS OF PROPOSED PROJECT	11
Direct Impacts	11
Indirect Effects	11
Interrelated and Interdependent Effects	11
Cumulative Effects	12
Recovery or Management Plans	12
EFFECT DETERMINATIONS FOR LISTED AND PROPOSED SPECIES	13
Bald Eagle	13
Anadromous Fish	13
Disturbance	13
Water Quality	13
Habitat	14
Hydrodynamics	14
Proposed Critical Habitat-Chinook	14
Humpback Whale	14
Steller Sea Lion	15
Leatherback Sea Turtle	15

Index, continued

Potential Impacts to Candidate Species and Species of Concern 15
Candidate Species 15
Species of Concern-Bats 15
Species of Concern-Peregrine Falcon 15
Jeopardy or Take 15

CONSERVATION MEASURES 15

RECOMMENDATIONS 16

CONCLUSIONS 16

REFERENCES 18

APPENDICES
Appendix A- Vicinity Map, Project Plans, and Flood Analysis
Appendix B- Letters from USFWS, DNR, and WDFW and List from NMFS
Appendix C- Project Photos
Appendix D- Environmental Baseline Charts
Appendix E- Point No Point Reports
Vanbianchi, August 1991
Harper, October 1998

Kitsap County Department of Public Works
Surface Water Management Division
Point No Point Drainage Improvements Project

Biological Assessment
for
Bald Eagle (*Haliaeetus leucocephalus*)
Chinook salmon (*Oncorhynchus tshawytscha*)
Bull trout (*Salvelinus confluentus*)
Steller Sea Lion (*Eumetopias jubatus*)
Humpback whale (*Megatera novaengliae*)
Leatherback Sea turtle (*Dermochelys coriacea*)

SUMMARY

Kitsap County Department of Public Works, Surface Water Management Division, is proposing to alleviate flooding along Point No Point Road by replacing the existing tide gate and outlet culvert on the east side of the Point No Point Wetland in Hansville, Kitsap County, Washington. The project lies in the NW ¼ of the NE¼ of Section 22, Township 28 N, R 2 East of the Willamette Meridian (See Appendix A-1 through A-3). The Point No Point Wetland is the terminus for all streams and drainages east and south of Hansville and outlets via a main stream channel, which was historically ditched, to a tide gate under a beach berm. The tide gate outlet culvert currently extends into Puget Sound below mean higher high water and the new pipe will extend about 20 feet beyond the end of the existing pipe. The Point No Point Wetland is bordered by single family homes (north of Point No Point Road), existing Coast Guard Lighthouse (north), steep upland bluff (south) and open pasture (also south). Single family development is also located at the top of the upland bluff and sporadically throughout the open pasture. The project proposes to increase the capacity of the outlet by increasing the size of the outlet pipe and replace the malfunctioning tide gate with a new, well functioning tide gate to alleviate flooding of roads and homes along Point No Point.

The effect determination for the listed species in the vicinity of this project is as follows:

Bald eagle	May affect, not likely to adversely affect
Chinook salmon	No effect
Bull trout	No effect
Steller sea lion	May affect, not likely to adversely affect
Humpback whale	No effect
Leatherback Sea turtle	No effect

Coho salmon is a candidate for ESA listing by National Marine Fisheries Service. The proposed increased outlet size from the Point No Point Wetland will not have an overall affect on the use of this area by the above species because it does not propose to change or impact the existing natural areas. Replacement of the tide gate and existing outlet pipes will occur in the existing location and will entail removal of material in the beach berm and improvement of an existing trail (along top of beach berm) to access the construction area. It will also not affect the upstream portions of the wetland system or its use by potential endangered or threatened species.

INTRODUCTION

An endangered species listing was received for this project from the US Fish and Wildlife Service on January 18, 2000. The letter indicated that the following species might occur in the vicinity of the project area (Appendix B-1).

Name	Scientific Name	Federal Status	State Status
Bald Eagle	*Haliaeetus leucocephalus*	Threatened	Threatened
Bull trout	*Salvelinus confluentus*	Threatened	Priority
Long-eared myotis	*Myotis evotis*	Species of Concern	
Long-legged myotis	*Myotis volans*	Species of Concern	
Peregrine falcon	*Falco peregrinus*	Species of Concern	

The National Oceanic and Atmospheric Administration, National Marine Fisheries Service Website (Appendix B-2) was viewed and the following species occur in the vicinity of this project and include:

Name	Scientific Name	ESU	Federal Status	State Status
Coho salmon	*Oncorhynchus kisutch*	Puget Sound/Strait of Georgia	Candidate	
Chinook salmon	*Oncorhynchus tshawytscha*	Puget Sound	Threatened	Candidate
Steller sea lion	*Eumetopias jubatus*	Puget Sound	Endangered	Threatened
humpback whale	*Megatera novaengliae*	Puget Sound	Endangered	Endangered
leatherback sea turtle	*Dermochelys coriacea*	Puget Sound	Endangered	Endangered

The Washington State Department of Fish and Wildlife indicates the presence of bald eagle breeding occurrence within and south of the Point No Point wetland (Appendix B-3). The Priority Habitat and Species map indicates that the Point No Point wetland is a coastal salt marsh, salt meadows, and brackish marsh. The wetland is composed of both estuarine and palustrine wetland communities.

The Washington State Department of Natural Resources, Natural Heritage Program reports the occurrence of several plant species known to occur in Kitsap County (Appendix B-4). These species include Pink sandverbena (*Abronia umbellata, ssp acutalata*); water star-grass (*Heteranthera dubia*); floating water pennywort (*Hydrocotyle ranunculoides*); bog clubmoss (*Lycopodium inundata*); Western yellow oxalis (*Oxalis suksdorfii*); Alaska alkaligrass (*Puccinellia nutkaensis*); and Chain-fern (*Woodwardia fimbriata*). Pink sandverbena is thought to be extirpated in Kitsap County and is listed on the federal list as a species of concern. Water star grass and floating water pennywort are state listed as review and bog clubmoss; western yellow oxalis, Alaska alkaligrass, and chain fern are state listed as sensitive.

Several visits were made to the Point No Point Wetland to observe the project area and identify any listed plant or animal species. These visits were made during the late winter (January 14, 2000, February 28, 2000, March 15, 2000). None of the listed animal species were identified in this wetland

system but chinook salmon, coho salmon, and bald eagle occur in the vicinity and are frequent users of this portion of Puget Sound. Two separate studies were conducted concerning the vegetative cover and boundary of the Point No Point Wetland. Ron Vanbianchi of Pacific Wetland Nursery conducted the first study for the Hansville Chamber of Commerce in August 1991. This study included identification of plant communities, soil types and hydrologic regime as well as wildlife usage and functional values. Kim Harper of Sheldon and Associates conducted the second study in October 1998 for the Trust for Public Lands as part of the acquisition process for Kitsap County Parks. This study is essentially a wetland analysis report conducted as part of the wetland delineation and includes some of the same material as the Vanbianchi report but provides updated information. Both reports were used in preparing this report and are included in Appendix E for easy reference.

SETTING

The project area lies east of the Hansville community at the end of Point No Point Road and is situated between single family development and Coast Guard Lighthouse to the north, upland bluff and pasture to the south and single family homes to the west. Puget Sound lies immediately east of the project and within 100 feet north of the project. Kitsap County Parks Department obtained the lighthouse facility and a large portion of the Point No Point Wetland and it is frequently used by tourists and residents of Kitsap County. The beach berm and beach on the east side represent the major area to be impacted by the project. The berm is currently used as a trail that originates at the lighthouse and extends south to the upland bluff. A set of stairs leads down the bluff and allows access to the beach and trail from residences located at the top of the bluff. The beach is frequently used by residents and tourists who enjoy beach combing. Private beach and the bluff extend for a significant distance (nearly halfway to Eglon) to the south with homes situated at the top of the bluff.

PROJECT DESCRIPTION

Point No Point is situated at the base of an unnamed stream that flows north through the middle of Section 22 and enters the wetland at its west end. The wetland itself extends west along Point No Point Road and is also fed by seepage from the steep bluff at its west end. During severe winter storm events and simultaneous high tides, the wetland floods and backs up onto Point No Point Road and homes along the road. At extremely high tides flooding occurs into the Hansville community. Flooding is partially caused by the undersized pipe and improperly functioning tide gate that outlets at the east end of the system. The tide gate allows the regular flow of saltwater into the wetland during tidal ebb and flow and does not facilitate effective drainage of the excess stormwater from the wetland. The proposed project will entail improving an existing 12-foot wide trail from the lighthouse to the tide gate and excavation of beach berm to facilitate removal and replacement of the existing tide gate and culvert. The tide gate and culvert will be increased in diameter from 18 inches to 42 inches and the new culvert will be extended about 20 feet further from the end of the current culvert. The new pipe and tide gate will be constructed of butt fused high density Polyethylene culvert. The pipe will be secured to the shore by pipe anchors and an energy dissipater, which will consist of a 10'x14'x2' rip rap rock pad, will be constructed at the end of the pipe and buried under 2 feet of beach sand. Construction will take place only during low tide for the outfall and the new pipe will match the existing alignment and invert elevations. Vegetated areas, which mainly include beach grasses and shrubs, will be replanted once the new pipe and tide gate have been installed.

Construction activities associated with this project will be scheduled for the summer of 2000 in order to lessen the impact to fish and wildlife and a likely sequence of construction events will be:

1. Mobilization to the site.
2. Installation of erosion control measures and construction of silt fencing, where needed.
3. Grading and installing gravel to make existing beach berm trail stronger to facilitate movement of heavy equipment.
4. Excavate area of beach berm for installation of new tide gate and ductile iron outlet pipe.
5. Installation of tide gate and pipe to shore during low tide with energy dissipater and debris barrier.
6. Replacement of material over newly installed tide gate.
7. Replacement of vegetation and driftwood on beach berm and demobilization.

The only secondary feature of this project is upgrade of the existing beach berm trail to facilitate movement of heavy equipment from lighthouse area to project area, which will entail installation of 6 inch thick crushed rock surface to create a 12 foot wide equipment path across the wide berm top. Staging areas will include the existing, upgraded access via the beach berm and excavated material will likely be stockpiled on the upgraded portion of the beach berm to reduce impacts to un-impacted portions of the berm. The project has been designed to limit the stockpiling of material to very short periods of time in areas immediately adjacent to the existing pipe alignment. Once the old tide gate and portions of the pipe have been removed and the new pipe installed, the material will be immediately replaced. There will be no need for detours, replacement/relocation of utility lines, safety clearing, work trestles, and temporary work bridges. The existing pipe will be removed from the site and properly demolished and disposed of in an approved disposal facility or will be recycled.

Types of construction equipment to be used on this project will consist of the typical equipment used for all road construction projects. Use of this equipment will cause a short-term increase in noise level and air emissions in the project area. Construction equipment used will meet or exceed air quality standards and will be muffled as required for the type of equipment used. Likely construction equipment will include:

1. Excavator
2. Backhoe
3. Trucks to haul equipment and construction materials and materials removed from the project area (cleared vegetation)

The vegetation removal along this project will be limited to existing vegetated portions of the access route and across the area in which the tide gate and outlet pipe will be installed. The vegetation is dominated by common beach grasses and thickets of Nootka rose (*Rosa nutkana*) and there are two small trees that will be removed across the tide gate/outlet pipe area. The only wetland identified in this area is the Point No Point Wetland and there are no direct impacts proposed to this system. The conveyance of excess water during storm events will not have a significant adverse impact on the wetland because it will only occur during storm events and the proper sizing of the outlet culvert will reduce the amount of time the excess water remains in this system.

BMPs for prevention of sedimentation and erosion during the construction period will include:

1. Work along the shoreline shall be conducted when tides are below the work area.
2. All exposed and un-worked soils, including soil stockpiles, shall be stabilized by suitable BMPs, which protect soil from the erosive forces of raindrop impact and flowing water. Applicable practices shall include but are not limited to vegetative establishment, mulching, plastic covering, and the early application of gravel base on areas to be paved. From October 1 to April 30, no soils shall remain un-stabilized for more than 2 days. From May 1 to September 30, no soils shall remain un-stabilized for more than 7 days.
3. Wherever construction vehicle access routes intersect park grounds, provisions must be made to minimize the transport of sediment (mud) onto the park grounds and Point No Point Road by use of appropriate BMPs such as a stabilized construction entrance. If sediment is transported onto a road surface, the roads shall be cleaned thoroughly at a minimum. At the end of each day, sediment shall be removed from roads by shoveling or sweeping and be transported to a controlled sediment disposal area. Street washing shall be allowed only after sediment is removed in this manner.
4. All temporary erosion and sediment control BMPs shall be removed within 30 days after final site stabilization is achieved or after the temporary BMPs are no longer needed. Trapped sediment shall be removed or stabilized on-site. Disturbed soil areas resulting from removal of temporary BMPs shall be permanently stabilized by seeding and/or mulching.
5. All disturbed areas and bare soil shall be permanently seeded with beach grasses along the berm and lawn grasses within the lawn portion of the County Park. Planting of Nootka rose may also be necessary to re-establish the shrub cover along the berm.
6. Construction of outfall in wetland shall be done in such a manner as to minimize disturbance.
7. Install filter fabric per Figure 3-9 of the Kitsap County Stormwater Design Manual, downslope of all grading activities outside of the tidal zone.

Construction for this project is expected to commence after June 15, 2000 and will take approximately 3 weeks since actual work will be scheduled to accommodate tidal flow. Actual work schedules will vary with low tides in order to work along the shoreline. There is no fish passage permitted via the existing tide gate so fish windows will be observed for Puget Sound, which will essentially entail low tide pipe/tide gate installation.

Action Area

The main goal of this project is to alleviate flooding along Point No Point Road and the associated single-family homes along the shoreline. The road is only slightly higher in elevation than most of the wetland and flooding is caused by surface water runoff entering from unnamed streams that flow from the developed areas to the south, with surface water directly flowing into the wetland from the homes to the north. There are also many seeps and springs that exit very steep slopes west of the Point No Point Wetland. Flooding is more severe during high tides when the malfunctioning tide gate allows more salt water into the wetland system. The project proposes to alleviate the flooding by increasing the size of the outlet pipe and replacing the tide gate so that it functions properly and prevents regular inflows of salt water. The increased outlet pipe will allow more water to move faster through the system and reduce flooding along Point No Point Road and in the adjacent developed areas. There will be no affect on areas south of the wetland because they slope up, steeply in some areas, and flow of water from these areas will remain not be influenced by the project. Therefore the action area is essentially the Point No Point Wetland, the lighthouse, Point No Point Road, and the single-family homes along the shoreline. The action area includes a small portion of Puget Sound as well, which

will be temporarily affected by pipe installation but only during low tide. None of the actions of this project will affect habitat areas for listed species as the construction will entail temporary intrusion into saltwater habitats and alleviation of flood conditions in developed areas.

Environmental Baseline

The environmental baseline was determined together for Point No Point Wetland and its associated stream using the Environmental Baseline Checklist (Appendix D). Neither Point No Point Wetland nor its associated stream have features to support fish or other species dependent on streams or wetlands. The presence of the tide gate at the end of the stream (and wetland) prevents passage of anadromous fish species into the upper or lower portions of the watershed. The stream channel has no riparian habitat and the wetland provides little in the way of off-channel rearing areas. There is no large woody debris within the stream or wetland and there are few areas or opportunities (there are woody areas west of the wetland but there is no clear way for large woody debris to reach the wetland because of the roads crossing the system), so the availability of refugia is limited. The wetland has the opportunity to protect water quality through filtration by the emergent vegetation but the unnamed stream lacks the opportunity to protect water quality because it receives a high amount of water from stormwater runoff, which carries significant amounts of sediments and pollutants, particularly during storm events. There is also a lack of shade to reduce temperatures and make conditions suitable for use by endangered, threatened or sensitive fish species, although the influx of tidal salt water can reduce the temperature of the water in the main channel. There is a high fluctuation in water levels within the stream and wetland, especially during storm events and high tides, which result in overtopping and flow of water onto Point No Point Road and the homes to the north. The wetland provides a wide floodplain, but it is often overloaded by excess water during storm events and high tides. The wetland represents an old pasture that has developed brackish conditions (east side) due to regular tidal influence through a failing tide gate. It was historically ditched and many of the ditches now provide habitat features for wading birds, such as great blue heron, and ducks. The environment of the wetland is suited to hunting by the bald eagle, which nest south of the wetland. They would use the tall trees along the upland bluff (south end) on which to perch and observe the available prey in the wetland and in Puget Sound off Point No Point.

DESCRIPTION OF HABITAT AND SPECIES

Wetlands

The Point No Point Wetland is the only wetland system that will be affected by the increased pipe size and installation of a new tide gate. It lies at a low elevation that is even below the mean higher high water of Puget Sound. Historically, it may have been a saltwater lagoon but as the beach sands washed in and humans built up the berm, the system flowed into Puget Sound via a narrow opening in the beach berm (Vanbianchi, 1991). The stream through the system, which originates to the south in Section 27, was channelized through the wetland before 1950 to promote drainage and its use as a livestock pasture and a tide gate was installed at the outlet to eliminate the flow of tidal salt water into the wetland. This ditching allowed cattle grazing year round, even during the winter months (Harper, 1998). After 1950, the main channel was maintained by blasting and a new tide gate was installed. Between 1965 and 1985 additional channels were cut which isolated the perennial stream from its original channel and directed it around much of the western portion, so that is now borders Point No Point Road. The stream continued to convey drainage into the channelized section created in the 1950's and presently drains out of the system via a circa 1950's tide gate (Vanbianchi, 1991). The

existing tide gate frequently malfunctions allowing salt water to once again enter the system and has created salt tolerant vegetative communities in the eastern half. The wetland is also fed by springs and seeps that originate on the slopes at the wetland's west end.

Presently, the wetland mostly consists of an emergent system with forested components along the south and west edges and patches of shrub vegetation throughout the wetland. The emergent community can be split into several different sub-communities by dominant vegetation and dominant vegetation communities. Much of the east half is dominated by salt tolerant species, including red top, saltgrass, and Pacific silverweed with smaller patches of saltmarsh bulrush. There is a large cattail community near the middle that represents the transition from mostly salt tolerant to mostly freshwater tolerant plant species. This area spans almost the entire distance of the south wetland boundary between Hillview Drive and the eastern boundary of the wetland. The extreme west half of the wetland is largely dominated by reed canary grass with patches of hardstem bulrush and cattail that abruptly transitions to red alder/salmonberry forest west of Hillview Drive. Nootka rose and Himalayan blackberry is dominant in patches along Point No Point Road and in areas along the existing ditches (Harper, 1998; Vanbianchi, 1991).

The salt tolerant communities lie mostly in the eastern half as that is the area most subjected to regular tidal influence through the existing tide gate. The ditch conveys saltwater to the western portion of the system and several side ditches convey it to the north and south. The transition from freshwater to saltwater communities is abrupt and evident by the change in vegetation. There are many invasive plant species along the northern edge of the system due to disturbances occurring along the road and at the nearby homes. Flooding occurs primarily along the ditch that borders Point No Point Road and north of the ditch where the road lies at its lowest. I observed that standing water was present almost to the top of the road when a normal tide was in and after a weekend of showery rainfall (2/28/00).

Water Resources

The stream that flows through Point No Point Wetland originates in the North ½ of Section 27, which is one full section or mile south of the Point No Point wetland. The watershed drains about approximately 440 acres of upland that consists of undeveloped forest, single family residences, and farmland. Currently, the stream flows downslope to the Point No Point wetland, enters a ditch west of Hillview Drive and through the ditched channel bordering Point No Point Road. Water also enters the system from hillside springs and seeps at the west end of the wetland, surface water runoff from surrounding developed areas, direct rainfall and tidal saltwater. Tidal saltwater enters from the east via the tide gate when it is left open by debris, overtopping of the beach berm during high storm surges and subsurface saltwater intrusion via the sandy berm also during high storm surges (Harper, 1998; Vanbianchi, 1991). These sources of saltwater have contributed to create a saltwater marsh that is at least partially affected by the ebb and flow of the tide as there are several areas along the main ditch where saltwater spreads and creates small pannes. The saltmarsh community extends to the south and west, with the western extent in close proximity to Point No Point Road and the southern portion extending nearly to the high-forested bluff.

According to Harper (1998) and Vanbianchi (1991), who's respective site visits were made in the late summer and early summer, revealed standing water to a depth of 24 inches in the southwestern portion of the wetland, with soil saturation occurring within 8 inches of the surface throughout most of the wetland. My January and February 2000 site visits also revealed standing water in the southwestern portion as well as in patchy panne areas immediately along the main ditch. Standing water was also present throughout the northwestern portion of the wetland (immediately along Point No Point Road)

and the water was at the same level within the side ditch north of the road (bordering the single-family development). The ditch along the road, through which the stream flows, was nearly to the top of its banks in both the freshwater and brackish water areas. I was able to observe saltwater flowing into the main ditch when it was at its fullest indicating a regular flow of water into the wetland during high tides.

Vegetation

The vegetation removed for this project will include several hundred feet of Nootka rose and assorted beach grasses to improve the existing access. Two scrub alders, about 15 feet tall and 6 to 10 inches diameter at breast height are located along the existing culvert alignment (east of the tide gate) and will be removed to facilitate construction. There is much driftwood along the east shore of Point No Point and some will require removal during excavation and replacement of soil materials. It is likely that the driftwood will be stockpiled and replaced through the project area as part of a restoration plan. See photos in Appendix C for vegetation conditions across the berm top.

Species Occurrence

Bald Eagle Occurrence

The PHS data lists the presence of bald eagle habitat in the Hansville/Point-No-Point area with an active nest along the shore south of Point-No-Point. Resident bald eagles occur in this area and they are frequently observed in Puget Sound but there is little indication that the eagles use the Point No Point Wetland. There are many perch trees along the bluff to the south that provide excellent habitat but there are few open water areas, and the wetland lacks significant usage by prey species for bald eagles. Vanbianchi (1991) reported "Based on the limited number of times bald eagles were observed using the wetland, it is unlikely that the wetland provides significant habitat for the nesting eagles." I found this statement to be accurate as I did not observe eagles perching along the bluff or flying over the wetland. I did observe what I believe may have been bald eagles flying over Puget Sound just offshore and east of Point No Point, but they did not fly over the wetland or the perch areas to the south.

Chinook salmon Occurrence

Chinook salmon (*Oncorhynchus tshawytscha*) is found along the Pacific Coast from the Ventura River in southern California to Point Hope, Alaska. Spawning adults are found in most of the larger streams of the Upper and Lower Columbia River drainage, coastal drainage, and Puget Sound drainage. Juvenile chinook salmon spend about a year in freshwater before smolting and migrating to the Pacific Ocean. Length of time spent in the ocean varies from 2 to 8 years. Adults spawn in coastal streams in late May and early June, with the principal spawning months occurring July through September. Fish from the early run are referred to as spring chinook and spawn in late summer. Fall chinook migrate upstream in August and September and spawn when spawning grounds are reached and when water temperatures are between 42 and 58 degrees Fahrenheit (Wydoski, Whitney, 1979). There are no potential rearing areas in the Point No Point Wetland as the wetland maintains a mostly saturated water regime except during high tides when water backs up into shallow pools and at the west end where standing water is choked by reed canary grass. There are also no apparent spawning areas within the associated stream because the stream has been ditched and there is no variation in elevation, substrate, or cover provided in any of the ditches. There is also limited access to the upper watershed due to confinement of the stream in the ditches along Point No Point and a possibly undersized culvert under Hillview Drive. Chinook salmon can be found in waters of Puget Sound, which border the north and east sides of Point No Point, but there is no habitat available within this wetland system. There will be

no effect on the habitat within Puget Sound because the work will be completed during low tides and there are no changes proposed to the beach elevation or substrate, during installation of the pipe, debris barrier and energy dissipater.

Steller Sea Lion Occurrence

The Steller sea lion (*Eumetopias jubatus*) occurs along the Pacific Coast from South Alaska and Aleutian and Pribilof Islands south to Southern California. They usually stay in water during poor weather but otherwise spend much time "hauled out" on rocky shores and will dive into the water if a boat approaches (Whitaker, 1980). The Steller sea lion is listed as threatened within Puget Sound and there are habitat areas throughout Puget Sound and the Strait of Juan De Fuca where they can haul out or fish. It is possible that they occur along the Point No Point shoreline, although this shoreline is heavily developed and lacks a rocky surface. The beach surface is mostly sand with small rocks and pebbles and is somewhat steep in areas. The project may affect the potential habitat areas along the Hansville shoreline during installation of the new pipe across the shore since it will occur during low tide, when a sea lion is most likely to lie on the beach. There will be no long-term impacts to the habitat and once construction is complete, this area will again be used by the Steller sea lion.

