

INTRA-SERVICE SECTION 7 BIOLOGICAL EVALUATION FORM
FWS Reference: 4-25-00-SP-1086

Originating Person: Judy Lantor
Telephone Number: (360) 753-6056
Date: April 26, 2000

- I. Region: Region 1
- II. Service Activity (Program): Contaminants;
 Natural Resource Damage Assessment (NRDA),
 Swan Creek/COT
 Instream habitat restoration
- III. A. Listed species and/or their designated critical habitat within the action area:
1. Within the action area that will or may be affected:
- Species: Bull trout (*Salvelinus confluentus*)
 Puget Sound, distinct population segment
Habitat: Tributary to Puyallup River, and associated wetlands
2. Within the action area that will not be affected:
- Species: Bald eagle (*Haliaeetus leucocephalus*)
Habitat: Swan Creek and adjacent riparian areas
- B. Proposed species and/or proposed critical habitat within the action area: none
- C. Candidate species within the action area: none
- IV. Geographic area or station name and action:
- Commencement Bay, Tacoma, Washington,
 Swan Creek a tributary to the Lower Puyallup River

Through the NRDA program, the U.S. Fish and Wildlife Service is cooperating with the other Commencement Bay Natural Resource Trustees including, the National Oceanic and Atmospheric Administration, State of Washington Departments of Ecology, Natural Resources and Fish & Wildlife, the Puyallup Tribe of Indians, and the Muckleshoot Indian Tribe (Trustees) to implement habitat restoration for Commencement Bay injured natural resources. The trustees

settled with the City of Tacoma for their natural resource damages liability. Under that settlement, the City, in cooperation with the trustees, has agreed to collaborate in developing and implementing five marine and freshwater restoration projects, beginning one each year over the next 5 years. The schedule has been delayed and it is hoped that two projects can be implemented in the year 2000. If permits are granted in sufficient time, the Swan Creek project would be constructed in the fall of 2000. If permits are delayed the project would be constructed in the summer of 2001.

V. Location (attach map):

- A. County and State: Pierce, Washington
- B. Section, township, and range (or latitude and longitude):
T20N, R03E, SW1/4S11
- C. Distance (miles) and direction to nearest town:
Approximately 2 miles southeast from downtown Tacoma
- D. Include species/habitat occurrence on a map, if possible.
See attached

VI. Description of proposed action (attach additional pages as needed):

Swan Creek is a tributary to the Puyallup River. It joins with Clear Creek near the confluence with the Puyallup River. The Swan Creek watershed is in a developing urban/suburban area. The creek has suffered from increased flow conditions and has downcut its channel in recent years. The lower reaches of the creek, where this restoration project is proposed, currently suffers from increased sediment loading.

The goal of this project is to enhance the Swan Creek corridor to benefit salmonids. Specific objectives include, 1) increase cutthroat and coho spawning habitat, 2) provide off-channel rearing habitat, and, 3) increase invertebrate production and salmonid spawning habitat in the lower reach of Swan Creek. To achieve these objectives, a meandering stream channel would be constructed between Swan Creek and the Haire wetland, to allow fish access to this habitat (Channel A). The Haire wetland would then be connected to the lower reach of Swan Creek by a second channel (Channel B). Enhancement work would also occur in the lower reach of Swan Creek. Two log sills structures would be installed to increase invertebrate production and provide potential spawning habitat for coho and cutthroat, and two flow constrictor structures would be installed to flush out sediment in this section. (See attached plan drawings).

Channel A would be excavated entirely on the former Walter wetland (now composed of fill material). This channel is designed to have a water depth of 6 to 12 inches. A weir would be installed in Swan Creek downstream from the inlet to channel A to ensure there is adequate flow through Swan Creek in the summer months. Channel A would be 530 feet in length with a sinuosity of 1.17. Instream structures and habitat would be placed as shown on the attached

drawings. The structures and boulders would be placed to provide lateral pools and cover.

A one foot thick gravel cobble substrate would be used in channel A and a brush mattress with an optional rock toe would be used to stabilize the banks. The banks would be constructed at a 3:1 slope and would be vegetated with native plant material. Appropriately sorted spawning gravel would be placed in the streambed to create interstitial habitat for invertebrates and potential spawning and