Bull Trout Occurrence

Bull Trout (*Salvelinus confluentus*) is found in the cold waters along the Pacific Coast from northern California to the Alaskan and Siberian shores of the Arctic Ocean. In Washington, this species is found in all major streams of the coastal drainage, Puget Sound and the Columbia River, although few streams and lakes have sizable numbers. Bull trout are found in cool waters of lakes and pools in streams and are anadromous in coastal areas. The anadromous bull trout spend most of the year in freshwater, migrating to the ocean in the spring and return in late summer and early fall. In some instances, the bull trout exhibit diurnal migration, spending the day in deep water and moving to shallower onshore waters at night (Wydoski, Whitney, 1979; Federal Register, November 1, 1999). Bull trout are primarily found on the west side of Hood Canal where cold, clear glacier water flows down from the Olympic Mountains via many streams and rivers. Steve Kalinowski, Habitat Biologist for the Washington Department of Fish and Wildlife, indicates that bull trout have never been caught, seen or reported along the Kitsap Peninsula. The wetland itself does not provide habitat for bull trout because there is no shading to keep waters cool and the source of water are springs and seeps that originate to the south and west. There may be use by bull trout in the waters off Point No Point but there will be no effect on this species by this project because it will only affect a small area of the Puget Sound habitat and conditions will not be altered.

Proposed Critical Habitat

The National Marine Fisheries Services (NWFS) is proposing to list Critical Habitat for the Chinook salmon. Chinook salmon is currently listed as threatened by the NMFS. The critical habitat, as it is proposed for listing, "...is proposed to include all marine, estuarine, and river reaches accessible to chinook salmon in Puget Sound" and includes South Sound, Hood Canal, and North Sound to the international boundary at the outer extent of the Strait of Georgia, Haro Strait, and Straits of Juan De Fuca extending north from the west end of Freshway Bay (NMFS, internet connection). Areas above specific dams or longstanding, naturally impassable barriers are excluded from the critical habitat for chinook salmon. The Evolutionary Significant Unit (ESU) description states that the chinook salmon listed as threatened includes all naturally spawned populations of chinook salmon and from specifically listed hatchery stocks. Neither the Point No Point Wetland nor its associated stream have naturally spawning chinook salmon, although they do occur in Puget Sound at Point No Point.

Candidate Species

Coho Salmon Occurrence

Coho salmon (*Oncorhynchus kisutch*) occurs along the Pacific coast from Monterey Bay, California, to Point Hope, Alaska. Spawning adults are found in most streams of the upper and lower Columbia River drainage, Washington coastal drainage, and the Puget Sound drainage. The young feed in freshwater stream systems, spending 1 to 2 years in these waters before smolting and migrating to the ocean, which occurs in spring until mid-June. These feeding salmon usually remain in the ocean for 18 months before returning to the stream of origin to spawn. Spawning occurs from September through December in the gravel of stream riffles. The young emerge from redds about 2 to 3 weeks after hatching and usually congregate in pools of the stream. Coho is the most common species of salmon occurring in regional streams and can be found in backyards of residential areas and it manages to survive in the most unlikely of neighborhoods. Culverts under roads have sometimes impeded the upstream migrations of adults. Coho populations supported by small streams has been declining for a number of years and in many areas, hatcheries have been able to produce roughly half of the number of Coho currently fished (Wydoski, Whitney, 1979). There are no areas suitable for Coho salmon spawning or rearing in either the Point No Point Wetland or its associated stream. The existing outlet culvert and tide gate essentially prohibit access of the wetland and its associated stream to Coho salmon.

Species of Concern

There are three bat species and two lamprey species that are considered Species of Concern by the US Fish and Wildlife Service (USFWS).

Species of Concern-Bats

The three species of bats identified by the USFWS include long-eared myotis (*Myotis evotis*) and long-legged myotis (*Myotis volans*). The above mentioned bats occur along the entire west coast of the United States from as far south as southern California and their range extends eastward to the Continental Divide (Whitaker, 1980). The long-legged myotis nests in trees, crevices and buildings in the summer and are found mainly in forested regions. The long-eared myotis is commonly found in coniferous forests of the high mountains and sometimes in buildings. The upland bluff, which is heavily forested with mature Douglas fir trees, likely provides some habitat for these bat species and the wetland is probably heavily used by these and other bat species during the summer months as a feeding area. The long-eared myotis is less likely to occur in the vicinity of Point No Point because their habitat is listed as coniferous forest in high mountains, and this area is at sea level.

Peregrine Falcon Occurrence

Peregrine falcons (*Falco peregrinus*) are listed as spring and fall migrants in the vicinity of the Point No Point project. This species has a nearly world wide distribution, in mainly arctic and temperate regions, and its habitats include open country and cliffs from mountainous to coastal areas. It is presumed that the spring and fall migrants are of the Peale subspecies that are relatively common in this area (Wiltermood, personal communication). They probably do occur in the Point No Point/Hansville area during migration due to concurrent migration by shorebirds, although this may not be a major stopover for the peregrines because there is not significant concentration of shorebirds in the Point No Point Wetland or along the shores of Point No Point. Ducks have been largely observed during the high tides when water is standing in portions of the wetland, while peregrines do not normally consume ducks, they will take an occasional duck (Wiltermood, personal communication). Spring migration takes place largely in April in conjunction with shorebird migration and in September to October of the fall migration. There are potential nesting or resident peregrines in this area of Point

No Point because there are cliffs and bluffs that overlook Puget Sound and Point No Point Wetland and they likely use the wetland from time to time despite the presence of humans. No Peregrines were observed during my site visit nor were there any observed during Vanbianchi's site visit (1991) or Harper's site visit (1998).

POTENTIAL IMPACTS AND EFFECTS OF PROPOSED PROJECT

Direct Impacts

The only direct impact of this project, which proposes to alleviate flooding along Point No Point Road and homes located along the road by increasing the size of the outlet tide gate and culvert that extends into Puget Sound, will be the impact of removing the existing tide gate and culvert as well as potentially reducing the amount of saltmarsh within this system. In the hydrology section, I described the other sources of saltwater into this system including subsurface saltwater intrusion and overtopping of the beach berm during high storm surges. The wetland will continue to receive saltwater via intrusion and overtopping but will receive less saltwater with the installation of a larger, well functioning tide gate. This could potentially allow increased cover by reed canary grass, which dominates the west half of the emergent community and change the overall functioning of this wetland. It will continue to receive high levels of stormwater runoff, direct rainfall, and springs/seeps that presently provides a year round source of hydrology for the stream and wetland system. There will be no affect on the regular source of water into the system and the increased culvert size will help alleviate flooding that affects both the wetland and homes along Point No Point Road. While there is likely to be a change to the general vegetative conditions within the wetland, it does not presently provide habitat for endangered or threatened fish species and will not alter or take habitat previously available to these species.

The project is proposed over a very short period of time but noise generated through use of heavy equipment may affect usage of the Point No Point Wetland and shoreline by eagles and other species of wildlife that may utilize this system. This will be a temporary impact that will be alleviated once the project has been completed. There will be no long-term impacts from noise as a result of this project. The noise from the construction activities along the shoreline may affect fish usage temporarily and fish will likely avoid the area. Shoreline activities will take place during low tide so there will be less overall use of the area by fish, which would occur naturally. There are so many other areas available for fish usage within Puget Sound that would be readily accessible to fish during installation of the outlet pipe, debris barrier, and energy dissipater.

Indirect Effects

The project is intended to alleviate flooding along Point No Point Road and the overall project will not affect the habitat area in terms of permitting additional human access, reducing food resources and impacting foraging areas. The width of the trail will be increased to accommodate trucks and heavy equipment and will likely be maintained at its improved width, which could increase the amount of foot traffic around the wetland.

Interrelated and Interdependent Effects

There are only a few interdependent effect of this project is replacement of vegetation and driftwood along the shoreline and beach berm. The second interdependent effect is the planned access from Point No Point Road. The road ends at the Coast Guard Lighthouse and Historical Marker, which is frequently used by local residents and tourists, on weekends and summer tourist season. The access will cross through the existing Lighthouse Park to the existing beach berm trail but will not result in

removal of buildings or historical features of the park. It will affect fences around the existing private residence and lawn areas. The lawn and fences will be re-established once the project has been completed.

Cumulative Effects

There are no other future state or private actions that will result from improvement of the tide gate and culvert outlet from the Point No Point Wetland. The project is strictly planned to alleviate flooding of the major thoroughfares to existing homes and developments in the Point No Point area and will not benefit any planned project for state or private interests.

Recovery or Management Plans

The Washington Department of Fish and Wildlife is still working on the Salmon Recovery Plan in conjunction with the work of the Governor's Salmon Recovery Office. At this point, the recovery plan will entail watershed management as a way to recover wild salmon and will be conducted in cooperation with participating Washington State agencies. The goal of the Statewide Strategy to Recover Salmon is to restore salmon, steelhead, and trout populations to healthy and harvestable levels and improve habitats on which fish rely (Salmon Recovery Office, internet connection). The Point No Point Drainage Improvement Project appears to conform to the basic goals of the Salmon Recovery Plan in that the Kitsap County Department of Public Works, Surface Water Management, is proposing only to alleviate flooding along Point No Point Road by increasing the size of the outlet tide gate and culvert that leads into Puget Sound. There is no salmonid habitat in this wetland system as it outlets into Puget Sound via existing tide gates and there are no habitat features available for salmonid species. In order to comply with existing recommendations of the WDFW, the project will follow the HPA requirements, which include future consideration and studies to determine the feasibility of removing all or a portion of the beach berm to allow restoration of the Point No Point Wetland to an estuarine condition. Restoration of an estuarine wetland would then create fish rearing and resting habitat that is generally not available in the North Kitsap Area and aid in the salmon recovery process. These requirements will also include working in a window determined by WDFW to be less detrimental to fish and during low tide and flows. The specific HPA requirements are listed in the Recommendations and Conservation Measures section.

The Pacific Bald Eagle Recovery Plan is a federal plan to encourage the recovery of the bald eagle in the lower 48 states. The recovery plan was adopted by the WDFW as the Bald Eagle Protection Rule. This rule requires the creation of management plans for work proposed within 800 feet of an eagle nest and retention of potential perch trees and potential nest trees within feeding and nesting areas. The eagle nest south of the project site is within the Point-No-Point Eagle Territory. The project will not significantly affect the existing eagle nest area or the foraging areas of the Point No Point area as it will not reduce the size or effect the feeding or foraging areas over the long term. It will also not require removal of vegetation that is important for perching or nesting, as the only vegetation to be removed are the shrubs, beach grasses and two scrub alders. There may be temporary impacts due to noise from construction activities, which would affect daytime use and flyover by bald eagles in the wetland and along the Point No Point shoreline. It may also affect the daytime habits of other bird or bat species of concern. There are other areas north and west of Point No Point that will be less affected by the noise and will be available for use by the eagle.

EFFECT DETERMINATIONS FOR LISTED AND PROPOSED SPECIES

Bald Eagle

Bald eagles occur in the Point No Point area year-round and there is a nest present south of the project area. Construction activities will take place during a three week period of the summer nesting season, between June and August of 2000, and noise will be generated by use of heavy equipment during excavation, improvement of the existing trail, and replacement of the outlet culvert and tide gate. There is forested upland, the Point-No-Point wetland and homes situated between the project area, which will screen much of the noise and reduce its affect on the nesting eagles. There is very little vegetation removal proposed since much of the project crosses through shrub and beach grass dominated beach berm, with only two small alder trees less than 15 feet tall along the existing culvert alignment.

Anadromous Fish

The impacts listed in this section will include potential impacts to both the listed Chinook salmon and bull trout and the candidate Coho salmon since they have similar habitat needs within Puget Sound in general and more specifically along the Hansville and Point No Point shoreline. The impacts of this project will have a temporary impact on the Point No Point shoreline, which is part of the Puget Sound ESU of Chinook and Coho salmon, and bull trout. There will be no impact to fish habitat elsewhere along the project as neither the Point No Point Wetland or its associated stream provide rearing or spawning habitat for these salmonid species. The Point No Point shoreline will be temporarily impacted by installation of the outlet pipe across the beach to below ordinary high water of Puget Sound. The beach substrate and elevation will not be altered, as result of this project so there will be no long-term affect to the beach habitat.

Disturbance

Construction activities will include removal of shrub and beach grass vegetation, improvement of the existing beach berm trail from one man trail to 12 foot wide access route for heavy equipment, removal and replacement of the existing 18 inch culvert and tide gate with a 42 inch culvert and tide gate, and installation of an energy dissipater in Puget Sound (at the end of the culvert). There will be no significant removal of vegetation or change the hydrologic regime of the wetland other than a reduction of saltwater that presently enters through the tide gate. There will continue to be significant amounts of freshwater entering the system from the associated stream and some saltwater will enter the system via subsurface saltwater intrusion and overtopping of the berm during high storm surges. This may change the character of the brackish portion of the system but will not change the limited overall habitat that it provides for listed salmonid or bird species. The wetland provides no habitat for salmonids nor is there a path for salmon to reach this wetland system saltwater due to the tide gate at the outlet. Work on the shoreline (installation of the culvert and energy dissipater) will take place during low tide when fish are least likely to be utilizing the area around Point No Point and will be the main fish window observed for the Puget Sound. The work will take place over a period of three weeks during the summer months between June 15th and September 15th. Activities will be conducted during the day (7am to 5pm) and during low tides, which will allow fish to utilize the construction areas during non-construction hours (5pm to 7am).

Water Quality

Excavation of soil for installation of pipes and installation of the tide gate may result in temporary water quality impacts and temporary avoidance of the area by fish (Point No Point shoreline). These impacts may result from siltation from excavated and stockpile areas into the Point No Point Wetland

or shoreline. Best management practices will be undertaken to avoid impacts to the water quality of the streams and/or wetlands and shall include temporary erosion and sediment control measures and working during periods of low tide, low flow and low water levels. There will be only sediment impacts to the associated stream that may wash into Puget Sound at Point No Point and minor sediment wash into the Point No Point Wetland. Sediment may enter the wetlands and/or stream systems inadvertently during construction activities and best management practices will be used to control the amount of sediment that is permitted to enter these systems. These sediments will be composed of coarse beach sand and they are not expected to impact fish use in Puget Sound.

Habitat
There is no fish habitat within the Point No Point Wetland or associated stream as the downstream tide gates prohibit access and there are no habitat features available within these systems, so there will be impact to either system as a habitat area. Installation of pipe will temporarily affect the shoreline community across the beach and below ordinary high water but these activities will occur only during low tide. There will be no change to the substrate conditions or elevations within this area that will affect fish usage of this area after construction is completed.

Hydrodynamics
There will be some change to the hydrodynamics of the Point No Point Wetland and its associated stream due to the lack of saltwater inflow via the malfunctioning tide gate. There will be less saltwater flowing in through the tide gate so there will be less mixing of salt and freshwater which will likely result in conversion of emergent saltmarsh to emergent or scrub/shrub freshwater marsh. This will therefore result in less ponding in areas immediately adjacent to the main ditch, which spreads into the emergent wetland as water levels increase. There will be no affect on the inflow of freshwater to the system although high flows will be able to exit the wetland more quickly and alleviate flooding that occurs along Point No Point Road. The Harper (1998) and Vanbianchi (1991) reports state that the wetland also receives saltwater via subsurface intrusion and overtopping of the beach berm during high storm surges and the proposed project will not affect the flow of saltwater via these sources into the Point No Point Wetland. The change in water flow and time it remains in the wetland and ditches will not affect the condition of the system for salmonid spawning or rearing as there are no listed or candidate fish currently utilizing this system.
Based on the potential impacts listed above, the proposed project will have no effect on the habitat and/or use of the area by the listed and candidate anadromous fish species (Chinook, bull trout and Coho salmon).

<u>Proposed Critical Habitat-Chinook</u>
This project will not adversely modify or jeopardize proposed critical habitat of chinook salmon. The project only proposes a temporary impact to the shoreline at Point No Point to install the outlet pipe and energy dissipater. There will be no changes to the elevation or substrate of shoreline, therefore, there will be no long-term affect to the Puget Sound habitat of Chinook salmon. Neither the Point No Point Wetland nor its associated stream has features that would support spawning or rearing Chinook salmon.

<u>Humpback Whale</u>
Puget Sound is widely used by humpback whales and they have likely been seen from the Point No Point shoreline. The project will affect only a small portion of the Puget Sound shoreline on a temporary basis and should not result in less use of this area by the whales, except during daytime, low tide work. This project will have no effect on the humpback whale

Leatherback Sea Turtle
The Leatherback Sea Turtle can be found in the deepwater habitat of Puget Sound and it is likely that noise and low tide work will affect usage of the Point No Point shoreline on a temporary basis. There are many other areas within Puget Sound that are used by this species and will be available during the temporary work period required by this project. This project will have no effect on the leatherback sea turtle.

Steller Sea Lion
Use of Puget Sound by the Stellar sea lion is limited to those areas with rocky shores and along coastal waters and they likely use the Point No Point shoreline as part of the habitat. The work will take place in a system that has many other areas that can be readily used by these species and they will be available during the temporary work to occur in this area. This project may affect but is not likely to adversely affect the Stellar Sea Lion.

Potential Impacts to Candidate Species and Species of Concern

Candidate Species
Coho salmon is a candidate species for listing under the ESA. The potential impacts to anadromous fish species, as listed above, include impacts that will have no effect on the candidate fish species.

Species of Concern-Bats
The impacts to long-legged and long-eared myotis' will be limited to noise during daytime construction, since construction activities will result in loss of shrubs and beach grasses and will not impact the potential upland forested habitat south of the Point No Point Wetland. This project will have no effect on the above bat species.

Species of Concern-Peregrine Falcon
The peregrine falcons are listed as spring and fall migrants in the Point No Point area because there is potential for high shorebird concentrations in the beach areas. They likely use the wetland as part of their life cycle and habits but this project is temporary and will not impact areas that would be most frequently used by Peregrine falcons. Therefore, this project will have no effect on this Peregrine falcon.

Jeopardy or Take
The Point No Point Wetland does not provide habitat for listed salmonid species and the proposed drainage improvement project will entail replacement of existing features. The project will not change the habitat available to the listed species nor will it result in the taking of an individual and there will be no jeopardy to the listed species.

CONSERVATION MEASURES

The conservation measures listed in this section will be used to reduce or eliminate any adverse effects of the proposed construction. Since this project entails increasing the flow of excess water through the Point No Point Wetland, the conservation measures have been developed to temper the noise and potential sediment impacts to the wetland and shoreline areas as well as reducing the impact of the pipe installation across the shoreline.

1. Excavation will be limited to only those areas absolutely necessary for the construction activities.
2. Construction of this project is scheduled for the summer of 2000 to reduce the likelihood of adverse water quality impacts.
3. Construction activities will be conducted along the existing beach berm and culvert alignment.
4. Disturbed areas will be re-vegetated as soon as practical.
5. The area habitat biologist will be notified prior to the commencement of construction to ensure that all conditions of the HPA are understood and complied with.
6. All work will be performed in strict compliance with the project plans and the conditions identified in the HPA.
7. Work below mean higher high water will be accomplished between June 15 and September 15 as directed by the HPA.

RECOMMENDATIONS

The recommendations listed below represent the usual activities conducted to avoid impacts to natural areas and the listed/candidate/species of concern. Additional recommendations can be found in the HPA, which has not been formally developed.

1. Removal of vegetation and improvement of the existing beach berm will take place at the start of the project.
2. Construction work in the ditch as it drains into the tide gate and across the shoreline will take place during low tide to reduce potential sedimentation and erosion impacts. Low tide work will represent the fish window used for this project.
3. Limits of clearing will be clearly identified as the edge of the improved access road to prevent incidental removal.
4. Cleared areas and berm slopes shall be re-vegetated following completion of the project. Driftwood removed during culvert removal and installation will be replaced following completion of the project.
5. The project is slated to begin in summer 2000 and will be completed within three weeks and because the project begins more than 6 months from completion of this biological assessment, new species lists shall be obtained from the USFWS, NMFS, and WDFW every six months until project completion. If the status of the species has changed, additional review or restrictions may be required at that time.
6. The Point No Point wetland is to be added to the Kitsap County Public Works roster for study of potential restoration of tidal saltmarsh by removing all or a portion of the beach berm, in an effort to assist salmon recovery within Puget Sound.

CONCLUSIONS

This biological assessment is being prepared on behalf of FHWA, the lead for Section 7 consultation because federal permits are being obtained for construction for this project. Kitsap County Department of Public Works, Surface Water Management Division, is proposing to replace an existing 18 inch diameter tide gate and outlet culvert from Point No Point Wetland to alleviate flooding along Point No Point Road. The new tide gate and outlet pipe will be increased to 42 inches in diameter to accommodate higher surface water flows from the associated stream and from developed areas west of the system. There is no habitat within the Point No Point Wetland or its associated stream for salmonids because the tide gate prevents access to fish and the system lacks habitat features important

to most salmonid species. The major focus of this biological assessment is the potential affects of reducing the amount of saltwater that enters Point No Point Wetland, the improvement of the existing beach berm trail to accommodate heavy equipment, and the installation of the tide gate/outlet pipe across the Point No Point shoreline, because of their potential habitat for several species of listed and candidate anadromous fish species, bald eagle, peregrine falcon, humpback whale, Stellars sea lion, and leatherback sea turtle. This project will have no effect on humpback whale, Stellar's sea lion, the leatherback sea turtle, bull trout, and Chinook salmon or proposed critical Chinook salmon habitat and may effect, but is not likely to adversely affect bald eagle. There will be no effect on the candidate species (Coho salmon) or species of concern (peregrine falcon, long-eared myotis and long-legged myotis).

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November 1, 1999 64 FR 58910

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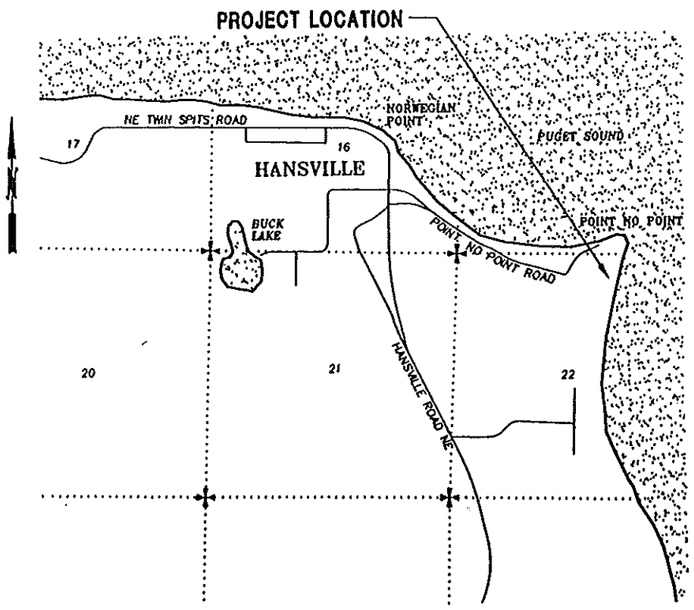
SEC. 15 & 22, T. 28 N., R. 2 E.

POINT NO POINT DRAINAGE IMPROVEMENT

POINT NO POINT OUTFALL
HANSVILLE
KITSAP COUNTY, WA



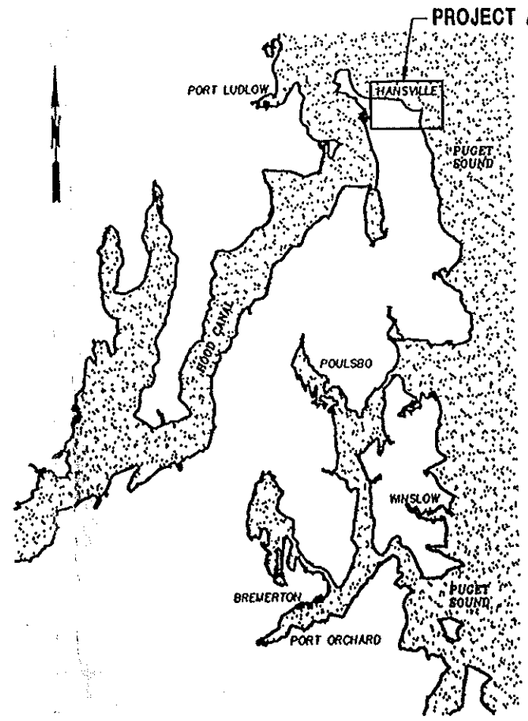
SITE MAP
N.T.S.

DIRECTOR OF PUBLIC WORKS
Randy W. Casteel, P.E.

COUNTY COMMISSIONERS
Chris Endresen
Phil Bast
Charlotte Garrido

SHEETING INDEX

1 COVER SHEET, VICINITY MAP & LEGEND
2 PLAN & PROFILE
3 ACCESS ROAD PLAN AND DRAINAGE DETAILS



VICINITY MAP
N.T.S.

GENERAL NOTES

1) ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO THE MOST CURRENT STANDARD SPECIFICATIONS FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION PREPARED BY WSDOT AND APWA AS ADOPTED BY THE KITSAP COUNTY DEPARTMENT OF PUBLIC WORKS (KCDPW).

2) THE WORK SHALL CONFORM TO THE CONDITIONS OF THE HYDRAULIC PROJECT APPROVAL (HPA) AND THE SHORELINES MANAGEMENT PERMIT.

3) ANY REVISIONS TO THE ACCEPTED CONSTRUCTION PLANS SHALL BE REVIEWED AND APPROVED BY THE KCDPW PRIOR TO IMPLEMENTATION IN THE FIELD.

4) THE CONTRACTOR SHALL MAINTAIN A SET OF THE ACCEPTED CONSTRUCTION DRAWINGS ON-SITE AT ALL TIMES WHILE CONSTRUCTION IS IN PROGRESS.

5) IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN ALL NECESSARY PERMITS FROM THE KCDPW PRIOR TO COMMENCING ANY WORK WITHIN COUNTY RIGHT-OF-WAY.

6) THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ADEQUATE TRAFFIC CONTROL AT ALL TIMES DURING CONSTRUCTION ALONGSIDE OR WITHIN ALL PUBLIC ROADWAYS. TRAFFIC FLOW ON EXISTING PUBLIC ROADWAYS SHALL BE MAINTAINED AT ALL TIMES, UNLESS PERMISSION IS OBTAINED FROM THE KCDPW FOR ROAD CLOSURE AND/OR DETOURS.

7) THE LOCATIONS OF EXISTING UTILITIES ON THIS PLAN IS APPROXIMATE ONLY. THE CONTRACTOR SHALL CONTRACT THE "UNDERGROUND LOCATE" CENTER AT PH: 1-800-424-5555, AND NONSUBSCRIBING INDIVIDUAL UTILITY COMPANIES 48 HOURS IN ADVANCE OF THE COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL PROVIDE FOR PROTECTION OF EXISTING UTILITIES FROM DAMAGE CAUSED BY THE CONTRACTOR'S OPERATIONS.

DRAINAGE- NOTES

1) ALL STEEL PIPE AND PARTS SHALL BE GALVANIZED. ALL SUBMERGED STEEL PIPES AND PARTS SHALL BE GALVANIZED AND HAVE ASPHALT TREATMENT #1 OR BETTER.

2) PRIOR TO BEGINNING ANY WORK ON THE PROJECT SITE, A PRECONSTRUCTION CONFERENCE MUST BE HELD, AND SHALL BE ATTENDED BY THE GENERAL CONTRACTOR, THE PROJECT ENGINEER, REPRESENTATIVES FROM AFFECTED UTILITIES, AND A REPRESENTATIVE OF KITSAP COUNTY.

3) AT NO TIME SHALL CONCRETE, CONCRETE BY-PRODUCTS, VEHICLE FLUIDS, PAINT, CHEMICALS, OR OTHER POLLUTING MATTER BE PERMITTED TO DISCHARGE TO SURFACE WATERS FROM THE PROJECT SITE.

PROJECT CONTROL NOTES

1) THE VERTICAL DATUM USED FOR THIS SURVEY IS MEAN LOWER LOW WATER (MLLW).

2) PROPERTY LINES SHOWN HEREON ARE BASED UPON RECORDED INFORMATION FROM KITSAP COUNTY ASSESSORS MAP. THIS MAP DOES NOT REPRESENT A BOUNDARY SURVEY OF PROPERTY SHOWN.

MINIMUM EROSION AND SEDIMENTATION CONTROL REQUIREMENTS

1) ALL WORK SHALL BE CONDUCTED WHEN TIDES ARE BELOW THE WORK AREA. THE CONTRACTOR SHALL SUBMIT A PROPOSED WORK SCHEDULE FOR APPROVAL INDICATING HOW WORK WILL BE SCHEDULED TO ACCOMMODATE TIDE CYCLES.

2) STABILIZATION AND SEDIMENT TRAPPING - ALL EXPOSED AND UNWORKED SOILS, INCLUDING SOIL STOCKPILES, SHALL BE STABILIZED BY SUITABLE APPLICATION OF BMPS WHICH PROTECT SOIL FROM THE EROSIVE FORCES OF RAINDROP IMPACT AND FLOWING WATER. APPLICABLE PRACTICES INCLUDE, BUT ARE NOT LIMITED TO VEGETATIVE ESTABLISHMENT, MULCHING, PLASTIC COVERING, AND THE EARLY APPLICATION OF GRAVEL BASE ON AREAS TO BE PAVED. FROM OCTOBER 1 TO APRIL 30, NO SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN 2 DAYS. FROM MAY 1 TO SEPTEMBER 30, NO SOILS SHALL REMAIN UNSTABILIZED FOR MORE THAN 7 DAYS. THE CONTRACTOR SHALL HAVE SUFFICIENT MATERIALS, EQUIPMENT AND LABOR ON-SITE TO STABILIZE AND PREVENT EROSION FROM ALL DENUDED AREAS WITHIN 12-HOURS AS SITE AND WEATHER CONDITIONS DICTATE.

3) CONSTRUCTED ACCESS ROUTES - WHEREVER CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED ROADS, PROVISIONS MUST BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT (MUD) ONTO THE PAVED ROAD BY USE OF APPROPRIATE BMP'S SUCH AS A STABILIZED CONSTRUCTION ENTRANCE. IF SEDIMENT IS TRANSPORTED ONTO A ROAD SURFACE, THE ROADS SHALL BE CLEANED THOROUGHLY, AS A MINIMUM, AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM ROADS BY SHOVELING OR SWEEPING AND BE TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER.

4) REMOVAL OF TEMPORARY BMPS - ALL TEMPORARY EROSION AND SEDIMENT CONTROL BMPS SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMPS ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON-SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL OF TEMPORARY BMPS SHALL BE PERMANENTLY STABILIZED.

5) ALL DISTURBED BANKS AND BARE SOIL SHALL BE PERMANENTLY SEEDED WITH A MIX OF TALL FESCUE (40%), PERENIAL RYE GRASS (30%), AND CHEWING FESCUE (30%) IN ACCORDANCE WITH SECTION 8.01 OF THE WSDOT STANDARD SPECIFICATIONS.

LINE TYPES

- RIGHT OF WAY
- 1+00 CONSTRUCTION CENTERLINE
- EXISTING EDGE OF PAVEMENT
- FENCE
- BURIED POWER
- OHPTC OVERHEAD UTILITY LINES
- G GAS
- W WATER
- S SANITARY SEWER
- 38 CONTOUR LINE

ALL UNITS ARE ENGLISH.

Appendix A-1

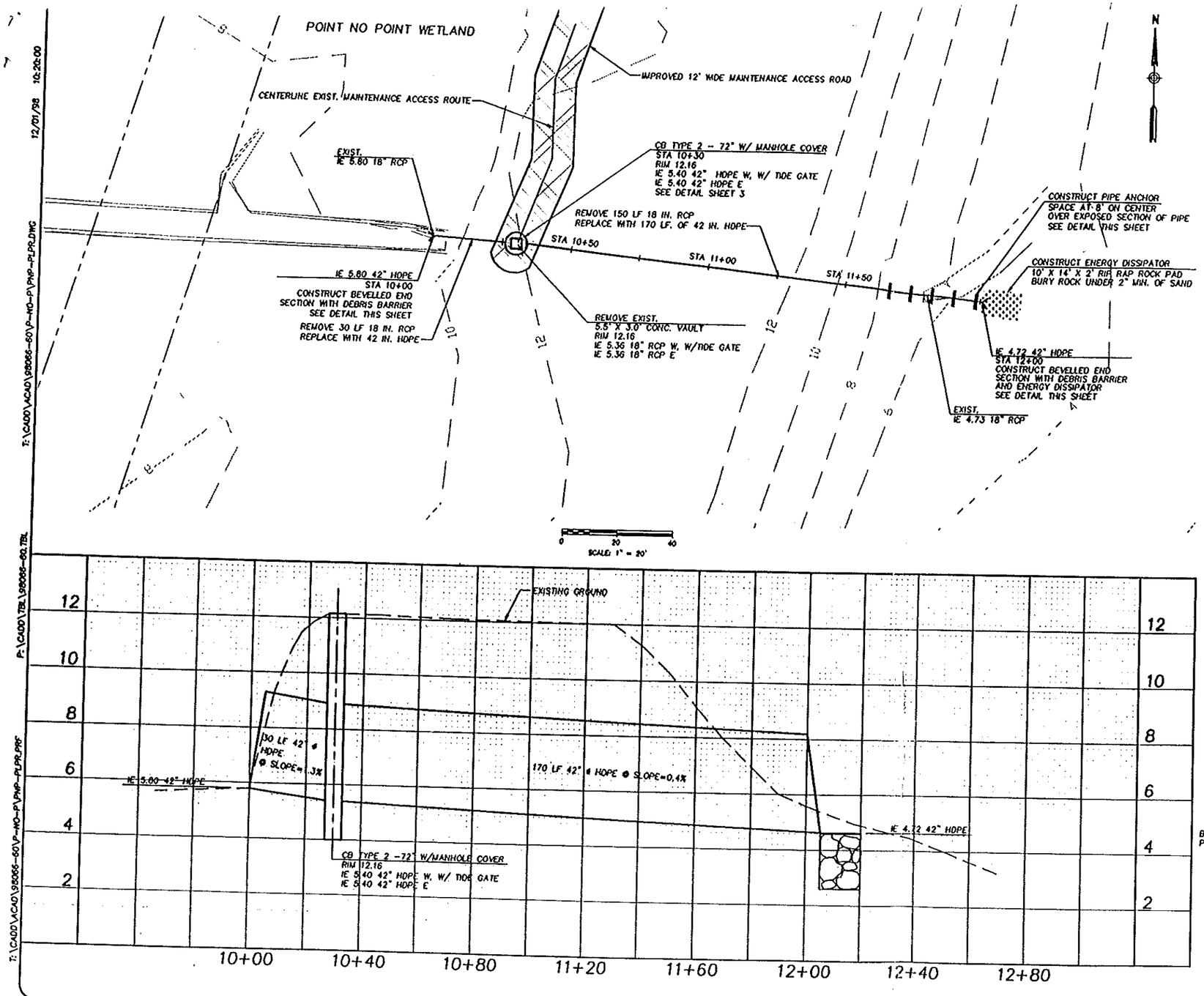
90% SUBMITTAL

ENTRANCO
WASHINGTON CALIFORNIA ARIZONA OREGON IDAHO UTAH

REVISIONS				SURVEYED JPP	DESIGNED NOS
No.	BY	DATE	DESCRIPTION	DRAWN NOS	CHECKED BWJ
				DATE 8/31/98	
				SCALE	

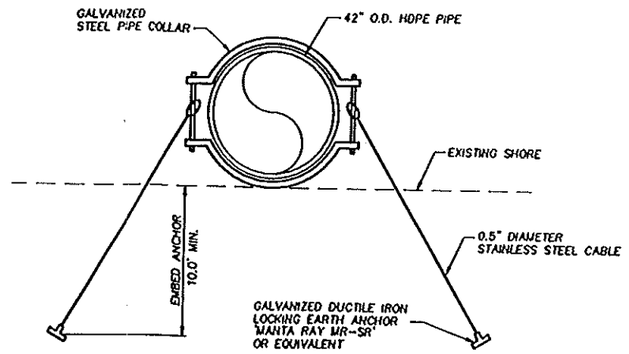
KITSAP COUNTY
DEPT. OF PUBLIC WORKS
SURFACE & STORMWATER
MANAGEMENT PROGRAM
614 DIVISION STREET MS-26A
PORT ORCHARD, WA 98366
TEL: (360) 337-7290 FAX: (360) 337-5790

POINT NO POINT
OUTLET IMPROVEMENT
COVER SHEET, VICINITY MAP & LEGEND

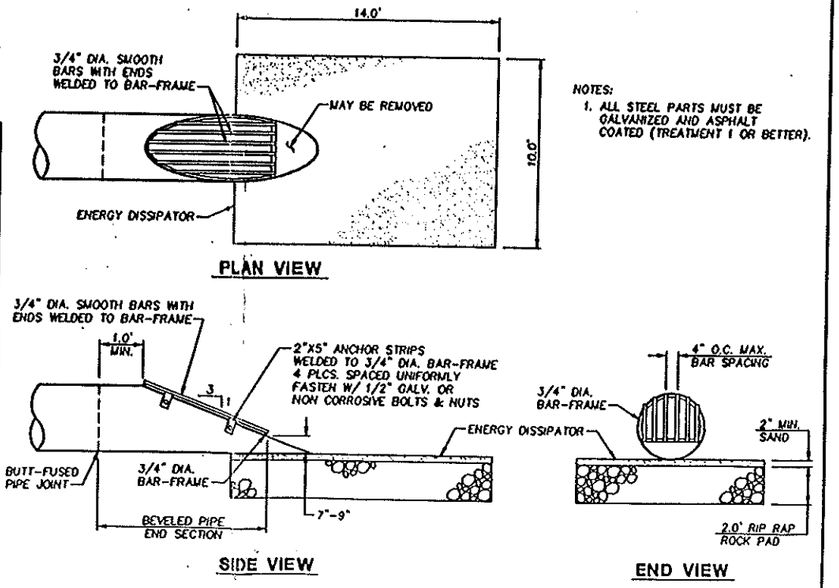


THE EXISTING TOPOGRAPHICAL AND PHYSICAL FEATURES SHOWN ON THESE PLANS ARE BASED (COMBINATION OF) FIELD SURVEY DATA AND FIELD RECONNAISSANCE BY ENTRIX AS WAS THE INFORMATION AVAILABLE AT THE TIME OF PLAN PREPARATION. ACTUAL ITEMS MAY BE DIFFERENT. THE CONTRACTOR MAY ENCOUNTER VARIATIONS BETWEEN ACTUAL CONDITIONS AND THOSE SHOWN. THESE VARIATIONS SHALL NOT BE THE BASIS FOR A CLAIM OR EXTRA COMPENSATION.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ENTRIX. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.



PIPE ANCHOR DETAIL
N.T.S.



NOTES:
1. ALL STEEL PARTS MUST BE GALVANIZED AND ASPHALT COATED (TREATMENT 1 OR BETTER).

BEVELLED END SECTION WITH DEBRIS BARRIER AND ENERGY DISSIPATOR
N.T.S.

90% SUBMITTAL

ENTRANCO
WASHINGTON CALIFORNIA ARIZONA OREGON IDAHO UTAH

REVISIONS

No.	BY	DATE	DESCRIPTION

SURVEYED JPP	DESIGNED NOS
DRAWN BAA	CHECKED BWJ
DATE 8/31/98	
SCALE	

KITSAP COUNTY
DEPT. OF PUBLIC WORKS
SURFACE & STORMWATER
MANAGEMENT PROGRAM
614 DIVISION STREET MS-26A
PORT ORCHARD, WA 98366
TEL: (360) 337-7290 FAX: (360) 337-5790

POINT NO POINT OUTLET IMPROVEMENT

PLAN & PROFILE

SHEET 2 OF 3

P:\CADD\TBL\98066-60.TBL
T:\CADD\ACAD\98066-60\P-NO-P\PNP-PLPR.DWG
12/01/98 10:20:00

THE EXISTING TOPOGRAPHICAL AND PHYSICAL FEATURES SHOWN ON THESE PLANS ARE BASED ON A COMBINATION OF: FIELD SURVEY DATA AND FIELD RECONNAISSANCE BY ENTRANCO; THIS WAS THE INFORMATION AVAILABLE AT THE T PLAN PREPARATION. ACTUAL CONDITIONS MAY BE DIFFERENT. THE CONTRACTOR SHALL VERIFY VARIATIONS BETWEEN ACTUAL CONDITIONS AND THOSE SHOWN. THESE VA SHALL NOT BE THE BASIS FOR A CLAIM OR EXTRA COMPENSATION.

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ENTRANCO. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

POINT NO POINT LIGHTHOUSE

INTEGRATE ACCESS WITH LANDSCAPE PLANS FOR LIGHTHOUSE

BENCH MARK
PT #100
N 337319.30
E 1225186.60
ELEV = 13.02

PK NAIL
PT #2876
N-336956.50
E 1224288.00
ELEV = 12.89
NOTE: PK NAIL LOCATED AT INTERSECTION OF PRIVATE DRIVE AND POINT NO POINT ROAD

POINT NO POINT ROAD

REBAR AND CAP
PT #2688
N 336520.00
E 1224018.00
ELEV = 10.16
NOTE: REBAR & CAP LOCATED AT TURN IN POINT NO POINT ROAD

IMPROVED 12' WIDE ACCESS ROAD 6" THICK CRUSHED SURFACING BASE COURSE. SEE DETAIL THIS SHEET

POINT NO POINT WETLAND

STREAM CHANNEL

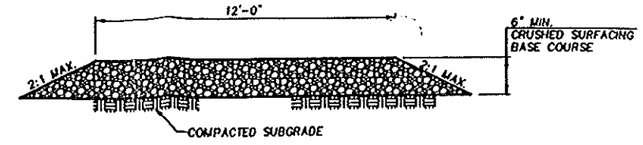
CONTROL STRUCTURE WITH TIDE GATE

REPLACE EXISTING OUTFALL PIPE

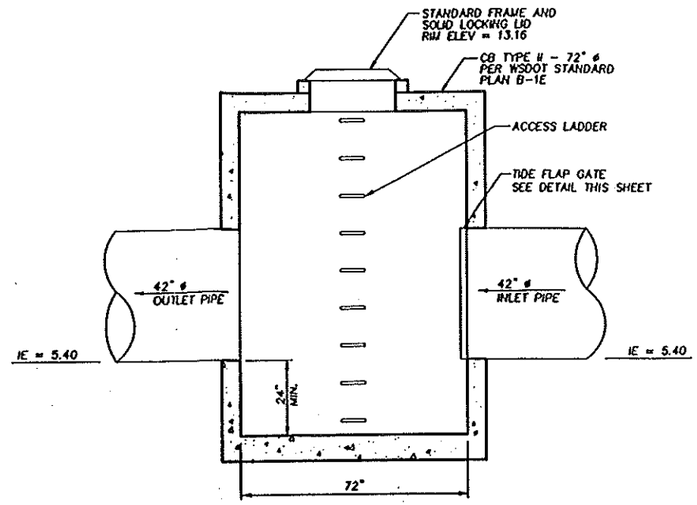
N

0 40 80
SCALE: 1" = 40'

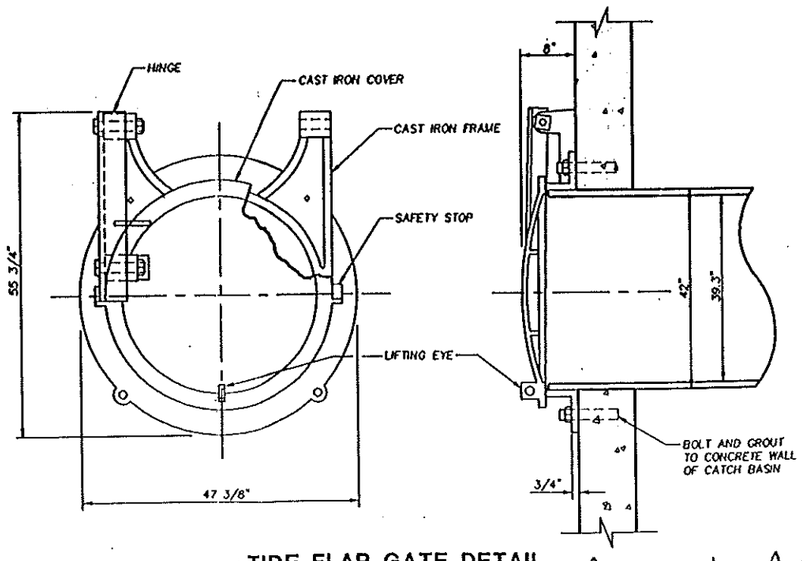
ACCESS ROAD PLAN



ACCESS ROAD DETAIL
N.T.S.



CB TYPE 2 - 72" IN. DIA. W/ TIDE FLAP GATE
SCALE: 1/2" = 1'-0"



TIDE FLAP GATE DETAIL
N.T.S.

Appendix A-2

90% SUBMITTAL

T:\CADD\ACAD\98066-60\P-NO-P\PNP-RDPL.DWG 12/01/98 10:26:16

P:\CADD\TBL\98066-60.TBL

T:\CADD\ACAD\98066-60\P-NO-P\PNP-RDPL_PRF

ENTRANCO
WASHINGTON CALIFORNIA ARIZONA OREGON IDAHO UTAH

REVISIONS			
No.	BY	DATE	DESCRIPTION

SURVEYED JPP	DESIGNED NOS
DRAWN BAA	CHECKED BWJ
DATE 8/31/98	
SCALE	

KITSAP COUNTY
DEPT. OF PUBLIC WORKS
SURFACE & STORMWATER MANAGEMENT PROGRAM
614 DIVISION STREET MS-26A
PORT ORCHARD, WA 98366
TEL: (360) 337-7290 FAX: (360) 337-5730

POINT NO POINT OUTLET IMPROVEMENT

ACCESS ROAD PLAN AND DRAINAGE DETAILS

SHEET 3 OF 3

United States Department of the Interior

FISH AND WILDLIFE SERVICE
North Pacific Coast Ecoregion
Western Washington Office
510 Desmond Drive SE, Suite 102
Lacey, Washington 98503
Phone: (360) 753-9440 Fax: (360) 753-9518

JAN 27 2000

Dear Species List Requester:

You have requested a list of listed and proposed threatened and endangered species, candidate species and species of concern (Attachment A) that may be present within the area of your proposed project. This response fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act of 1973, as amended (Act). We have also enclosed a copy of the requirements for Federal agency compliance under the Act (Attachment B).

Should the Federal agency determine that a listed species is likely to be affected (adversely or beneficially) by the project, you should request section 7 consultation through this office. If the Federal agency determines that the proposed action is "not likely to adversely affect" a listed species, you should request Service concurrence with that determination through the informal consultation process. Even if there is a "no effect" situation, we would appreciate receiving a copy for our information.

Species of concern are those species whose conservation standing is of concern to the Service, but for which further status information is still needed. Conservation measures for species of concern are voluntary, but recommended. Protection provided to these species now may preclude possible listing in the future.

There may be other federally listed species that may occur in the vicinity of your project which are under the jurisdiction of the National Marine Fisheries Service (NMFS). Please contact NMFS at (360) 753-9530 to request a species list.

In addition, please be advised that federal and state regulations may require permits in areas where wetlands are identified. You should contact the Seattle District of the U.S. Army Corps of Engineers for Federal permit requirements and the Washington State Department of Ecology for State permit requirements.

Your interest in endangered species is appreciated. If you have additional questions regarding your responsibilities under the Act, please contact Bobbi Barrera (360) 753-6048 or Yvonne Dettlaff (360) 753-9582.

Sincerely,

Gerry A. Jackson, Manager
Western Washington Office

yd
Enclosure(s)

c:COE
WDFW Region 6

ATTACHMENT A January 18, 2000

LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES, CANDIDATE SPECIES AND SPECIES OF CONCERN WHICH MAY OCCUR WITHIN THE VICINITY OF THE PROPOSED POINT NO POINT DRAINAGE IMPROVEMENT PROJECT IN KITSAP COUNTY, WASHINGTON

(T28N R02E S115,22)

FWS REF: 1-3-00-SP-0328

LISTED

Bald eagle (*Haliaeetus leucocephalus*) - There are two bald eagle nesting territories located in the vicinity of the project at T28N R02E S27; T28N R02E S22. Nesting activities occur from January 1 through August 15.

Wintering bald eagles occur in the vicinity of the project. Wintering activities occur from October 31 through March 31.

Bull trout (*Salvelinus confluentus*) - may occur in ocean waters adjacent to the project.

Major concerns that should be addressed in your biological assessment of the project impacts to listed species are:

1. Level of use of the project area by listed species.

2. Effect of the project on listed species' primary food stocks, prey species, and foraging areas in all areas influenced by the project.

3. Impacts from project construction (i.e., habitat loss, increased noise levels, increased human activity) which may result in disturbance to listed species and/or their avoidance of the project area.

PROPOSED

None.

CANDIDATE

None.

SPECIES OF CONCERN

The following species of concern may occur in the vicinity of the project:

Long-eared myotis (*Myotis evotis*)
Long-legged myotis (*Myotis volans*)
Peregrine falcon (*Falco peregrinus*)

ATTACHMENT B

FEDERAL AGENCIES' RESPONSIBILITIES UNDER SECTIONS 7(a) AND 7(c) OF THE ENDANGERED SPECIES ACT OF 1973, AS AMENDED

SECTION 7(a) - Consultation/Conference

Requires:

1. Federal agencies to utilize their authorities to carry out programs to conserve endangered and threatened species;

2. Consultation with FWS when a federal action may affect a listed endangered or threatened species to ensure that any action authorized, funded, or carried out by a federal agency is not likely to jeopardize the continued existence of listed species or result in the destruction or adverse modification of critical habitat. The process is initiated by the federal agency after it has determined if its action may affect (adversely or beneficially) a listed species; and

3. Conference with FWS when a federal action is likely to jeopardize the continued existence of a proposed species or result in destruction or an adverse modification of proposed critical habitat.

SECTION 7(c) - Biological Assessment for Construction Projects *

Requires federal agencies or their designees to prepare a Biological Assessment (BA) for construction projects only. The purpose of the BA is to identify any proposed and/or listed species which is/are likely to be affected by a construction project. The process is initiated by a federal agency in requesting a list of proposed and listed threatened and endangered species (list attached). The BA should be completed within 180 days after its initiation (or within such a time period as is mutually agreeable). If the BA is not initiated within 90 days of receipt of the species list, please verify the accuracy of the list with the Service. No irreversible commitment of resources is to be made during the BA process which would result in violation of the requirements under Section 7(a) of the Act. Planning, design, and administrative actions may be taken; however, no construction may begin.

To complete the BA, your agency or its designee should: (1) conduct an onsite inspection of the area to be affected by the proposal, which may include a detailed survey of the area to determine if the species is present and whether suitable habitat exists for either expanding the existing population or potential reintroduction of the species; (2) review literature and scientific data to determine species distribution, habitat needs, and other biological requirements; (3) interview experts including those within the FWS, National Marine Fisheries Service, state conservation department, universities, and others who may have data not yet published in scientific literature; (4) review and analyze the effects of the proposal on the species in terms of individuals and populations, including consideration of cumulative effects of the proposal on the species and its habitat; (5) analyze alternative actions that may provide conservation measures; and (6) prepare a report documenting the results, including a discussion of study methods used, any problems encountered, and other relevant information. Upon completion, the report should be forwarded to our Endangered Species Division, 510 Desmond Drive SE, Suite 102, Lacey, WA 98503-1273.

*

"Construction project" means any major federal action which significantly affects the quality of the human environment (requiring an EIS), designed primarily to result in the building or erection of human-made structures such as dams, buildings, roads, pipelines, channels, and the like. This includes federal action such as permits, grants, licenses, or other forms of federal authorization or approval which may result in construction.

NMFS NW Region Protected Resources Division

West Coast Salmon and the Endangered Species Act

Listing Status: Chinook

Select an ESU name below to view detailed information about each ESU* - including further links to ESU maps, Federal Register Notices, and Status Reviews.

** An Evolutionarily Significant Unit or "ESU" is a distinctive group of Pacific salmon, steelhead, or sea-run cutthroat trout.*

Chinook

ESU Name	Status
Sacramento River Winter-run	**Endangered**
Snake River Fall-run	Threatened
Deschutes River Summer/Fall-run	Not Warranted
Snake River Spring/Summer-run	Threatened
Central Valley Spring-run	Threatened
Central Valley Fall and Late Fall-run	Candidate/Not Warranted
Southern Oregon and Northern California Coastal	Not Warranted
California Coastal	Threatened
Puget Sound	Threatened
Lower Columbia River	Threatened
Upper Willamette River	Threatened
Upper Columbia River Spring-run	**Endangered**
Upper Klamath-Trinity Rivers	Not Warranted
Oregon Coast	Not Warranted
Washington Coast	Not Warranted
Mid-Columbia River Spring-run	Not Warranted
Upper Columbia River Summer/Fall-run	Not Warranted

Home | Fact Sheets | Federal Register Notices | ESA Status Pages
Maps | Reports & Publications | Search | Contact Us

Updated September 9, 1999

Appendix B-2

NMFS NW Region Protected Resources Division

West Coast Salmon and the Endangered Species Act

Listing Status: Coho

Select an ESU name below to view detailed information about each ESU* - including further links to ESU maps, Federal Register Notices, and Status Reviews.

** An Evolutionarily Significant Unit or "ESU" is a distinctive group of Pacific salmon, steelhead, or sea-run cutthroat trout.*

Coho

ESU Name	Status
Central California	Threatened
Southern Oregon/Northern California Coasts	Threatened
Oregon Coast	Threatened
Puget Sound/Strait of Georgia	Candidate
Lower Columbia River/Southwest Washington	Candidate
Olympic Peninsula	Not Warranted

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Maps | Reports & Publications | Search | Contact Us

Updated September 9, 1999

Appendix B-2

Table 2.ENDANGERED AND THREATENED MARINE MAMMALS
AND SEA TURTLES
UNDER THE JURISDICTION OF
NATIONAL MARINE FISHERIES SERVICE
THAT MAY OCCUR OFF WASHINGTON AND OREGON

MARINE MAMMALS

Humpback Whale	(E)	Megaptera novaeangliae
Blue Whale	(E)	Balaenoptera musculus
Fin Whale	(E)	Balaenoptera physalus
Sei Whale	(E)	Balaenoptera borealis
Sperm Whale	(E)	Physeter macrocephalus
Steller Sea Lion	(T)	Eumetopias jubatus

MARINE TURTLES

Leatherback Sea Turtle	(E)	Dermochelys coriacea
Loggerhead Sea Turtle	(T)	Caretta caretta

****

ENDANGERED AND THREATENED MARINE MAMMALS
AND SEA TURTLES
UNDER THE JURISDICTION OF
NATIONAL MARINE FISHERIES SERVICE
THAT MAY OCCUR IN THE PUGET SOUND

MARINE MAMMALS

Humpback Whales	(E)	Megaptera novaeangliae
Steller Sea Lion	(T)	Eumetopias jubatus

MARINE TURTLES

Leatherback Sea Turtle	(E)	Dermochelys coriacea

Appendix B-2

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE
PUBLIC DATA REQUEST INVOICE

INVOICE DATE: 1/31/00

PREPARED BY: Rori Suggsmoss
HABITAT PROGRAM - PHS

PHONE: (360)902-2543

INVOICE #: 73

ORGANIZATION: WILTERMOOD ASSOCIATES INC
CONTACT PERSON: JOANNE BARTLETT
ADDRESS: 1015 SW HARPER ROAD
CITY: PORT ORCHARD STATE: WA ZIPCODE: 98367

DATE OF REQUEST: 12/15/99
REQUEST DESCRIPTION:
POINT NO POINT DRAINAGE IMPROVEMENT PROJECT

DATA TYPE: PHWO
P = PRIORITY HABITATS & SPECIES (PHS)
H = WILDLIFE HERITAGE (HRTG)
N = NATIONAL WETLANDS INVENTORY (NWI)
W = WASH. RIVERS INFORMATION SYSTEM (WARIS)
O = SPOTTED OWL SITE CENTER DATABASE
X = OTHER DATA TYPE

DATA FORMAT: M
M = MAPS
D = DIGITAL
R = TABULAR REPORT
L = SPECIES & HABITAT LIST

NUMBER OF MAPS REQUESTED: 2

MATERIALS:	1.00
LABOR:	0.00
PROCESSING FEE:	20.00
TOTAL COST:	21.00

Please make checks payable to:

WASH. DEPT. OF FISH & WILDLIFE
600 CAPITOL WAY NORTH
OLYMPIA WA 98501-1091

FED. TAX ID # 911632572

REVENUE CODE: 0010421001004C202

DISTRIBUTION: WHITE COPY - BILLING AGENCY YELLOW COPY - RETURN WITH PAYMENT
PINK COPY - ACCOUNTS RECEIVABLE GOLDENROD COPY - GIS SECTION

Appendix B-3

January 18, 2000

WASHINGTON STATE DEPARTMENT OF
Natural Resources

JENNIFER M. BELCHER
Commissioner of Public Lands

Joanne Bartlett
Wiltermood Associates Inc
1015 SW Harper Road
Port Orchard WA 98367

SUBJECT: SSWM, Point-No-Point Drainage Improvement, Kitsap County (T28N R02E S15,22)

We've searched the Natural Heritage Information System for information on rare plants, high quality wetland ecosystems and high quality terrestrial ecosystems in the vicinity of your project. Our only information for your project area is of *Abronia umbellata* ssp. *acutalata* (pink sandverbena), listed as possibly extinct or extirpated in Washington, being reported in 1890 to occur in the Point-No-Point area. The exact location and whether it still occurs there is not known. I have enclosed a list of rare plant species known from Kitsap County for more information.

The information provided by the Washington Natural Heritage Program is based solely on existing information in the database. In the absence of field inventories, we cannot state whether or not a given site contains high quality ecosystems or rare species; there may be significant natural features in your study area of which we are not aware. These data are being provided to you for informational and planning purposes only - the Natural Heritage Program has no regulatory authority.

We have begun to add information to our database on selected groups of animals of conservation concern, such as freshwater mussels, butterflies and bats. However, the authority for protection of animal species in Washington rests with the Department of Fish and Wildlife. To ensure that you receive information on all animal species of concern, please contact Priority Habitats and Species, Washington Department of Fish and Wildlife, 600 Capitol Way N, Olympia, WA 98501-1091, or by phone (360) 902-2543.

If you have the opportunity, visit our website at http:// www.wa.gov/dnr and click on *Conservation/Protection.* Please do not hesitate to call me at (360) 902-1667 if you have any questions, or by E-mail: sandra.moody@wadnr.gov.

Sincerely,

Sandy Swope Moody

Sandy Swope Moody, Environmental Coordinator
Washington Natural Heritage Program
PO Box 47016
Olympia WA 98504-7016

Enclosures

Appendix B-4

Washington Natural Heritage Information System
Endangered, Threatened, and Sensitive Vascular Plants of Washington
May 1999

Kitsap County

Scientific Name	Common Name	State Status	Federal Status*	Historic Record**
Abronia umbellata ssp acutalata	Pink sandverbena	Pos Extirpated	SC	H
Heteranthera dubia	Water star-grass	Review		
Hydrocotyle ranunculoides	Floating water pennywort	Review		
Lycopodiella inundata	Bog clubmoss	Sensitive		
Oxalis suksdorfii	Western yellow oxalis	Sensitive		H
Puccinellia nutkaensis	Alaska alkaligrass	Sensitive		H
Woodwardia fimbriata	Chain-fern	Sensitive		

* LE = Listed Endangered, LT = Listed Threatened, PE = Proposed Endangered, PT = Proposed Threatened, C= Candidate for listing, SC = Species of Concern (an unofficial status)
** H = Known only from historic record

POINT NO POINT
BIOLOGICAL ASSESSMENT PHOTOS

These photos show the path of the trail along the existing beach berm, which will be improved and widened to 12 feet to accommodate heavy equipment access to the project area. The upper photo shows the start of the path improvement as it begins behind the lighthouse. The middle photo shows the point where the path will join the berm and the lower photo shows the trail as it extends south through rose bushes and beach grasses.

Appendix C

POINT NO POINT
BIOLOGICAL ASSESSMENT PHOTOS

The photos on this page show the general path of the outlet culvert from the tide gate. The upper photo shows the beach area through which the culvert will be installed and the lower photos shows the top of the beach berm on which the two scrub alders are growing.

POINT NO POINT
BIOLOGICAL ASSESSMENT PHOTOS

The photos on this page show the beach area south and north of the outlet culvert path. The beach in this area, which faces east into Puget Sound, is mostly sand with a row of small pebbles just above the tide shown in these photos and driftwood at the high water line. The Coast Guard Lighthouse can be seen in the background of the lower photo, which also shows a portion of the beach berm where the trail will be upgraded to support equipment.

POINT NO POINT
BIOLOGICAL ASSESSMENT PHOTOS

The photos on this page were taken to give a panoramic view of the Point No Point Wetland system, from north to south. The upper two photos show the northern portion of the wetland with the Coast Guard Lighthouse station in the right background. The lower photos show the south end of the wetland system with the forested upland bluff in the left background. The area in the background is the developed portion of the Point No Point area and the remainder of the wetland system, which extends to the base of the slope in the background. The ditch through the middle of the lower photos is the main channel that originates along Point No Point Road to the west.

POINT NO POINT
BIOLOGICAL ASSESSMENT PHOTOS

These photos were taken along Point No Point Road, which borders the entire western portion of the wetland (right side of photo). The upper photo primarily shows the road and the ditch along the road that connects to the wetland via culvert (white lines across pavement). The lower photo shows the wetland located at the other end of the culvert and as can be seen in both photos, the water level is only 6 inches to 1 foot below the top of the road. This portion of the road is flooded first because it is so low and immediately influences the homes and drainfields on the left side of the photo.

POINT NO POINT
BIOLOGICAL ASSESSMENT PHOTOS

These photos show a more close up view of the area shown in the previous two photos. The upper photo shows the high water level at the culvert outlet (crossing Point No Point Road) into the Point No Point Wetland. The lower photo shows the area of wetland just north of the culvert outlet. Note the high water level in the lower photo in relation to the top of the road.

POINT NO POINT
BIOLOGICAL ASSESSMENT PHOTOS

These photos show the west end of the wetland that occur just south of Point No Point Road before it curves to the north (previous two photos). The upper photo shows the channelized stream as it flows east toward the tide gate and through an area dominated by reed canary grass. The lower photo shows the ditch and wetland closer to Hillview Drive. Note the high water level in the ditch. The road is higher in elevation at this point but developed areas north of the road (no photos taken) are at least 1 foot below the level of the road.

POINT NO POINT
BIOLOGICAL ASSESSMENT PHOTOS

These photos give an idea of the development south of the Point No Point Wetland is like. The homes in the background are accessed via Hillview Drive, which crosses the west end of this wetland and frequently floods in winter. The stream flows down on the right side of the lower photo and by the time it reaches the area from which the photos were taken, it becomes channelized and flows along the road.

CHECKLIST FOR ENVIRONMENTAL BASELINE
POINT NO POINT DRAINAGE IMPROVEMENT PROJECT
FOR
POINT NO POINT WETLAND

	ENVIRONMENTAL BASELINE			EFFECTS OF THE ACTIONS		
PATHWAYS/INDICATORS	**Properly functioning**	**At Risk**	**Not Properly Functioning**	**Restore**	**Maintain**	**Degrade**
WATER QUALITY						
Temperature			X		X	
Sediment			X		X	
Chemical Contaminants/Nutrients	X				X	
HABITAT ACCESS						
Physical Barriers		X			X	
HABITAT ELEMENTS						
Substrate		X			X	
Large Woody Debris			X		X	
Pool Frequency			X		X	
Pool Quality			X		X	
Off-Channel Habitat			X		X	
Refugia			X		X	
CHANNEL CONDITION & DYNAMIC						
Width/Depth Ratio			X		X	
Streambank Condition			X		X	
Floodplain Connectivity			X		X	
FLOW/HYDROLOGY						
Peak/Base Flows			X		X	
Drainage Network			X		X	
WATERSHED CONDITIONS						
Road Density and Location			X		X	
Disturbance History			X		X	
Riparian Reserves			X		X	

Appendix D

WETLAND IDENTIFICATION AND ASSESSMENT

Hansville and Point No Point Wetlands

Hansville, Washington

Prepared For:

Hansville Chamber of Commerce
P. O. Box 272
Hansville, Washington 98340

Prepared By:

Ron Vanbianchi
Pacific Wetland Nursery, Inc.
7035 Crawford Drive
Kingston, Washington 98346

Funded By:

Puget Sound Water Quality Authority
Public Involvement and Education Program

August 30, 1991

Apperdix E

wetland's east and north borders, and did not require entry into the wetland. In addition, many residents interviewed during this study reported noticing the nesting great blue herons gathering nesting material or flying to and from the rookery.

The wetland's high diversity of plants and animals provides an excellent opportunity for wetland education classes. However, since the wetland is privately owned, access is restricted and limits educational use.

3.1.10. Wetland Category

The Hansville wetland meets the Washington Department of Ecology's criteria for Category II wetlands because it contains documented priority species and habitat recognized by the Washington Department of Wildlife, and the wetland scores greater than 10 points for significant habitat value (Appendix F).

The Department of Ecology's Wetlands Rating System characterizes Category II wetlands as "...wetlands that: 1) provide habitat for very sensitive or important wildlife or plants; 2) are difficult to replace; or 3) provide very high functions and values, particularly wildlife habitat. These wetlands...need a high level of protection."

3.2. POINT NO POINT WETLAND

3.2.1. Summary

The Point No Point wetland encompasses about 28 acres and includes palustrine emergent, scrub-shrub, and forested wetland communities. The wetland receives surface water from an unnamed creek, and from groundwater seeps located along a portion of its south border. The wetland is isolated from saltwater inflow by a tide gate.

Since most human activity near the wetland is oriented towards Puget Sound and the wetland is not located along a major road, the Point No Point wetland experiences a lower level of chronic noise and visual impacts from human activity than the Hansville wetland. A secondary road borders the wetland on the north side, a tertiary road bisects the wetland to provide access to residences located south of the wetland, and natural areas border most of the south side. A natural beach berm and intertidal area along the wetland's east border separates the wetland from Puget Sound.

3.2.2. Extent (Figure 8)

The north, east, west, and portions of the south limits of the wetland are clearly defined by roads or abrupt changes in slope, vegetation, or soils. However, within a red alder forest along the south boundary, a broad transition to upland conditions makes the wetland boundary less obvious. In addition, forest vegetation

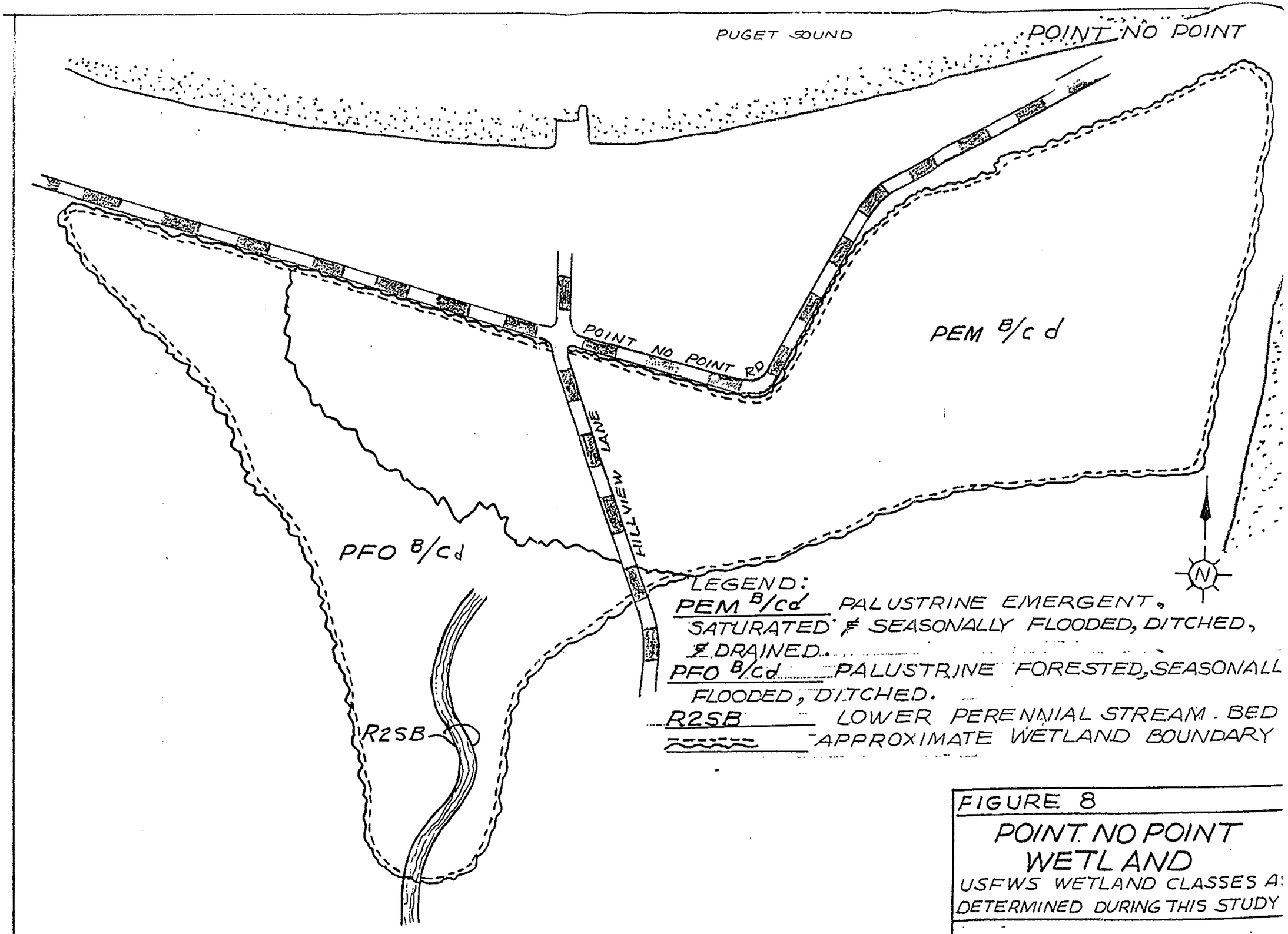


FIGURE 8

POINT NO POINT WETLAND

USFWS WETLAND CLASSES A
DETERMINED DURING THIS STUDY

obscures landmarks and makes locating a boundary on a map or aerial photograph difficult without a professional topographic survey. As a result, the southwest boundary indicated in Figure 8 is based on historical aerial photography and limited field observations, and may be significantly altered when further studies are conducted.

3.2.3 Previous Wetland Mapping

The NWI Hansville quadrangle map provides a reasonably good estimate of the size and diversity of the Point No Point wetland (Figure 9). The NWI map identifies most of the emergent wetland community, but does not identify the forested community located in the wetland's southwest corner. The emergent communities are identified as seasonally and temporarily flooded palustrine emergent wetland that have been ditched. The unnamed stream entering the wetland is identified as a riverine upper perennial open water system.

Figure 8 portrays the wetland classes identified during this study.

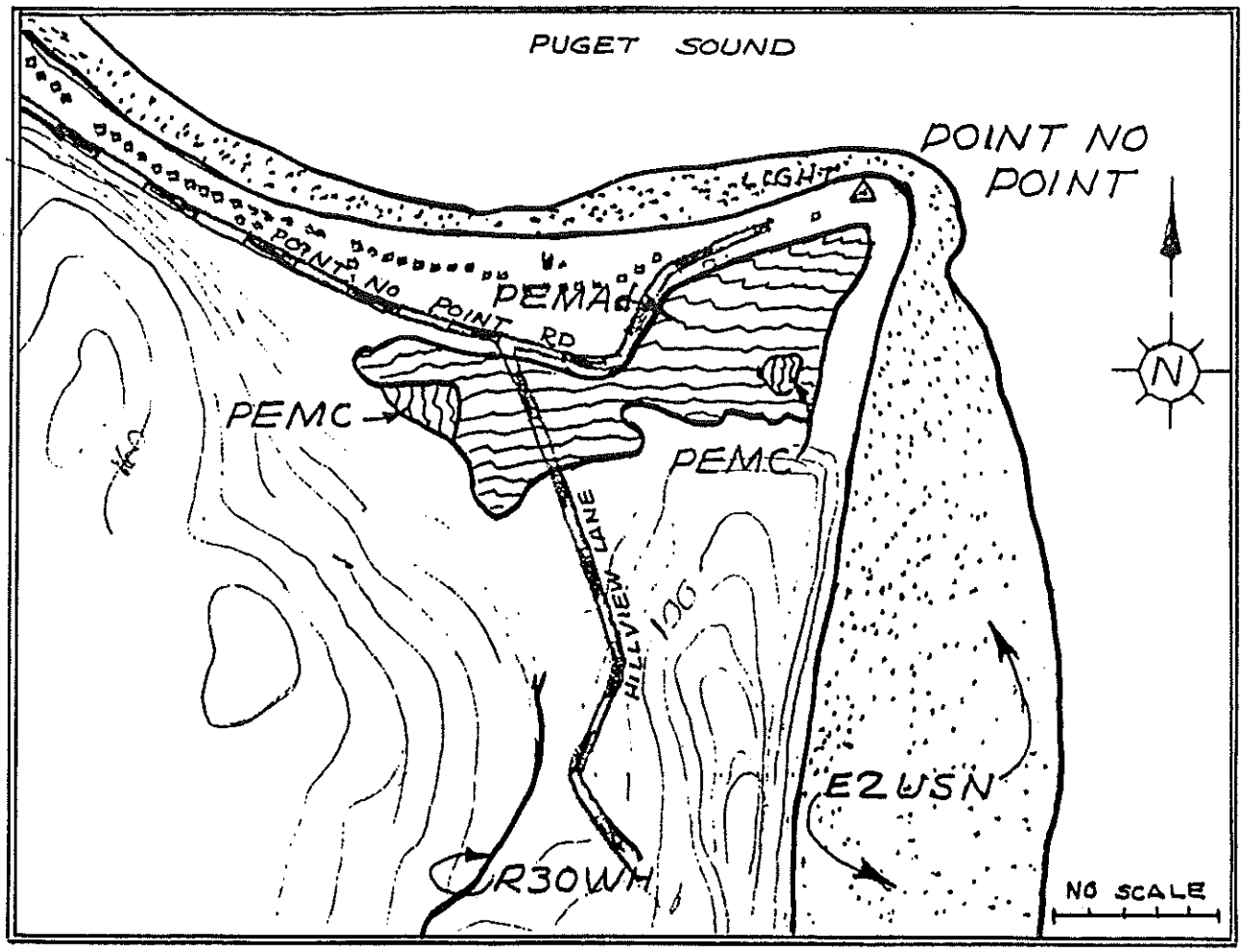
The Washington Coastal Zone Atlas correctly identifies the emergent portion of the Point No Point wetland as "coastal freshwater marsh" and "salt meadow," but does not identify the forested wetland. Instead, the forested portion is incorrectly identified as upland broadleaf forest.

3.2.4 Vegetation

Figure 10 provides a map of the existing vegetation at the Point No Point wetland, and includes the following vegetation classes:

1 Redtop-Pacific Silverweed This community is similar to the one described for the Hansville wetland, with redtop and Pacific silverweed as the primary dominants throughout the mapped area. Baltic rush and birdsfoot trefoil (a species probably introduced for its livestock forage value) dominate portions of the plant community within the redtop-Pacific silverweed matrix. Tall fescue, velvet grass, and meadow barley grow and sometimes dominate in slightly raised areas.

Natural drainage channels and small depressions containing permanent or semi-permanent standing water are also present within the redtop-Pacific silverweed community. Plant species growing in the channels include Lyngby's sedge, seaside arrowgrass, saltgrass, and seaside bulrush. These species were only observed in the east half of the wetland (the portion east of Hillview Lane), where tidal influence was strongest before the tide gate preventing saltwater intrusion was installed, and saltwater occasionally still washes over the beach berm during severe storms.

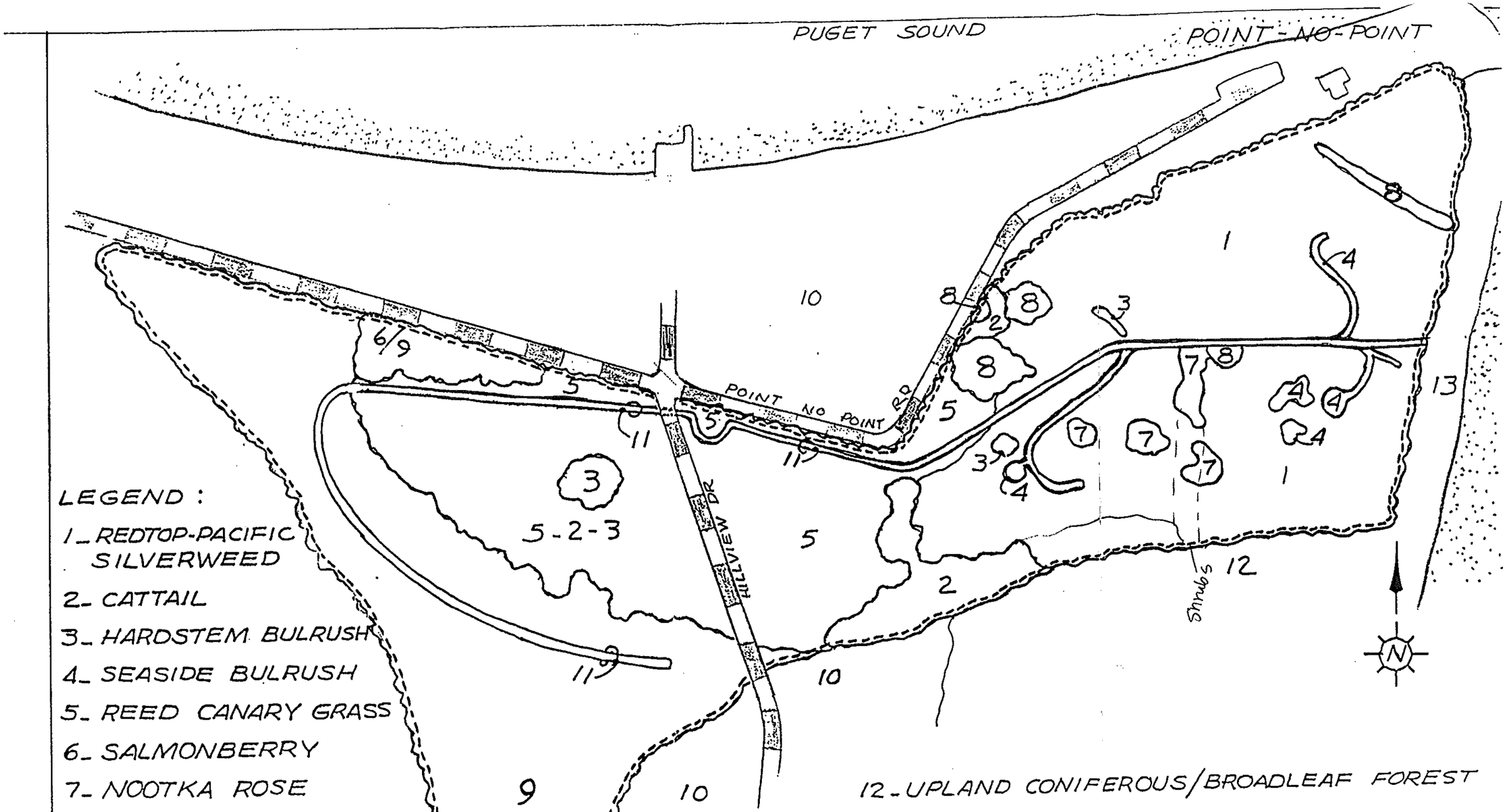


POINT NO POINT WETLAND NATIONAL WETLAND INVENTORY

LEGEND:

PEMAd	DITCHED, TEMPORARILY FLOODED PALUSTRINE EMERGENT WETLAND.
PEMC	SEASONALLY FLOODED PALUSTRINE EMERGENT WETLAND
E2USN	REGULARLY FLOODED INTERTIDAL ESTUARINE UNCONSOLIDATED SHORE WETLAND.
R3OWH	PERMANENTLY FLOODED UPPER PERENNIAL OPEN WATER RIVERINE WETLAND

FIGURE 9



LEGEND :

1_ REDTOP-PACIFIC SILVERWEED
2_ CATTAIL
3_ HARDSTEM BULRUSH
4_ SEASIDE BULRUSH
5_ REED CANARY GRASS
6_ SALMONBERRY
7_ NOOTKA ROSE
8_ HIMALAYAN BLACKBERRY
9_ RED ALDER
10_ RESIDENTIAL OR COMMERCIAL DEVELOPMENT
11_ DITCHES
12_ UPLAND CONIFEROUS/BROADLEAF FOREST
13_ BEACH BERM
APPROXIMATE WETLAND BOUNDARY.

FIGURE 10

POINT NO POINT WETLAND VEGETATION MAP

Additional species indicating brackish conditions in the easternmost portion of the wetland include springbank clover and pickleweed.

The redtop-Pacific silverweed community provided pasture for livestock until the mid-1940s (Neff, personal communication).

2 Cattail Common cattail forms a large stand in the south-central portion of the wetland and also co-dominates with reed canary grass and hardstem bulrush near the west end of the emergent wetland community.

3 Hardstem Bulrush Hardstem bulrush forms small, pure stands within the redtop-pacific silverweed and reed canary grass communities, and also co-dominates in some areas with reed canary grass and common cattail.

4 Seaside Bulrush Seaside bulrush forms dense stands surrounding the small seasonal or semi-permanent ponds and in the natural drainage channels in the east half of the wetland.

5 Reed Canary Grass Reed canary grass forms a dense thicket dominating the west half of the emergent wetland community. Although much of this area contains only red canary grass, common cattail and hardstem bulrush also dominate areas with permanent shallow standing water within the reed canary grass community. The area dominated by reed canary grass was last used as pasture for livestock in the early 1960's (Neff, personal communication). Other residents report the canary grass was occasionally mowed to produce hay.

6 Salmonberry Salmonberry grows in a dense thicket containing scattered red alder trees along a portion of the wetland's north boundary.

7 Nootka Rose Nootka rose forms dense thickets in the east-central portion of the wetland, and also within the beach berm communities along the wetland's east border.

8 Himalayan Blackberry Himalayan blackberry forms dense thickets on wetland soils dredged and piled next to the drainage ditch in the east half of the wetland, and on filled areas along portions of the wetland's north boundary.

9 Red Alder Red alder swamp dominates the forested portion of the Point No Point wetland. Red alder with a diameter at breast height estimated at 8 - 14 inches dominates the

overstory, with scattered individuals of young western red cedar reaching into the upper canopy. Salmonberry forms a dense shrub layer, with piggyback plant, hedge nettle, and slough sedge providing ground cover. Under openings in the tree canopy, skunk cabbage, mannagrass, lady fern, and water parsley grow luxuriantly in the saturated soils.

10 Residential and Commercial Development Residential and commercial development is primarily limited to the north side of the Point No Point wetland. Mr. John Neff, a longtime resident of Hansville, reports that portions of the residential community were created by filling wetland areas. Mr. Neff recalls a pond on the north side of the road at the point where the road bends to the left after passing the entrance to the Point No Point Resort.

The only recent development-related disturbance to the wetland observed during our site visits was a previously forested area along Point No Point Road where trees have been cleared and a gravel road constructed across the wetland.

11 Ditches The wetland's main drainage ditch diverts water from the unnamed stream within the red alder swamp around the reed canary grass community at the wetland's west end, runs the length of the wetland, and flows into a culvert to enter Puget Sound. A tide gate on the culvert prevents salt water from entering the wetland.

Secondary ditches cut through the redtop-Pacific silverweed and reed canary grass communities before 1965 have become overgrown, primarily with common cattails.

12 Upland Coniferous/Broadleaf Forest A steep bluff supporting a forest community with a mixed canopy dominated by Douglas fir, grand fir, and red alder borders the southeast portion of the wetland. All of the mixed forest area bordering the wetland is included in County Park.

13 Beach Berm Dune wildrye dominates the beach berm plant community along the wetland's east border. Additional species in this community include beach peavine, Nootka rose, nodding onion, ambrosia, and yarrow. A small remnant of beach berm community also exists on the north side of the wetland, located between the lighthouse and the residential area to the west. Bighead sedge forms large colonies in this area.

The plant communities in the Point No Point wetland are typical of other disturbed coastal freshwater wetlands in the Puget Sound

Basin. No rare plant species or communities were observed during the field work for this report.

Washington Natural Heritage Program records show that pink sandverbena, a plant species thought to be extinct or extirpated in Washington, was recorded from the Point No Point beach berm community during the late 1800s (Appendix E).

3.2.5. Soils

Hydric soils mapped by the US Soil Conservation Service (1980) in the Point No Point wetland include Tacoma silt loam and beach (Figure 11). Tacoma silt loam is considered hydric because it is a very poorly drained soil formed in alluvium (material such as sand, silt, or clay deposited by streams) and organic material. According to the SCS it is poorly suited to homesites because of wetness and flooding. Beaches are considered hydric because they are regularly flooded during the growing season.

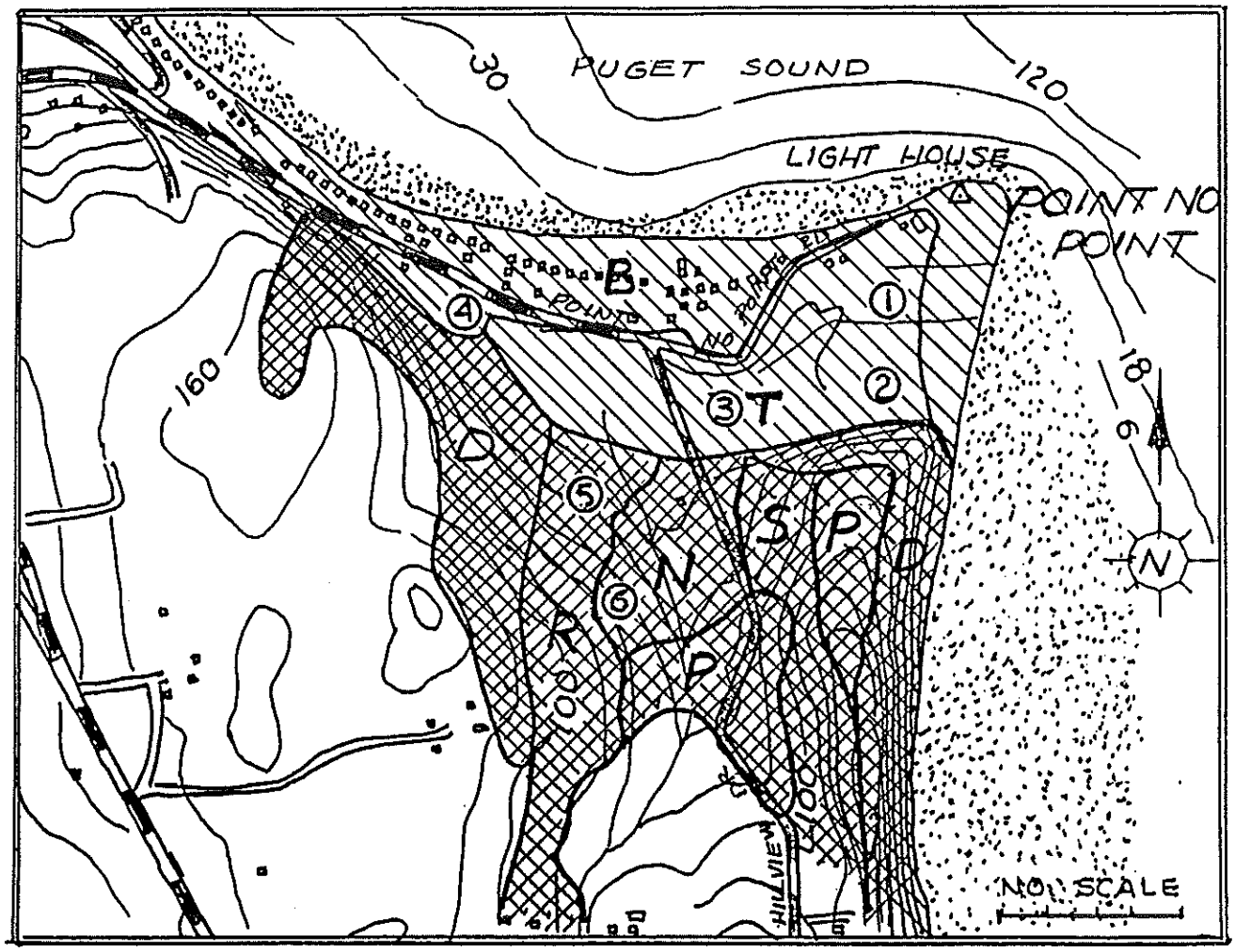
Although my observations confirmed the presence of hydric soil areas as mapped by the SCS in the emergent wetland, my observations suggest organic soil is present as well as the Tacoma silt loam (which is a mineral soil). Soil pits in the redtop-Pacific silverweed community revealed muck soils similar to the Semiahmoo Muck soil mapped in the Hansville wetland.

In addition, my observations indicate hydric soils extend into the Neilton and Ragnar soil areas mapped along the unnamed stream that enters the wetland, and into the red alder-forested area at the west end of the wetland. Soils in portions of the red alder swamp area contain large amounts of organic matter, resembling the Semiahmoo muck soil mapped in the Hansville wetland.

Hydric soils end abruptly at the wetland's west end at the base of fill material placed for residential construction. I did not determine the southern extent of hydric soils along the unnamed stream channel. Soil characteristics in both these areas are similar to those observed in the emergent wetland area.

In contrast to the Hansville wetland described above, the original area of the Point No Point wetland has not been significantly reduced by filling. As a result, the wetland probably still occupies nearly the same area today as it did when the area was first settled.

Non-hydric soils adjoining the hydric soils are mapped as Ragnar, Neilton, and Dystric Xerorthents. All three soil types are considered excessively drained or well drained.



POINT NO POINT WETLAND SOILS

(SOURCE : USDA SOIL CONSERVATION SERVICE, 1980)

HYDRIC SOILS
T = TACOMA SILT LOAM
B = BEACHES

UPLAND SOILS (NON HYDRIC)
R = RAGNAR FINE SANDY LOAM
D = DYSTRIC XERORTHENTS
N = NEILTON GRAVELLY LOAMY SAND
S = SINCLAIR
P = POULSBO GRAVELLY SANDY LOAM
① = SOIL PITS

FIGURE 11

3.2.6. Hydrology

The Point No Point wetland receives surface water flow from an unnamed perennial creek that enters the wetland near the southwest corner (Figure 12). This creek is the wetland's only surface water source located during this study. The stream's headwaters are located about 1 mile south of the wetland. Although the stream's banks are forested for most of its length, a short section of the stream located about 1/2 mile south of the wetland has been degraded by unrestricted livestock access.

Originally the creek flowed into the Point No Point wetland at the southern limit of the red alder swamp and entered the emergent community where Hillview Lane crosses the southern wetland boundary. After flowing through a culvert under Hillview Lane the channel meandered through the emergent community and entered Puget Sound through an opening in the beach berm forming the wetland's east boundary (this assumption is based on the appearance of natural drainage channels in aerial photos taken in 1965, and reports from local residents).

Prior to 1950, drainage channels were cut into the wetland to promote drainage and increase the wetland's usefulness as pasture. Drainage channels dissected the emergent community and directed water into the perennial stream, which was channelized through the east half of the existing redtop-Pacific silverweed community. A tide gate was also installed, probably at the same time the ditches were being dug. During the 1950s the main drainage channel was cleared by blasting and the original tide gate replaced (Neff, personal communication). Although the tide gate still functions, debris sometimes prevents it from closing. When this occurs, saltwater enters the wetland, flooding the eastern portion (Zimmer, personal communication). Saltwater from Puget Sound also enters the wetland during severe storms and high tides, when waves occasionally overtop the beach berm along the wetland's east border (Nelson, personal communication).

Between 1965 and 1985 additional channels were cut, isolating the perennial stream from its natural channel and directing it around the emergent community in the wetland's west half and into the channelized section created before 1950. This channel system still diverts and directs streamflow through the wetland and into Puget Sound. There was no flow in the original stream channel where it passes under Hillview Lane during late spring and early summer 1991.

The only additional water sources for the Point No Point wetland located during this study were small seeps along the bluff at the wetland's western tip.

Although the drainage ditches have altered the wetland's original

LEGEND :

WATERSHED BOUNDRY

PERENNIAL STREAM FLOW

TIDE GATE

PIEZOMETER LOCATIONS

DRAINAGE DITCHES

FIGURE 12

POINT NO POINT WETLAND HYDROLOGIC FEATURES

hydrology, the wetland has not been effectively drained. Piezometer readings from February to June, 1991 and observations during July 1991 revealed groundwater levels within 6 inches of the ground surface at both stations for the first two months of the growing season (March 1 - May 1; Figures 12 and 13). In addition, informal observations by volunteers observing wildlife confirm the marsh plant communities contain standing water over much of their surface during the wet season.

Although the data are limited to two locations, the piezometer readings indicate the wetland has a typical wetland hydrologic cycle, with high groundwater or standing surface water during the wet season, and water levels lowering as the dry season progresses (Figure 13). For example, the piezometer located near the Point No Point Lighthouse had water within 6 inches of the soil surface in late April. By early July no water was present in the piezometer, and soils in the area were only squeeze test saturated.

3.2.7. Kitsap County Zoning and Shoreline Management Master Program Designation

The Point No Point wetland is included in an area designated Ru 2.5 ac by Kitsap County. The Ru 2.5 ac designation means that the area is zoned for a minimum lot size of 100,000 square feet.

The Point No Point wetland is included in the area designated semi-rural under the Kitsap County Shoreline Management Master Program (Kitsap County, 1977). Although the predominant landscape feature in semi-rural areas is modification by man, natural systems still provide significant benefits. The intent of the semi-rural designation is to provide a balance between residential and commercial development, and natural systems.

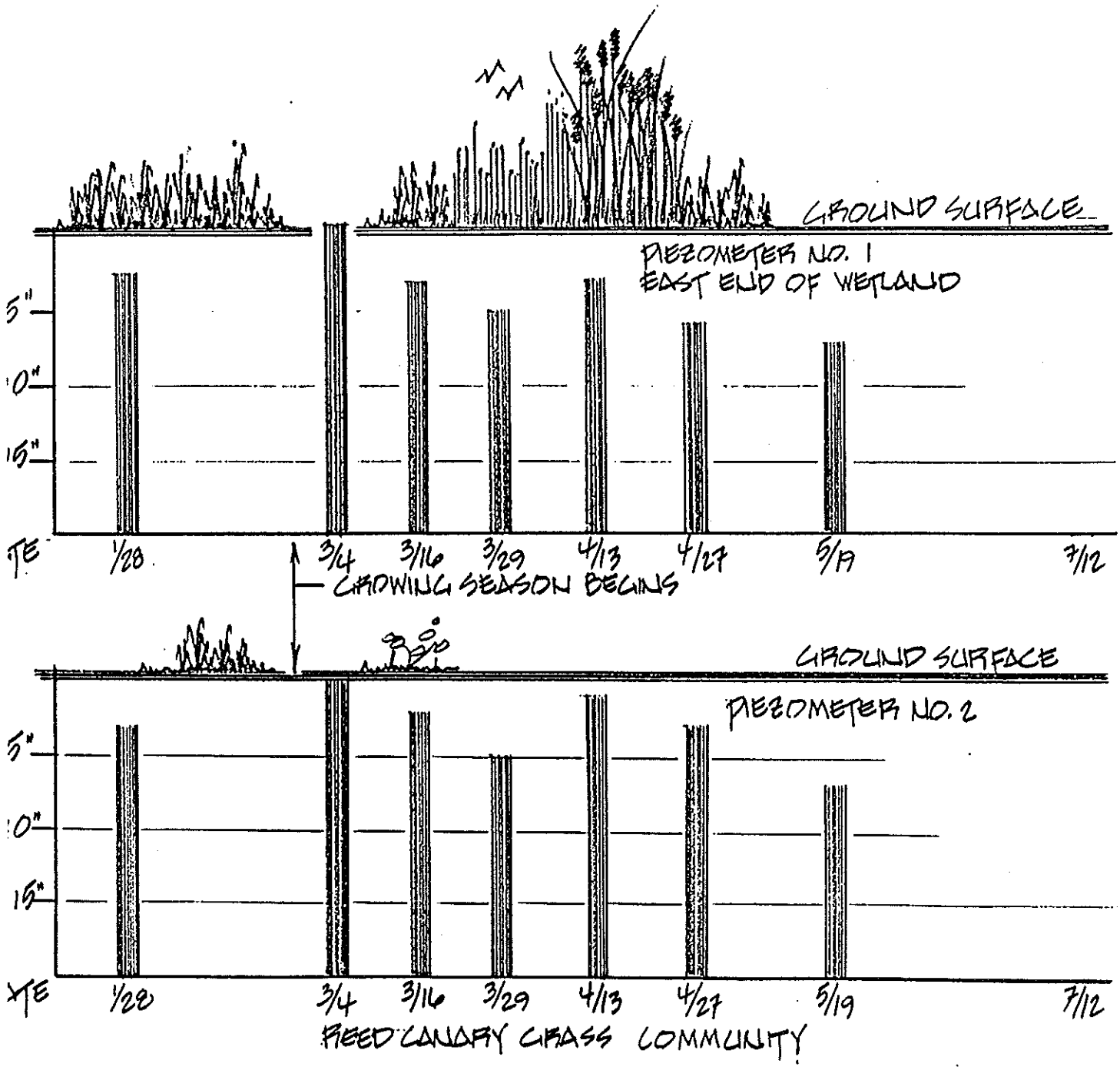
3.2.8. Wildlife Use

The Point No Point wetland provides protective cover, breeding, and feeding habitat for a wide variety of wildlife species (Appendix C).

Mammals Mammals (or their sign) observed within the Point No Point wetland include a coyote walking through the redtop-Pacific silverweed community, black-tailed deer and raccoon in the red alder swamp, and river otters in the stream channel, on the beach berm, and venturing into the red alder swamp. Meadow vole tunnels are abundant throughout the redtop-Pacific silverweed areas.

Birds Wildlife observers documented a total of 90 species of birds using the Point No Point wetland. This probably represents most of the birds that use the wetland since the list was compiled from observations recorded during this study and augmented by several years' observations by a local resident, Mr. Vic Nelson.

IGURE 13
ROUND WATER LEVELS
DINT. NO. POINT WETLAND



The greater number of bird species reported from this wetland than from the Hansville wetland can probably be attributed to three factors; the longer observation period and greater expertise of the volunteers observing the Point No Point wetland, and the presence of open water in the Point No Point wetland.

Song sparrows, marsh wrens, rufous-sided towhees, and other year-round resident songbirds were regularly observed throughout the emergent portion of the wetland. Red-winged blackbirds and marsh wrens use the cattail areas as nest sites; savannah, white-crowned, and song sparrows nest in grassy areas or in the shrub thickets scattered throughout the marsh. Ring-necked pheasants (an introduced species) reside in the marsh year-round and were also frequently sighted or heard. The wetland's small ponds and channelized stream provide resting and foraging areas for waterfowl, including green-winged teal, northern pintail, American wigeon, common goldeneye, and bufflehead.

Red-tailed hawks, northern harriers, and sharp-shinned hawks have been observed feeding in the emergent community. Great blue herons forage in the drainage channels and throughout the redtop-Pacific silverweed community. Bald eagles frequently fly over the wetland, and were observed on one occasion feeding on unidentified prey in the redtop-Pacific silverweed community.

Regularly observed songbirds in the forested portion of the wetland included kinglets, towhees, and chickadees.

Sightings recorded in the wetland of species rarely observed in the area include the peregrine falcon, black swift, lazuli bunting, Lincoln's sparrow, and yellow-headed blackbird.

Reptiles and Amphibians Although not frequently observed or recorded, the wetland probably supports large populations of Pacific tree and red-legged frogs, and common garter snakes.

Endangered, Threatened, and Sensitive Animal Species

A search of the Washington Natural Heritage Data System found no records of endangered, threatened, or sensitive animal species within the Point No Point wetland (Appendix E). An active bald eagle nest is located south of the wetland, within Point No Point County Park. Based on the limited number of times bald eagles were observed using the wetland, It is unlikely that the wetland provides significant habitat for the nesting eagles.

3.2.9. Functions and Values

Water Quality Improvement

Based on its high vegetation density and large size, the Point No

Point wetland has moderate value for water quality improvement. The wetland's value for this function is moderate because there is relatively low opportunity for the wetland to improve water quality, since the watershed is still largely undeveloped and well-vegetated. As residential development within the watershed increases, the wetland's opportunity to improve water quality will probably increase, resulting in a higher value.

Storm and Flood Water Control

Due to its large size and location within the Hansville community the wetland has high potential for floodwater storage. The wetland regularly stores stormwater runoff that backs up and overflows the ditches in the wetland when high tides close the tide gate during the wet season. The Washington Coastal Zone Atlas indicates the Point No Point wetland is an historical flood area (Washington Department of Ecology, 1980).

Groundwater Recharge

The groundwater recharge potential of the wetland was not determined during this study, as this function is difficult to evaluate without detailed knowledge of the hydrologic characteristics of any associated aquifers. However, based on the resence of drainage ditches (which convey water from the wetland) and the small amount of standing water relative to the wetland's surface area, the wetland probably has low value as a groundwater recharge area.

Natural Biological Support

The Point No Point wetland is a high value biological system due to its large size, high plant and animal species richness, and high habitat and structural diversity. Preceding sections of this report contain additional information on the wetland's plant and animal communities.

Aesthetic Recreational, and Educational Value

The culturally perceived values of recreation, aesthetics, and education are difficult to assess. However, the fact that the Point No Point wetland provides open space, visual diversity, and is a dominant natural landscape feature suggests that it has high aesthetic value.

The Point No Point wetland provides an excellent opportunity for recreational birdwatching. Many of the bird and other wildlife species recorded for this study were observed from sites along the wetland's east and north borders, and did not require entry into the wetland.

Since the wetland is privately owned there is limited opportunity

for educational use. If the wetland were publicly owned, its proximity to beach, intertidal, and open saltwater communities would provide excellent opportunities to observe and study the interrelationships of these systems.

3.2.10. Wetland Category

The Point No Point meets the Washington Department of Ecology's criteria for Category II wetlands because scores greater than 10 points for significant habitat value (Appendix F).

The Department of Ecology's Wetlands Rating System characterizes Category II wetlands as "...wetlands that: 1) provide habitat for very sensitive or important wildlife or plants; 2) are difficult to replace; or 3) provide very high functions and values, particularly wildlife habitat. These wetlands...need a high level of protection."

Although sites recognized by state agencies as documented habitat for extirpated plant species meet the criteria for Category 1 wetlands, the historical report of pink sand verbena in the Point No Point beach berm community does not make the wetland itself Category 1 since the beach berm does not support wetland vegetation and is therefore not considered wetland.

4. REGULATORY REQUIREMENTS

Local, State, and Federal regulations apply to development proposals in and near wetlands. Governments and agencies having jurisdiction over development activities that may impact the Hansville and Point No Point wetlands include (but may not be limited to) Kitsap County, Washington Departments of Ecology, Fisheries, and Wildlife, the US Army Corps of Engineers, Environmental Protection Agency, and US Fish and Wildlife Service. To determine permitting requirements, these agencies should be contacted before beginning activities that may impact wetland areas identified in this report.

Kitsap County reviews and comments upon development proposals and has permitting authority through the State Environmental Policy Act review, fill and grading permits, and building permits. The Washington Department of Ecology has review and approval authority for many of the Federal, State, and local permits. In addition, the Washington Departments of Fisheries and Wildlife have hydraulic project permitting authority for structures placed within the ordinary high water level of all lakes and streams.

The US Army Corps of Engineers administers Section 404 of the Clean Water Act, which regulates the discharge of dredged or fill materials into waters of the United States, including wetlands. The Corps is the lead federal agency regulating

activities that impact wetlands. Permit applications submitted to the Corps are also reviewed by the Environmental Protection Agency, US Fish and Wildlife Service, and Washington Department of Ecology. Ecology also reviews federal permit applications to certify compliance with Section 401 of the federal Clean Water Act.

Since portions of both the Hansville and Point No Point wetlands are within 200 feet of the ordinary high water mark of Puget Sound, both wetlands are subject to jurisdiction under the Kitsap County Shoreline Master Program and the State Shoreline Management Act. Development proposals are reviewed and permitted, permitted with conditions, or denied by Kitsap County. Ecology has review authority over permits granted by the County to ensure conformance with the state Shoreline Management Act.

5. REFERENCES

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DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): RU Date: 7/12/91
Project/Site: PT NO PT State: County:
Applicant/Owner: Plant Community #/Name: SAP (1)
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes X No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No X (If yes, explain on back)

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	~~Dominant~~ Associated Plant Species	Indicator Status	Stratum
1. Agrostis alba	FACW		11. Hordeum hypophyllum	FACW	
2.			12. Lupinus bolteri	CRL	
3.			13. Hulsea lyrata	FAC	
4.			14. Distichlis spicata	FACW	
5.			15.		
6.			16.		
7.			17.		
8.			18.		
9.			19.		
10.			20.		

Percent of dominant species that are OBL, FACW, and/or FAC 100%
Is the hydrophytic vegetation criterion met? Yes X No ____
Rationale: Wetland species dominant

SOILS

Series/phase: — Subgroup:[2]
Is the soil on the hydric soils list? Yes ____ No ____ Undetermined ____
Is the soil a Histosol? Yes X No ____ Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes ____ No ____ Gleyed? Yes ____ No ____
Matrix Color: Mottle Colors:
Other hydric soil indicators: 0-30"+ muck w/ silt lenses (5Y4/1)
Is the hydric soil criterion met? Yes X No ____
Rationale: organic soil

HYDROLOGY

Is the ground surface inundated? Yes ____ No X Surface water depth:
Is the soil saturated? Yes ____ No X
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
Piezometer #1 data
Is the wetland hydrology criterion met? Yes X No ____
Rationale: Saturation during growing season

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes X No ____
Rationale for jurisdictional decision:
wetland vegetation, soil, & hydrology present

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): RJ Date: 8/12/91
Project/Site: PT NO PT State: County:
Applicant/Owner: Plant Community #/Name: ST 2
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes X No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No X (If yes, explain on back)

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
1. Salix sombreriana	FAC	T	11.		
2. Pyrus fusca	FAC	S	12.		
3. Rubus spectabilis	FAC	S	13.		
4. Oenanthe sarmentosa	OBL	H	14.		
5. Potentilla pacifica	OBL	H	15.		
6.			16.		
7.			17.		
8.			18.		
9.			19.		
10.			20.		

Percent of dominant species that are OBL, FACW, and/or FAC 100%
Is the hydrophytic vegetation criterion met? Yes X No ____
Rationale: wetland spp. dominant

SOILS

Series/phase: TACOMA Subgroup:[2]
Is the soil on the hydric soils list? Yes X No ____ Undetermined ____
Is the soil a Histosol? Yes ____ No X Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes ____ No ____ Gleyed? Yes ____ No ____
Matrix Color: Mottle Colors:
Other hydric soil indicators:
Is the hydric soil criterion met? Yes ____ No ____
Rationale: combined hydric soil

HYDROLOGY

Is the ground surface inundated? Yes ____ No X Surface water depth:
Is the soil saturated? Yes X No ____
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.
Squeeze test saturated to surface
Is the wetland hydrology criterion met? Yes X No ____
Rationale: observed hydrology

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes X No ____
Rationale for jurisdictional decision: wetland vegetation, soil, & hydrology present

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): RJ Date: 12/17/91
Project/Site: PT NO 9T State: County:
Applicant/Owner: Plant Community #/Name: 39(3)
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes X No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No X (If yes, explain on back)

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	Associated ~~Dominant~~ Plant Species	Indicator Status	Stratum
1. Potentilla pacifica	OBL	H	11. Hordeum brachyantherum	FACW	
2. Juncus balticus	OBL	H	12. Lotus corniculatus	FAC	
3.			13.		
4.			14.		
5.			15.		
6.			16.		
7.			17.		
8.			18.		
9.			19.		
10.			20.		

Percent of dominant species that are OBL, FACW, and/or FAC 100%
Is the hydrophytic vegetation criterion met? Yes X No ____
Rationale: wetland spp. dominant

SOILS

Series/phase: ____ Subgroup:[2]
Is the soil on the hydric soils list? Yes ____ No ____ Undetermined ____
Is the soil a Histosol? Yes ____ No X Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes X No ____ Gleyed? Yes ____ No ____
Matrix Color: 0-6" 10YR3/2; 6-18" 2.5Y 3/2 Mottle Colors: 0-6" 10YR3/6; 6-18" 10YR3/1
Other hydric soil indicators:
Is the hydric soil criterion met? Yes X No ____
Rationale: soil color;

HYDROLOGY

Is the ground surface inundated? Yes ____ No X Surface water depth:
Is the soil saturated? Yes ____ No X
Depth to free-standing water in pit/soil probe hole: none
List other field evidence of surface inundation or soil saturation.
observed saturation during march
Is the wetland hydrology criterion met? Yes X No ____
Rationale: observed wetland hydrology

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes X No ____
Rationale for jurisdictional decision: wetland vegetation, soil, & hydrology present

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): RJ Date: 8/12/91
Project/Site: PT NJ PT State: County:
Applicant/Owner: Plant Community #/Name: SR 4
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes X No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No X (If yes, explain on back)

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	~~Dominant~~ associated Plant Species	Indicator Status	Stratum
1. Alnus rubra	FAC	T	11. Oenanthe sarmentosa	OBL	H
2. Carex obnupta	OBL	H	12. Equisetum telmateia	FACW	H
3. Rubus spectabilis	FAC	S	13.		
4.			14.		
5.			15.		
6.			16.		
7.			17.		
8.			18.		
9.			19.		
10.			20.		

Percent of dominant species that are OBL, FACW, and/or FAC 100%
Is the hydrophytic vegetation criterion met? Yes X No ____
Rationale: wetland spp. dominant

SOILS

Series/phase: Beach Subgroup:[2]
Is the soil on the hydric soils list? Yes X No ____ Undetermined ____
Is the soil a Histosol? Yes ____ No X Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes ____ No X Gleyed? Yes ____ No ____
Matrix Color: Mottle Colors:
Other hydric soil indicators: 0-8"+ 10YR 2/1; 8"+ compact sand
Is the hydric soil criterion met? Yes X No ____
Rationale: buried hydric soil; low chroma color

HYDROLOGY

Is the ground surface inundated? Yes ____ No X Surface water depth:
Is the soil saturated? Yes X No ____
Depth to free-standing water in pit/soil probe hole: 8"; squeeze test saturated to surface
List other field evidence of surface inundation or soil saturation.

Is the wetland hydrology criterion met? Yes X No ____
Rationale: observed saturation

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes X No ____
Rationale for jurisdictional decision: wetland vegetation, hydrology, & soil present

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): RJ Date: 7/12/91
Project/Site: PT HO PT State: County:
Applicant/Owner: Plant Community #/Name: SP (5)
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes X No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No X (If yes, explain on back)

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	Dominant Plant Species	Indicator Status	Stratum
1. Alnus rubra	FAC	T	11.		
2. Rubus spectabilis	FAC	S	12.		
3. Lysichitum americanum	OBL	H	13.		
4. Oenanthe sarmentosa	OBL	H	14.		
5. Glyceria grandis	OBL	H	15.		
6.			16.		
7.			17.		
8.			18.		
9.			19.		
10.			20.		

Percent of dominant species that are OBL, FACW, and/or FAC 100%
Is the hydrophytic vegetation criterion met? Yes X No ____
Rationale: wetland spp. dominant

SOILS

Series/phase: Subgroup:[2]
Is the soil on the hydric soils list? Yes ____ No ____ Undetermined ____
Is the soil a Histosol? Yes ____ No ____ Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes ____ No X Gleyed? Yes ____ No ____
Matrix Color: Mottle Colors:
Other hydric soil indicators: soil color 10YR 2/1
Is the hydric soil criterion met? Yes X No ____
Rationale: low chroma soil color

HYDROLOGY

Is the ground surface inundated? Yes X No ____ Surface water depth: ≈ 1"
Is the soil saturated? Yes ____ No ____
Depth to free-standing water in pit/soil probe hole:
List other field evidence of surface inundation or soil saturation.

Is the wetland hydrology criterion met? Yes X No ____
Rationale: observed inundation

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes X No ____
Rationale for jurisdictional decision: wetland vegetation, soil, & hydrology present

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

DATA FORM
ROUTINE ONSITE DETERMINATION METHOD[1]

Field Investigator(s): RV Date: 8/12/91
Project/Site: FT NO PT State: County:
Applicant/Owner: Plant Community #/Name: SP (6)
Note: If a more detailed site description is necessary, use the back of data form or a field notebook.

Do normal environmental conditions exist at the plant community?
Yes X No ____ (If no, explain on back)
Has the vegetation, soils, and/or hydrology been significantly disturbed?
Yes ____ No X (If yes, explain on back)

VEGETATION

Dominant Plant Species	Indicator Status	Stratum	~~Dominant~~ Associated Plant Species	Indicator Status	Stratum
1. Alnus rubra	FAC	T	11. Lysichitum americanum	OBL	
2. Rubus spectabilis	FAC	S	12. Equisetum telmateia	FACW	
3. Ribes bracteosum	FAC	S	13. Vitis divisa	FAC	
4. Tolmiea menziesii	FAC	H	14. Thuja plicata	FAC	
5.			15. Tsuga heterophylla	FACU	
6.			16.		
7.			17.		
8.			18.		
9.			19.		
10.			20.		

Percent of dominant species that are OBL, FACW, and/or FAC 100%
Is the hydrophytic vegetation criterion met? Yes X No ____
Rationale: wetland spp dominant

SOILS

Series/phase: Subgroup:[2]
Is the soil on the hydric soils list? Yes ____ No ____ Undetermined ____
Is the soil a Histosol? Yes ____ No ____ Histic epipedon present? Yes ____ No ____
Is the soil: Mottled? Yes ____ No X Gleyed? Yes ____ No ____
Matrix Color: Mottle Colors:
Other hydric soil indicators: 0-18" 10YR 2/1
Is the hydric soil criterion met? Yes X No ____
Rationale: low chroma color

HYDROLOGY

Is the ground surface inundated? Yes ____ No X Surface water depth:
Is the soil saturated? Yes ____ No X
Depth to free-standing water in pit/soil probe hole: none
List other field evidence of surface inundation or soil saturation.
drift lines & sediment deposits
Is the wetland hydrology criterion met? Yes X No ____
Rationale: observed evidence

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the plant community a wetland? Yes X No ____
Rationale for jurisdictional decision: wetland vegetation, soil, hydrology present

[1] This data form can be used for the Hydric Soil Assessment Procedure and the Plant Community Assessment Procedure.
[2] Classification according to "Soil Taxonomy."

POINT NO POINT
WETLAND DELINEATION
AND ASSESSMENT REPORT

Prepared for:

Mr. Phil Pearl
Open Space Resources
302 Malden Avenue East, #3
Seattle, Washington 98112

Prepared by:

Ms. Kim Harper
Sheldon & Associates, Inc.
5031 University Way NE
Seattle, Washington 98105-4341
206/522-1214

October 14, 1998

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TABLE OF CONTENTS

1.0 INTRODUCTION 1

2.0 METHODS 1
- 2.1 Review of Existing Information 1
- 2.2 Evaluation of Field Conditions 1
- 2.3 Wetland Criteria 4
  - Hydrology 4
  - Vegetation 4
  - Soils 5

3.0 FINDINGS 5
- 3.1 Summary of Overall Field Conditions 5
- 3.2 Wetland Findings 6
  - Hydrology 8
  - Vegetation 8
  - Soils 11
  - Wetland Classification and Rating 12
- 3.3 Wildlife Findings 12

4.0 POTENTIAL IMPACTS FROM SITE DEVELOPMENT 13

5.0 REGULATORY ISSUES 13

6.0 REFERENCES 15

LIST OF TABLES AND FIGURES

Table 1. Wetland Plant Indicator Status 5
Table 2. Wildlife Species or Signs Observed in Point No Point Wetland 12

Figure 1 - Vicinity Map 2
Figure 2 - Property Boundaries 3
Figure 3 - Soils Map 7
Figure 4 - Site Map 9

APPENDIX A - Surveyed Wetland Boundary Map
APPENDIX B - Data Forms

1.0 INTRODUCTION

A delineation was conducted for a large wetland that occurs adjacent to the shoreline of Puget Sound, behind the beach berm. The site is located at Point No Point, near the town of Hansville, in unincorporated Kitsap County. It lies in Sections 15 and 22, Township 28 North, Range 2 East (see Figure 1 - Vicinity Map). Sheldon & Associates, Inc. was contracted by Open Space Resources to flag the wetland boundary and to identify potential buildable areas on the property. The property in question consists of six tax parcels that total roughly 28 acres in size. This property is under consideration for inclusion in the Kitsap County Open Spaces Program.

The wetland was delineated based on the methods in the *Washington State Wetlands Identification and Delineation Manual* (Washington State Department of Ecology 1997). All wetland area that occurs within the designated property boundaries was delineated. Wetland area extending outside of the property boundaries was not delineated.

2.0 METHODS

2.1 Review of Existing Information

Existing documents were reviewed to gain specific background knowledge of the site. The following maps and documents were reviewed as part of the wetlands study:

- Kitsap County Draft Critical Areas Ordinance (Kitsap County 1997);
- Soil Survey, Kitsap County Area, Washington, Sheet Number 9 (McMurphy 1980);
- USGS Topographic Map, Hansville Quadrangle, scale 1:24,000;
- National Wetlands Inventory Map, Hansville Quadrangle, scale 1:24,000;
- Wetland Identification and Assessment Report, Hansville and Point No Point Wetlands (Vanblanchi 8/30/91);
- oblique aerial color photos provided by Phil Pearl, no scale, dated 9/28/98; and
- aerial color photo provided by Walker & Associates, scale 1"=200', dated 9/9/97.

2.2 Evaluation of Field Conditions

The wetland delineation was conducted by Kim Harper of Sheldon & Associates on September 29 and 30, 1998. Weather conditions for these days were clear and sunny with moderately warm temperatures hovering around 65°-70° Fahrenheit. While several minor rain events had occurred in the preceding month, the total rainfall for the preceding three months was well below average.

The area examined for wetlands includes all land falling within the boundaries of the six tax parcels indicated on Figure 2 Property Boundaries. However, the wetland boundaries were flagged somewhat beyond the property boundaries in some areas to assure that all wetland areas onsite were delineated).

As part of the delineation, data were collected on wetland characteristics such as vegetation, soils, and hydrology. Data plots were established at representative points along the wetland edge, and at each location, a wetland/non-wetland determination was made. Pink and black-striped flagging was hung on vegetation to demarcate the wetland edge. The points were numbered sequentially.

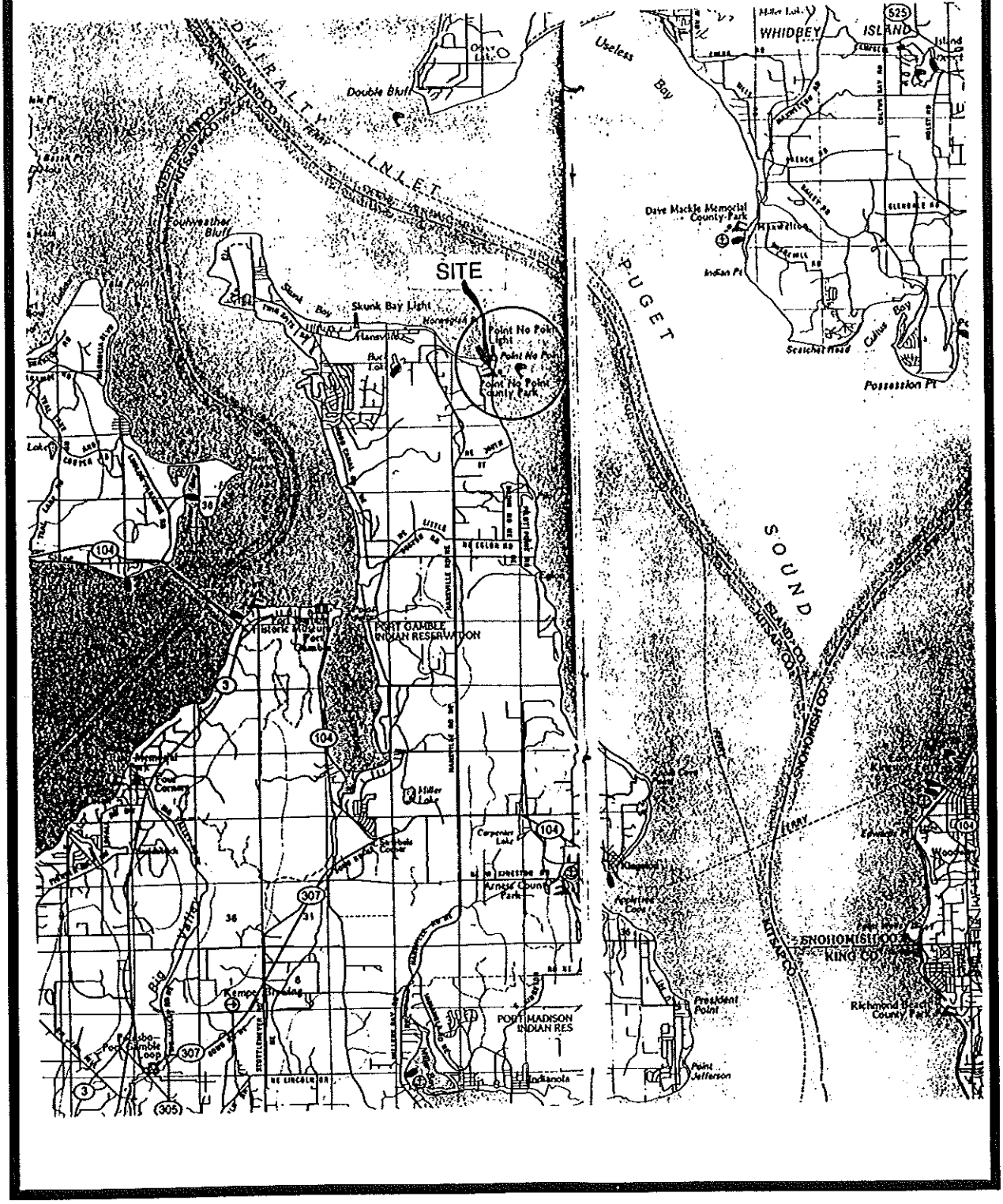

Figure 1 - Vicinity Map

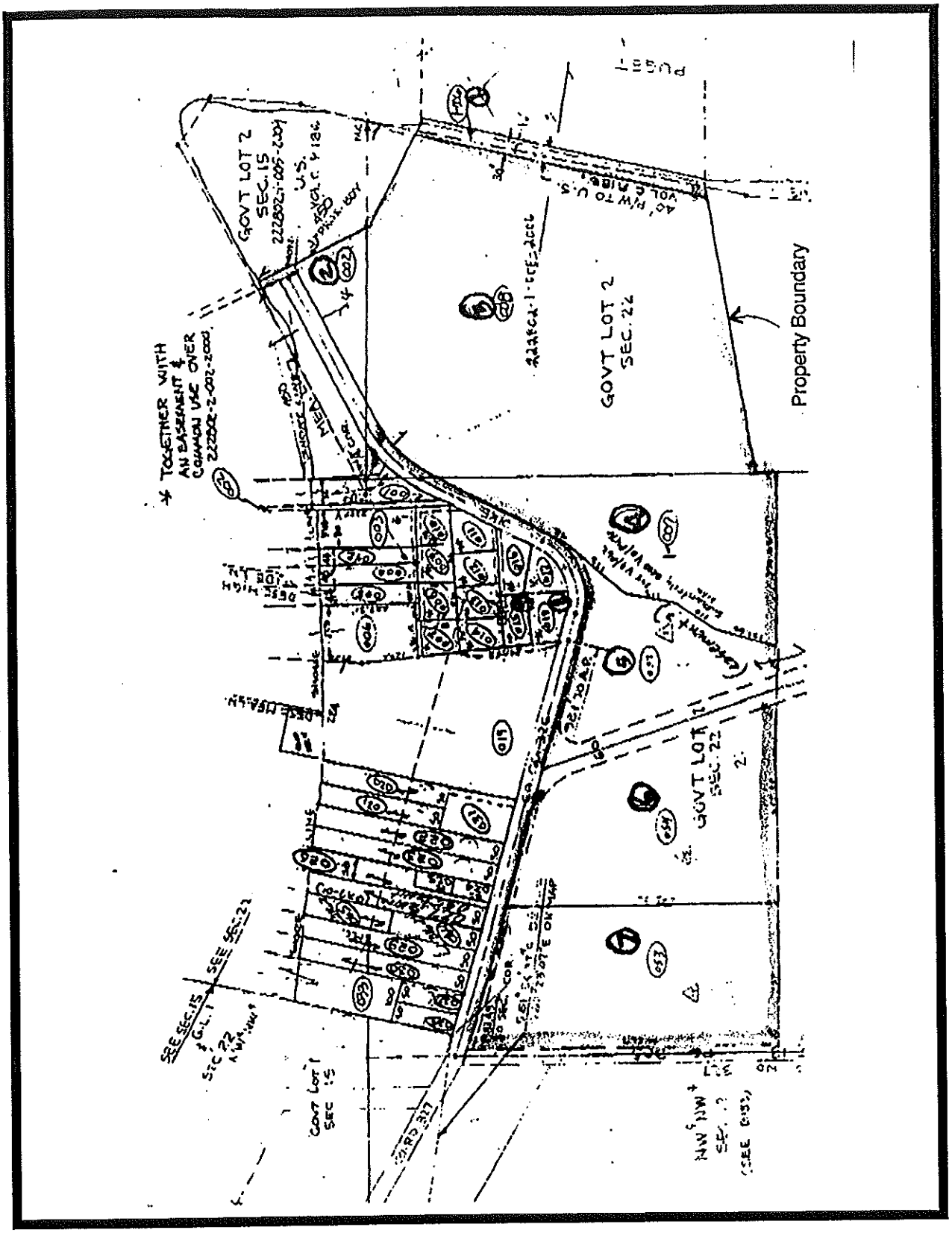

Figure 2 - Property Boundaries

Orange and black-striped flagging was used to mark the locations of the data plots. All flagged points were subsequently surveyed and mapped by staff from the Kitsap County Public Works Department.

2.3 Wetland Criteria

Wetlands were identified using the *Washington State Wetlands Identification and Delineation Manual* published by the Washington State Department of Ecology (Ecology 1997), as required by the Kitsap County CAO. Local jurisdictions are required to use this manual in implementing local regulations under the Growth Management Act (WAC 173-22-080). The manual defines wetlands as follows:

> *Those areas that are inundated or saturated by surface or groundwater 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. Wetlands generally include swamps, marshes, bogs, and similar areas.*

The manual requires examination of three parameters in determining wetland presence: vegetation, soils, and hydrology. For an area to be classified as wetland, wetland hydrology, hydrophytic vegetation, and hydric soils must be exhibited. Each parameter is discussed further in the sections below.

Hydrology

Direct observations of hydrology are often limited during the dry season. However, indicators may be present throughout the year that confirm the occurrence of saturation or inundation for periods of time adequate to satisfy criteria designated in the 1997 Ecology manual. Indicators for this methodology include recorded data and field data such as visual observation of inundation or saturation, watermarks, drift lines, sediment deposits, and drainage patterns.

Requirements for duration of inundation and/or soil saturation are based on the number of consecutive days with temperatures at 32 degrees Fahrenheit or above, which period comprises the growing season. For the Pacific Northwest, inundation or saturation to the surface for at least 12.5% or greater of the growing season is required to establish wetland hydrology. Based on data recorded at Bremerton, the nearest official observation station, the growing season in this vicinity lasts for approximately 213 days for five years out of ten (McMurphy 1980). Therefore, the wetlands in this project must have 27 days of continuous hydrology during the growing season to meet the criteria for wetland hydrology.

Vegetation

Hydrophytic vegetation consists of those plant species that are capable of growing in water, soil, or on a substrate that at least periodically lacks oxygen. Under the 1997 Ecology manual, the hydrophytic vegetation criterion is met when more than 50 percent of the dominant species are hydrophytic, based on the wetland plant species indicator status from the Region 9 section of the national list of plant species occurring in wetlands (Reed 1988). The wetland plant rating list separates vascular plants into five basic groups by their wetland indicator status. A plant species indicator status is based on that species frequency of occurrence in a wetland. The indicator status rating system is summarized in Table 1. Plant species are identified using *Flora of the Pacific Northwest* (Hitchcock and Cronquist 1973); older scientific names in the flora have been updated for this report.

At each data plot, percent area coverage was estimated for each plant species present, and dominant species were determined. The indicator status of each species was then looked up in the Region 9 plant list and recorded on the data form.

Table 1. Wetland Plant Indicator Status

Indicator Status	Definition
Obligate Wetland Plants (OBL)	Plants that occur almost always in wetlands: estimated probability in wetlands greater than 99% under natural conditions.
Facultative Wetland Plants (FACW)	Plants that have an estimated probability of 67% - 99% to be found in wetlands.
Facultative Plants (FAC)	Plants that are equally likely to occur in wetlands or non-wetlands: estimated probability of 34% - 66% to be found in wetlands.
Facultative Upland Plants (FACU)	Plants that usually occur in non-wetlands, estimated probability of 1% - 33% to be found in wetlands.
Obligate Upland (UPL)	Plants that occur almost always in non-wetlands under natural conditions, estimated probability greater that 99%.

Soils

A soil that is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions (meaning without oxygen) in the upper part is considered a hydric soil. Anaerobic conditions occur when water displaces the oxygen that is normally in the pores between soil particles. Examples of hydric soil field indicators include the presence of organic soils, or mottling and/or gleyed mineral soils. Organic soils are considered hydric soils by definition, primarily because organic soils only form when an area is inundated for a prolonged period of time. Mottles and gleying usually occur in mineral soils that have been saturated or inundated for lengthy periods during the growing season. Mottles are spots or blotches of contrasting color occurring within the soil matrix. Gleyed soils are predominantly neutral gray in color.

Soils were sampled at each data plot using a soil auger, generally down to depths of 20 to 36 inches. As required by the 1997 Ecology manual, the soil was observed for hydric soil indicators immediately below the top soil level (A-horizon) or at 10 inches below the surface, which ever level was shallower. Soil chroma (color), and mottle and gley colors were determined in the field using a Munsell color chart (Kollmorgen Corporation 1975). Soil characteristics were compared to Soil Conservation Service (SCS) descriptions of mapped soils to either confirm the mapping or determine if an inclusion of another soil type might be present.

3.0 FINDINGS

3.1 Summary of Overall Field Conditions

The property in question lies adjacent to the shoreline of Point No Point, which adjoins Puget Sound. Hansville, the nearest town, is located approximately one mile west of the property. Land use in the general vicinity is low-density residential and open space.

The topography within the wetland on the property is virtually flat, with only very slight general sloping to the east. Most of the south boundary of the wetland is bordered by a fairly steep north-facing slope, most of which lies outside of the property boundaries. The site is located in an historic coastal flooding area, with the wetland occurring at sea level.

Upland vegetation in the vicinity of property includes maintained lawns, beach berm vegetation, and second- and third-growth mixed forest. The lawns consist of non-native grasses and weedy herbaceous species, and are generally mowed on a regular basis. Lawns lie to the south of the central portion of the wetland, and to the north, across NE Point No Point Road. The natural beach berm that lies adjacent to the wetland along its east edge supports a shrub community on its west side, dominated by Nootka rose (*Rosa nutkana*), and a grass community on its east side, dominated by dune wildrye (*Elymus mollis*). Other common species occurring on the beach berm include red alder saplings (*Alnus rubra*), yarrow (*Achillea millefolium*), beach peavine (*Lathyrus littoralis*), and nodding onion (*Allium cernuum*). Mixed forest lies to the south of the east half of the wetland, and is dominated by western red cedar (*Thuja plicata*), Douglas fir (*Pseudotsuga menziesii*), grand fir (*Abies grandis*) and red alder. The understory is comprised largely of salmonberry (*Rubus spectabilis*), sword fern (*Polystichum munitum*), and piggy-back plant (*Tolmeia menziesii*). The wetland extends outside of the property boundary to the west. Though well off of the site, upland vegetation to the west of the wetland consists of a mixed forest similar to that just described.

According to the *Soil Survey of Kitsap County Area*, three soil series appear to be mapped as occurring within the property boundaries: Neilton gravelly loamy sand, 3-15 percent slopes (mapping symbol 35), Ragnar fine sandy loam, 6-15 percent slopes (mapping symbol 45), and Tacoma silt loam (mapping symbol 62)(McMurphy 1980). See Figure 3 - Soils Map for the locations of these soil units. Neilton soils extend onto the property only in the south central portion, straddling Hillview Lane NE. Neilton is a deep, excessively drained soil that formed on uplands, terraces and benches in glacial outwash. Permeability within this mapping unit is rapid to very rapid, and the water table is generally greater than 6 feet below the soil surface. Ragnar soils extend onto the property only in the southwest corner. Ragnar is a deep, well drained soil that formed on terraces and uplands in glacial outwash. Permeability is rapid, and the water table is generally greater than 6 feet below the soil surface. Tacoma silt loam is mapped as occurring over the majority of the site. This is a deep, very poorly drained soil that occurs on deltas, having formed in alluvium and organic material. The permeability of this soil is moderately slow, and the water table typically occurs less than 2 feet below the soil surface during the rainy season. This soil type is frequently flooded for varying periods throughout the year. Neilton and Ragnar soils are not considered hydric soils, and generally occur in non-wetland areas, while Tacoma is included on the hydric soils list for Washington State (SCS 1990).

3.2 Wetland Findings

One large wetland was identified and delineated on the site. The wetland is approximately 28 acres in size and occupies over 90 percent of the area of the property. Figure 4 - Site Map shows the approximate boundaries of the wetland, as sketched on an aerial photo, as well as the locations of the various plant communities. The delineated and surveyed boundaries of the wetland are shown on the map in Appendix A. Field forms for data plots in the wetland are presented in Appendix B.

The wetland boundary is clearly determined by the beach berm at the east end of the wetland, and NE Point No Point Road along the north. In the east half of the wetland, the southern extent is limited by a steep slope. More gradual topography limits the remainder of the south edge and the western boundary.

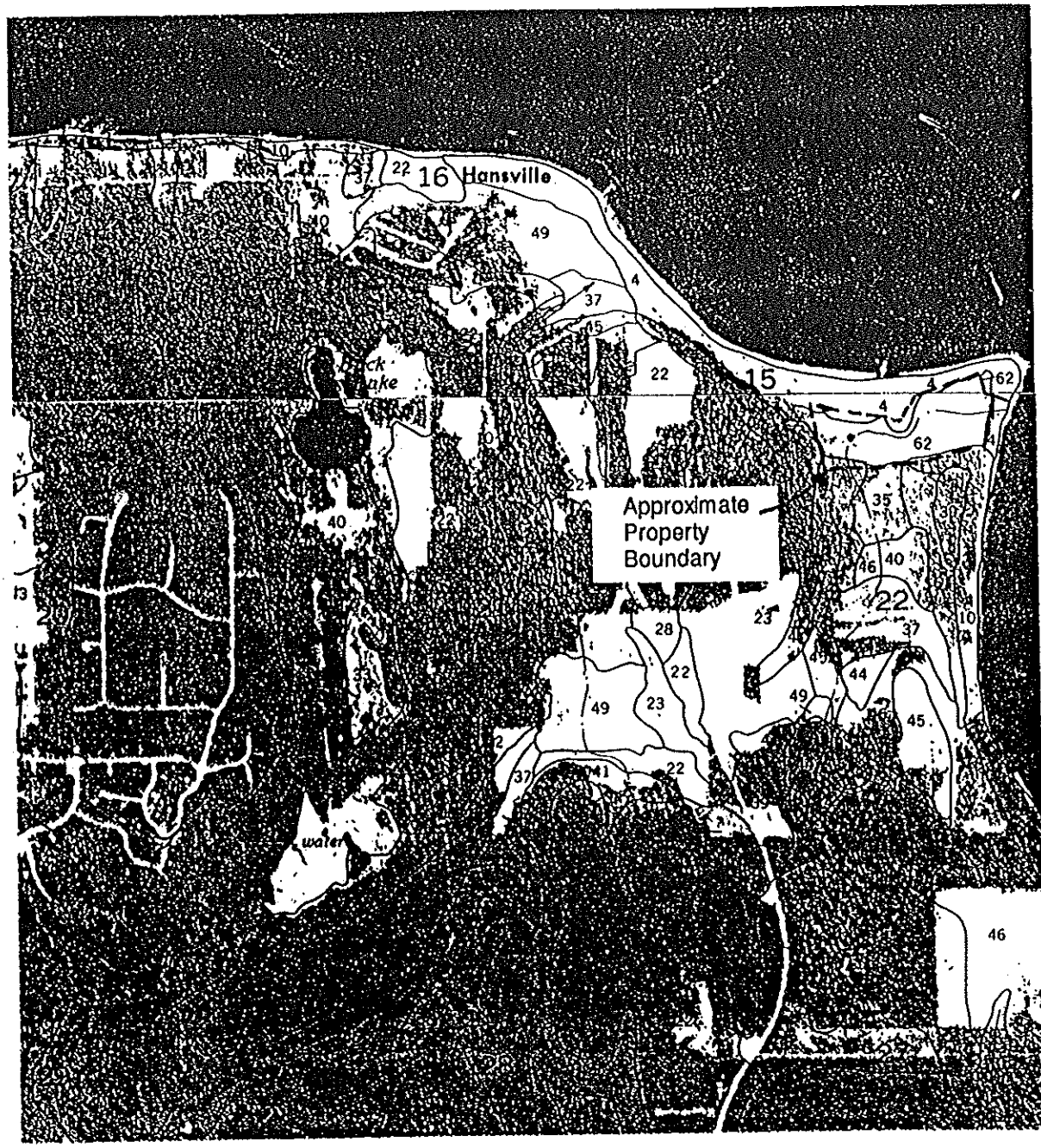

Figure 3 - Soils Map (McMurphy. 1980)

Hydrology

Water enters the wetland as direct precipitation, streamflow, surface runoff from adjoining roads, and as groundwater discharge from a seasonally shallow water table and from hillside seeps. An unnamed stream enters the wetland in the southwest corner and meanders generally north and northwest. The channel is braided in some areas and poorly defined due to the lack of gradient and the extent of ponding over much of the southwest corner of the wetland at the time of the site visit. Dense emergent vegetation extending above the surface of the ponded water also acted to obscure the channel. Groundwater seeps were noted along the toe of slopes at both the south edge of the east half of the wetland, and along the western boundary of the wetland, which lies outside of the subject property.

A system of deep ditches was dug in the wetland, presumably in an attempt to drain the area for agricultural uses. One of the previous owners of this land has indicated that he used to regularly graze cattle in the wetland area, including during the wetter winter months. This indicates that much of the wetland was once effectively drained, but in later years the ditches were not well-maintained, and no longer drain the area to such an extent. The main ditch reaches almost the entire length of the wetland, crossing it in an east-west direction. At the eastern extent of this ditch is a culvert that passes through the beach berm, draining to Puget Sound. The culvert is fitted with a tide gate that prevents saltwater from entering the wetland through the culvert. This ditch and culvert system is the primary path by which water exits the wetland. Secondary ditches off of this main ditch facilitate water circulation throughout the east half of the wetland.

At the time of the site visit, water was ponded in the southwest corner of the wetland to depths of 24 inches. Ponded water was noted only in the portion of the wetland that lies to the west of Hillview Lane NE. To the east of this road, ponding was noted only in the excavated ditches. Throughout the remainder of the wetland, soil saturation was observed within the upper 8 inches of the soil profile. Other indicators of wetland hydrology that were noted included drainage patterns, sediment deposits, and an odor of hydrogen sulfide gas emanating from excavated soils. Clear indicators of wetland hydrology were present at all data plots in the wetland.

The distribution of plant communities in the wetland, as well as the presence of salt crystals on soil surfaces indicate that the wetland has saltwater or brackish (low salinity) water in its eastern half. Plant species that typically grow in salt marshes, such as saltgrass, pickleweed, and saltmarsh bulrush, dominate the eastern portion of the wetland. Saltwater may enter the wetland through one or more of the following ways: 1) saltwater intrusion has occurs subsurface, through the pores of the sandy berm during high tidal surges, 2) saltwater enters when debris keeps the tide gate from closing properly, and/or 3) saltwater overtops the beach berm during severe storms and tidal surges. It is likely that saltwater has entered the wetland through a combination of these factors, as indicated by Vanbianchi's report (1991).

Vegetation

A total of 14 plant communities were observed in the wetland at Point No Point. The locations of these communities are mapped on Figure 4. These communities are grouped as forested, scrub-shrub, or emergent as follows:

Forested Communities

1. Red Alder/Salmonberry - Located in the southwest portion of the wetland, this is a dense stand of red alder with an average diameter of roughly 10 inches. The understory is comprised of

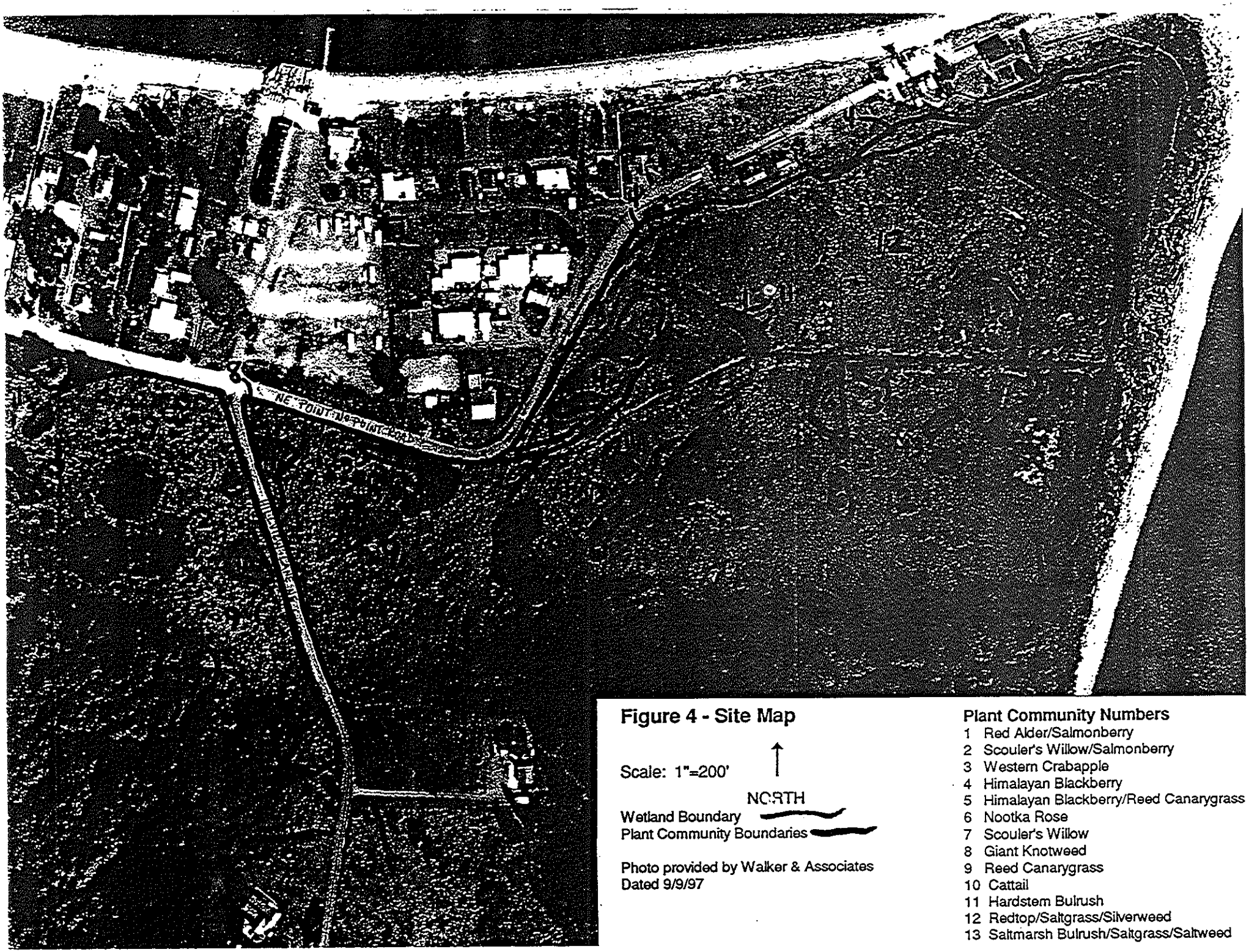

Figure 4 - Site Map

Scale: 1"=200'

NORTH

Wetland Boundary

Plant Community Boundaries

Photo provided by Walker & Associates
Dated 9/9/97

Plant Community Numbers

1 Red Alder/Salmonberry
2 Scouler's Willow/Salmonberry
3 Western Crabapple
4 Himalayan Blackberry
5 Himalayan Blackberry/Reed Canarygrass
6 Nootka Rose
7 Scouler's Willow
8 Giant Knotweed
9 Reed Canarygrass
10 Cattail
11 Hardstem Bulrush
12 Redtop/Saltgrass/Silverweed
13 Saltmarsh Bulrush/Saltgrass/Saltweed

a very dense thicket of salmonberry (*Rubus spectabilis*) with occasional patches of Himalayan blackberry (*Rubus procerus*) occurring mostly near the edges of the community. A small number of western red cedar trees (*Thuja plicata*) are scattered throughout the forest. Other occasional species include false lily-of-the-valley *(Malanthemum dilatatum*), skunk cabbage (*Lysichiton americanum*), hedge nettle (*Stachys cooleyae*), slough sedge (*Carex obnupta*), sword fern (*Polystichum munitum*) and lady fern (*Athyrrium filix-femina*).

2. Scouler's Willow/Salmonberry - This community occurs as a narrow fringe along the south edge of the east half of the wetland. The Scouler's willow trees (*Salix scouleriana*) average about 6 inches in diameter, with a dense thicket of salmonberry in the understory. Other associated understory species include false lily-of-the-valley, fringecup (*Tellima grandiflora*), and an unidentified grass.

Scrub-Shrub Communities

3. Crabapple - Western crabapple (*Malus fusca*) shrubs occur scattered in small clumps throughout the wetland. They are associated by Himalayan blackberry and reed canarygrass (*Phalaris arundinacea*).

4. Himalayan Blackberry - Blackberry thickets are common along the edges of roads and other disturbed areas. This is a non-native, invasive species that out-competes native species, and commonly occurs in areas that have been cleared or otherwise disturbed. The species typically forms a dense thicket that excludes other species. However, in some areas it is associated with reed canarygrass and bittersweet nightshade (*Solanum dulcamara*). Along the north edge of the wetland, it is often associated with salmonberry.

5. Himalayan Blackberry/Reed Canarygrass/Nightshade - This is an open area in the southwest portion of the wetland, along the edge of the alder forest where the stream flows out from the forest. It is a very wet area with a mosaic of blackberry and nightshade, occurring primarily on hummocks, and reed canarygrass in the lower, wetter areas. Water parsley *(Oenanthe sarmentosa*) dominates in the wettest portions of this community where the water was ponded to greater than 12 inches. Red alder saplings are scattered occasionally in this community.

6. Nootka Rose - This species forms thickets along the inside edge of the beach berm and also occurs scattered in the east half of the wetland. It typically forms dense thickets that exclude most other species. On the low berm that occurs along an old fenceline crossing the northeast corner of the wetland, rose occurs with bittersweet nightshade and beach peavine.

7. Scouler's Willow - This species occurs in shrub form in one location in the central portion of the wetland. It is surrounded by reed canarygrass.

8. Giant Knotweed - Giant knotweed *(Polygonum sachalinense*) is a non-native, highly invasive species that occurs in one location in the wetland, at the intersection of Hillview Lane NE and NE Point No Point Road. It is associated with Himalayan blackberry and reed canarygrass.

Emergent Communities

9. Reed Canarygrass - This is a non-native invasive species that is common in wet meadows with a history of grazing. It spreads by rhizome and forms a very dense mat that excludes most other species. In this wetland, it dominates the emergent areas that do not receive much exposure to brackish water (the west half of the wetland). The species may occur with thin

patches of cattail, particularly overhanging the ditches in the western portion of the wetland, or be associated with hardstem bulrush.

10. Cattail - Common cattail (*Typha latifolia*) occurs in extensive patches in the non-forested portions of the west half of the wetland and the south central portion, tending to occur in the freshwater or slightly brackish areas. In some areas, the species is associated with reed canarygrass and hardstem bulrush.

11. Hardstem Bulrush - Hardstem bulrush (*Scirpus acutus*) occurs in several small patches in the wetland, either as discrete groupings, or associated with cattail, reed canarygrass, or saltmarsh bulrush.

12. Redtop/Saltgrass/Silverweed - This community occurs in the east half of the wetland where brackish water appears to enter the wetland. Widely varying ratios of redtop (*Agrostis gigantea*) to seashore saltgrass (*Distichlis spicata*) occur. Pacific silverweed (*Potentilla anserina*) is common throughout this community. Associated species may include saltweed (*Atriplex patula*), Baltic rush (*Juncus balticus*), and Douglas aster (*Aster subspicatus*). Pickleweed (*Salicornia virginica*), seaside arrowgrass (*Triglochin maritimum*), saltmarsh bulrush (*Scirpus maritimus*), and Lyngby's sedge (*Carex lyngbyei*) may be seen within this community in depressions and along the edges of the drainage ditches.

13. Saltmarsh Bulrush/Saltgrass/Saltweed - This community occurs both in and surrounding the salt pannes or small ponds that occur scattered in the east half of the wetland, and in some of the drainage channels in this area. The small ponds are typically saltier than other portions of the wetland due to evaporation of water and the resultant concentration of salts. Saltmarsh bulrush (*Scirpus maritimus*) may occur in monotypic stands, or be mixed with saltgrass and saltweed. Hardstem bulrush is also associated with some patches in this community.

14. Pickleweed/Saltweed - Only one patch of this community was large enough to map as a separate unit. This occurs near the east edge of the wetland, just south of the main ditch. The community lies in a low area that appears to pond salty water, judging from the salt crystals covering the soil surface in this area.

Soils

The soil inventory shows that almost the entire wetland area is mapped as Tacoma silt loam, a hydric mineral soil. This soil is very poorly drained and typically has a seasonally shallow water table. Areas with this soil are frequently flooded for varying periods of time. A typical profile for this soil is a very dark grayish brown silt loam surface layer about 6 inches deep, over a dark grayish brown to dark brown loam, silty clay loam, or very fine sandy loam down to 30 inches.

The southwest corner of the wetland is mapped as having Ragnar and Nelton soils. These are upland soils that generally do not occur in wetlands.

Field observations indicate that most of the wetland has soils that roughly match the description of Tacoma silt loam. Of the eight soil pits that were dug in wetland, five match the characteristics of the Tacoma soil series. Organic soils were observed in the remaining three pits dug in the wetland. These were very dark brown mucks or mucky peats over sand or sandy loam. This type of soil profile most closely resembles the soil survey description for Shalcar muck. This is a hydric organic soil.

Additional soil pits would need to be dug to accurately assess the distribution of organic and mineral soils in the wetland. Based on the available information, it appears that organic soils generally occur in the west half of the wetland where reed canarygrass grows most densely, while mineral soils predominate in the east half.

Field indicators of hydric soils were noted at all soil pits. These indicators included organic soils or mineral soils with low chromas and bright iron oxide mottles. The presence of organic soils in the wetland indicates a history of prolonged saturation or inundation in these areas. Soils in all portions of the wetland meet the hydric soil requirements of the 1997 Ecology manual.

Wetland Classification and Rating

Using the U.S. Fish and Wildlife Service system (Cowardin et al. 1979) of wetland classification, the wetland includes palustrine forested, scrub-shrub, and emergent wetland communities. We concur with Vanblanchi (1991) that this wetland should be rated as a Category II, using the Washington State Department of Ecology rating system (Ecology 1991).

3.3 Wildlife Findings

A separate wildlife assessment was not conducted as part of the wetland study. However, field observations of wildlife and wildlife signs were noted. The following species were noted during the two days of fieldwork conducted in September 1998:

Table 2. Wildlife Species or Signs Observed in Point No Point Wetland

Common Name	Scientific Name	Observations
Birds		
great blue heron	*Ardea herodias*	flying over wetland, and perched in alder trees
American crow	*Corvus brachyrhynchos*	on powerlines above wetland
belted kingfisher	*Ceryle alcyon*	perched on power pole above wetland
glaucous-winged gull	*Larus glaucescens*	flying over wetland
marsh wren	*Cistothorus palustris*	perched on salmonberry
ring-necked pheasant	*Phasianus colchicus*	flushed from reed canarygrass
song sparrow	*Melospiza melodia*	perched on blackberry thicket
Steller's jay	*Cyanocitta stelleri*	observed flying from tree to tree in alder forest
Mammals		
muskrat	*Ondatra zibethicus*	tracks observed along edge of brackish marsh
white-tailed deer	*Odocoileus virginianus*	scat observed in alder forest

Many other wildlife species are known to use the wetland for feeding, cover, breeding, and other uses. For additional information on specific uses of the various habitat types provided by the wetland, consult Vanblanchi's report (1991).

4.0 POTENTIAL IMPACTS FROM SITE DEVELOPMENT

Upland areas on this site are limited in their potential for development by size and access. As stated previously in this report, wetland covers over 90 percent of the entire site. Upland areas that are large enough to consider for single-family residences are limited to two areas on the site: 1) land on either side of NE Point No Point Road, just west of the parking lot for the Point No Point Lighthouse, and 2) forested land on the top of the bluff to the south of the east half of the wetland (adjacent to County Park land). The first area has ample room for a house and existing access via NE Point No Point Road. The second area, however, currently has no legal access route. Options for access that are currently under consideration are summarized as follows:

1. Obtain legal easement across upland property directly to the west of this area. This is the most viable option in terms of overall cost and permitting, but it is unknown whether the owners of the adjacent property are amenable to this proposal. This option would avoid direct wetland impacts.

2. Construct a driveway that crosses the wetland in the northeast corner in a NW-SE orientation (where the old fenceline has formed a berm dominated by wild rose), and continue the driveway along a north-south heading along the beach berm. The berm along the fenceline crossing the wetland is low and narrow, and would need to be built up considerably to support automobile traffic. This option would involve filling approximately 400 linear feet of scrub-shrub and emergent wetland, a portion of which would be considered salt marsh. This option would require, at a minimum, a Section 404 Nationwide Permit, Section 401 Water Quality Certification, a Kitsap County Reasonable Use Exception, and a Shoreline Permit (see Section 5.0 regarding permit requirements). Mitigation of wetland impacts would be required for this option.

3. Construct a driveway that crosses the wetland at its narrowest point, from where NE Point No Point Road takes a sharp curve, directly across the wetland to the upland area on the bluff. This would involve filling approximately 400 linear feet of mostly emergent wetland dominated by cattail and reed canarygrass. It is possible that a portion of this crossing could be designated as salt marsh. This option would require, at a minimum, a Section 404 Nationwide Permit, Section 401 Water Quality Certification, and a Kitsap County Reasonable Use Exception. Mitigation of wetland impacts would be required for this option.

5.0 REGULATORY ISSUES

Several federal, state, and local regulations affect development in wetland areas. Agencies that have jurisdiction over the wetland on the Point No Point site include, but are not limited to Kitsap County, the Washington State Department of Ecology (Ecology), and the U.S. Army Corps of Engineers (ACOE). These agencies should be consulted in determining permit requirements relative to developing the Point No Point Wetland. The following is a brief summary of general requirements relative to development in or near wetlands.

The County regulates wetlands under Section 18.16.200 of the Kitsap County Critical Areas Ordinance (CAO). Prior to permitting any activities in wetlands, Kitsap County requires wetland boundaries to be delineated and surveyed by qualified personnel using the methodology of the 1997 Ecology manual. Wetland boundaries are subject to verification and approval by County staff.

The County uses Ecology's Washington State Wetland Rating System for Western Washington (1991) to categorize wetlands for the purpose of assigning wetland buffers and replacement ratios. Category II wetlands are defined as those that "1) provide habitat for very sensitive or important wildlife or plants; 2) are either difficult to replace; or 3) provide very high functions and values, particularly for wildlife habitat" (Ecology 1991). Category II wetlands are not as rare as Category I, but are still deemed in need of a high level of protection. Kitsap County requires that Category II wetlands be assigned a minimum buffer width of 100 feet, with an additional building setback of 15 feet. Buffer reductions or buffer averaging may be allowed on a case-by-case basis by the County, where it can be demonstrated that wetland functions will not be impacted by such action.

Access to some of the potentially buildable or upland area on the Point No Point site may be limited by the location of the wetland. Fill of Category II wetlands for the purpose of constructing a private access driveway may be conditionally allowed by Kitsap County under the Special Use Review process, as detailed under Section 18.16.240 of the CAO. If wetland fill is required to allow for sufficient area to build a house, Kitsap County may, under certain circumstances, allow a Reasonable Use Exception. An exception may be granted for a proposed development in cases where it can be proved that enforcement of the provisions of the CAO would deprive a landowner of all reasonable use of a property. The applicant must show that no other reasonable use would result in less impact on the critical area, and that the proposal does not pose an unreasonable threat to public health, safety or welfare. Alterations to the critical area must be the minimum necessary to allow for reasonable use of the property.

All areas that occur within 200 feet of designated shoreline come under the jurisdiction of the Kitsap County Shoreline Master Program. Any alteration of the Point No Point Wetland that occurs within 200 feet of ordinary high water for Puget Sound would be regulated and may require a Shoreline Permit. All determinations regarding Shoreline Permit requirements are made by Kitsap County staff.

While Kitsap County regulates most development relative to critical areas, the ACOE may become involved when wetland impacts are proposed. The ACOE administers Section 404 of the Clean Water Act, which regulates the discharge of dredged or fill materials into waters of the United States, including wetlands. Under Section 404, the ACOE administers a variety of Nationwide Permits (NWPs) to facilitate limited construction in wetlands and other aquatic areas. For single-family housing and/or related access roads that are constructed such that wetland fill is required, NWP 29 is the usual permit that would apply. However, this permit is no authorized for use on projects that would fill salt marshes, as the eastern half of the Point No Point wetland would be designated. This permit limits fill to no more than ½ acre of non-tidal wetlands, and can only be used for a single-family home that will be the personal residence of the applicant. If a sub-development is proposed for this site, then NWP 26 would most likely apply. This permit limits wetland fill to 2 acres. NWP 14 applies to road crossings of wetlands, but limits the allowable wetland fill to 1/10th acre and 200 linear feet, conditions that would be difficult to meet on this site.

Applicants for Section 404 permits must also receive 401 Certification from Ecology to certify that the discharge meets aquatic protection guidelines. Conditions imposed under 401 Certification then become conditions of the ACOE Section 404 permit.

6.0 REFERENCES

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APPENDIX A

Surveyed Wetland Boundary

APPENDIX B

Data Forms

SHELDON & ASSOCIATES
WETLAND DELINEATION DATA FORM
ROUTINE ONSITE DELINEATION

Client: Open Space Resources **Project:** Point No Point Wetland

Field Staff: K. Harper **Date:** 9/29/98

Flag# : near edge point 1-1 **Plot #:** DP #1 **Wetland #:** 1 (east half of Point No Point Wetland)

VEGETATION

Species:	% Cover	Stratum	Indicator Status	Species:	% Cover	Stratum	Indicator Status
1. Phalaris arundinacea	100	Herb	FACW	5.			
2. Typha latifolia	2	Herb	OBL	6.			
3.				7.			
4.				8.			

Percent of dominant species which are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? YES NO

Rationale: Over 50% of dominants FAC or wetter

HYDROLOGY

Is the area inundated? YES *NO* **Depth of water present:**

Is the soil saturated? YES NO **Depth to free water in soil pit:** 4"
Depth to soil saturation: surface

Other field evidence of surface inundation or soil saturation: Hydrogen sulfide odor from excavated soils

Is the hydrology criterion met? YES NO

Rationale: saturation at soil surface

SOILS

Mapped as Series/Phase: Tacoma silt loam **Is the soil on the Hydric Soil List:** YES NO

Is the soil sample a Histosol? YES NO **Do field observations match mapped series?** YES NO

Depth	Matrix	Redoximorphic Features	Gleyed?	Texture
0-24"	10YR 2/2			peaty muck
24-36"	10YR 4/1 and 10YR 4/2	oxidized root zones		loamy sand

Other hydric soil indicators:

Is the hydric soil criterion met? YES NO

Rationale: presence of organic soil

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the sample plot a wetland? YES NO

Rationale for jurisdictional determination: indicators of all three parameters present

SHELDON & ASSOCIATES
WETLAND DELINEATION DATA FORM
ROUTINE ONSITE DELINEATION

Client: Open Space Resources **Project:** Point No Point Wetland

Field Staff: K. Harper **Date:** 9/29/98

Flag# : near edge point 1-14 **Plot #:** DP #2 **Wetland #:** 1 (east half of Point No Point Wetland)

VEGETATION

Species:	% Cover	Stratum	Indicator Status	Species:	% Cover	Stratum	Indicator Status
1. Distichlis spicata	80	Herb	FAC+	5.			
2. Agrostis gigantea	30	Herb	FAC	6.			
3. Potentilla pacifica	10	Herb	OBL	7.			
4.				8.			

Percent of dominant species which are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? YES NO

Rationale: Over 50% of dominants FAC or wetter

HYDROLOGY

Is the area inundated? YES NO **Depth of water present:**

Is the soil saturated? YES NO Depth to free water in soil pit: 3"
Depth to soil saturation: surface

Other field evidence of surface inundation or soil saturation:

Is the hydrology criterion met? YES NO

Rationale: saturation at soil surface

SOILS

Mapped as Series/Phase: Tacoma silt loam **Is the soil on the Hydric Soil List:** YES NO

Is the soil sample a Histosol? YES NO **Do field observations match mapped series?** YES NO

Depth	Matrix	Redoximorphic Features	Gleyed?	Texture
0-8"	10YR 2/1			silt loam
8-18"	10YR 5/1	mottles 10YR 4/6		clay loam

Other hydric soil indicators:

Is the hydric soil criterion met? YES NO

Rationale: low chromas, iron oxide mottling

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the sample plot a wetland? YES NO

Rationale for jurisdictional determination: indicators of all three parameters present

SHELDON & ASSOCIATES
WETLAND DELINEATION DATA FORM
ROUTINE ONSITE DELINEATION

Client: Open Space Resources **Project:** Point No Point Wetland

Field Staff: K. Harper **Date:** 9/29/98

Flag# : near edge point 1-29 **Plot #:** DP #3 **Wetland #:** 1 (east half of Point No Point Wetland)

VEGETATION

Species:	% Cover	Stratum	Indicator Status	Species:	% Cover	Stratum	Indicator Status
1. Distichlis spicata	80	Herb	FAC+	5.			
2. Agrostis gigantea	10	Herb	FAC	6.			
3. Atriplex patula	15	Herb	FACW	7.			
4.				8.			

Percent of dominant species which are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? YES NO

Rationale: Over 50% of dominants FAC or wetter

HYDROLOGY

Is the area inundated? YES NO **Depth of water present:**

Is the soil saturated? YES NO Depth to free water in soil pit:
Depth to soil saturation: surface 8"

Other field evidence of surface inundation or soil saturation:

Is the hydrology criterion met? YES NO

Rationale: saturation near soil surface

SOILS

Mapped as Series/Phase: Tacoma silt loam **Is the soil on the Hydric Soil List:** YES NO

Is the soil sample a Histosol? YES NO **Do field observations match mapped series?** YES NO

Depth	Matrix	Redoximorphic Features	Gleyed?	Texture
0-10"	10YR 3/2			silt loam
10-18"	10YR 3/1			sandy loam

Other hydric soil indicators:

Is the hydric soil criterion met? YES NO

Rationale: low chromas

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the sample plot a wetland? YES NO

Rationale for jurisdictional determination: indicators of all three parameters present

SHELDON & ASSOCIATES
WETLAND DELINEATION DATA FORM
ROUTINE ONSITE DELINEATION

Client: Open Space Resources **Project:** Point No Point Wetland

Field Staff: K. Harper **Date:** 9/29/98

Flag# : near edge point 1-55 **Plot #:** DP #4 **Wetland #:** 1 (east half of Point No Point Wetland)

VEGETATION

Species:	% Cover	Stratum	Indicator Status	Species:	% Cover	Stratum	Indicator Status
1. Distichlis spicata	80	Herb	FAC+	5.			
2. Potentilla pacifica	20	Herb	FAC	6.			
3. Atriplex patula	5	Herb	FACW	7.			
4.				8.			

Percent of dominant species which are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? YES NO

Rationale: Over 50% of dominants FAC or wetter

HYDROLOGY

Is the area inundated? YES NO **Depth of water present:**

Is the soil saturated? YES NO **Depth to free water in soil pit:**
Depth to soil saturation: surface

Other field evidence of surface inundation or soil saturation:

Is the hydrology criterion met? YES NO

Rationale: saturation at soil surface

SOILS

Mapped as Series/Phase: Tacoma silt loam **Is the soil on the Hydric Soil List:** YES NO

Is the soil sample a Histosol? YES NO **Do field observations match mapped series?** YES NO

Depth	Matrix	Redoximorphic Features	Gleyed?	Texture
0-6"	10YR 2/2			silt loam
6-18"	10YR 4/1	mottles - 7.5YR 3/3		silt loam

Other hydric soil indicators:

Is the hydric soil criterion met? YES NO

Rationale: low chromas, iron oxide mottling

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the sample plot a wetland? YES NO

Rationale for jurisdictional determination: indicators of all three parameters present

SHELDON & ASSOCIATES
WETLAND DELINEATION DATA FORM
ROUTINE ONSITE DELINEATION

Client: Open Space Resources **Project:** Point No Point Wetland

Field Staff: K. Harper **Date:** 9/29/98

Flag# : near edge point 1-56 **Plot #:** DP #5 **Wetland #:** 1 (east half of Point No Point Wetland)

VEGETATION

Species:	% Cover	Stratum	Indicator Status	Species:	% Cover	Stratum	Indicator Status
1. Salix scouleriana	50	Tree	FAC	5.			
2. Rubus spectabilis	40	Shrub	FAC+	6.			
3. Oenanthe sarmentosa	35	Herb	OBL	7.			
4.				8.			

Percent of dominant species which are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? YES NO

Rationale: Over 50% of dominants FAC or wetter

HYDROLOGY

Is the area inundated? YES NO **Depth of water present:**

Is the soil saturated? YES NO **Depth to free water in soil pit:**
Depth to soil saturation: 4"

Other field evidence of surface inundation or soil saturation:

Is the hydrology criterion met? YES NO

Rationale: saturation near soil surface

SOILS

Mapped as Series/Phase: Tacoma silt loam **Is the soil on the Hydric Soil List:** YES NO

Is the soil sample a Histosol? YES NO **Do field observations match mapped series?** YES NO

Depth	Matrix	Redoximorphic Features	Gleyed?	Texture
0-7"	10YR 2/1			silt loam
7-18"	10YR 5/1	mottles 10YR 4/6		clay loam

Other hydric soil indicators:

Is the hydric soil criterion met? YES NO

Rationale: low chromas, iron oxide mottling

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the sample plot a wetland? YES NO

Rationale for jurisdictional determination: indicators of all three parameters present

SHELDON & ASSOCIATES
WETLAND DELINEATION DATA FORM
ROUTINE ONSITE DELINEATION

Client: Open Space Resources **Project:** Point No Point Wetland

Field Staff: K. Harper **Date:** 9/30/98

Flag# : near edge point 2-8 **Plot #:** DP #6 **Wetland #:** 2 (west half of Point No Point Wetland)

VEGETATION

Species:	% Cover	Stratum	Indicator Status	Species:	% Cover	Stratum	Indicator Status
1. Phalaris arundinacea	100	Herb	FACW	5.			
2.				6.			
3.				7.			
4.				8.			

Percent of dominant species which are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? YES NO

Rationale: Over 50% of dominants FAC or wetter

HYDROLOGY

Is the area inundated? YES *NO* **Depth of water present:**

Is the soil saturated? YES NO **Depth to free water in soil pit:** 3"
Depth to soil saturation: surface

Other field evidence of surface inundation or soil saturation: Hydrogen sulfide odor from excavated soil

Is the hydrology criterion met? YES NO

Rationale: saturation at soil surface

SOILS

Mapped as Series/Phase: Tacoma silt loam **Is the soil on the Hydric Soil List:** YES NO

Is the soil sample a Histosol? YES NO **Do field observations match mapped series?** YES NO

Depth	Matrix	Redoximorphic Features	Gleyed?	Texture
0-28"	10YR 2/2			peaty muck

Other hydric soil indicators:

Is the hydric soil criterion met? YES NO

Rationale: presence of organic soil

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the sample plot a wetland? YES NO

Rationale for jurisdictional determination: indicators of all three parameters present

SHELDON & ASSOCIATES
WETLAND DELINEATION DATA FORM
ROUTINE ONSITE DELINEATION

Client: Open Space Resources **Project:** Point No Point Wetland

Field Staff: K. Harper **Date:** 9/30/98

Flag# : near edge point 2-9 **Plot #:** DP #7 **Wetland #:** 2 (west half of Point No Point Wetland)

VEGETATION

Species:	% Cover	Stratum	Indicator Status	Species:	% Cover	Stratum	Indicator Status
1. Rubus spectabilis	60	Shrub	FAC+	5.			
2. Athyrrium filix-femina	10	Herb	FAC	6.			
3.				7.			
4.				8.			

Percent of dominant species which are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? YES NO

Rationale: Over 50% of dominants FAC or wetter

HYDROLOGY

Is the area inundated? YES NO **Depth of water present:**

Is the soil saturated? YES NO **Depth to free water in soil pit:**
Depth to soil saturation:

Other field evidence of surface inundation or soil saturation:

Is the hydrology criterion met? YES NO

Rationale: no field indicators present

SOILS

Mapped as Series/Phase: Ragnar fine sandy loam **Is the soil on the Hydric Soil List:** YES NO

Is the soil sample a Histosol? YES NO **Do field observations match mapped series?** YES NO

Depth	Matrix	Redoximorphic Features	Gleyed?	Texture
0-18"	10YR 2/2			silt loam

Other hydric soil indicators:

Is the hydric soil criterion met? YES NO

Rationale: no field indicators present

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the sample plot a wetland? YES NO

Rationale for jurisdictional determination: no indicators present for soil or hydrology

SHELDON & ASSOCIATES
WETLAND DELINEATION DATA FORM
ROUTINE ONSITE DELINEATION

Client: Open Space Resources **Project:** Point No Point Wetland

Field Staff: K. Harper **Date:** 9/30/98

Flag# : near edge point 2-9 **Plot #:** DP #8 **Wetland #:** 2 (west half of Point No Point Wetland)

VEGETATION

Species:	% Cover	Stratum	Indicator Status	Species:	% Cover	Stratum	Indicator Status
1. Rubus spectabilis	70	Shrub	FAC+	5. Urtica dioica	T	Herb	FAC+
2. Tellima grandiflora	50	Herb	NI	6.			
3. Athyrrium filix-femina	15	Herb	FAC	7.			
4. Lysichiton americanum	T	Herb	OBL	8.			

Percent of dominant species which are OBL, FACW, and/or FAC: 67%

Is the hydrophytic vegetation criterion met? **YES** NO

Rationale: Over 50% of dominants FAC or wetter

HYDROLOGY

Is the area inundated? YES **NO** **Depth of water present:**

Is the soil saturated? **YES** NO **Depth to free water in soil pit:**
Depth to soil saturation: surface, by squeeze test

Other field evidence of surface inundation or soil saturation:

Is the hydrology criterion met? **YES** NO

Rationale: saturation at soil surface

SOILS

Mapped as Series/Phase: Ragnar fine sandy loam **Is the soil on the Hydric Soil List:** YES **NO**

Is the soil sample a Histosol? YES **NO** **Do field observations match mapped series?** YES **NO**

Depth	Matrix	Redoximorphic Features	Gleyed?	Texture
0-12"	10YR 2/1			silt loam
12-18"	10YR 3/1			sandy loam

Other hydric soil indicators:

Is the hydric soil criterion met? **YES** NO

Rationale: low chromas

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the sample plot a wetland? **YES** NO

Rationale for jurisdictional determination: indicators of all three parameters present

SHELDON & ASSOCIATES
WETLAND DELINEATION DATA FORM
ROUTINE ONSITE DELINEATION

Client: Open Space Resources **Project:** Point No Point Wetland

Field Staff: K. Harper **Date:** 9/30/98

Flag# : near edge point 2-1 **Plot #:** DP #9 **Wetland #:** 2 (west half of Point No Point Wetland)

VEGETATION

Species:	% Cover	Stratum	Indicator Status	Species:	% Cover	Stratum	Indicator Status
1. Phalaris arundinacea	100	Herb	FACW	5.			
2. Typha latifolia	5	Herb	OBL	6.			
3.				7.			
4.				8.			

Percent of dominant species which are OBL, FACW, and/or FAC: 100%

Is the hydrophytic vegetation criterion met? YES NO

Rationale: Over 50% of dominants FAC or wetter

HYDROLOGY

Is the area inundated? YES NO **Depth of water present:**

Is the soil saturated? YES NO **Depth to free water in soil pit:** 4"
Depth to soil saturation: surface

Other field evidence of surface inundation or soil saturation:

Is the hydrology criterion met? YES NO

Rationale: saturation at soil surface

SOILS

Mapped as Series/Phase: Tacoma silt loam **Is the soil on the Hydric Soil List:** YES NO

Is the soil sample a Histosol? YES NO **Do field observations match mapped series?** YES NO

Depth	Matrix	Redoximorphic Features	Gleyed?	Texture
0-16"	10YR 2/2			peaty muck
16-20"	10YR 3/1			sandy loam

Other hydric soil indicators:

Is the hydric soil criterion met? YES NO

Rationale: presence of organic soil

JURISDICTIONAL DETERMINATION AND RATIONALE

Is the sample plot a wetland? YES NO

Rationale for jurisdictional determination: indicators of all three parameters present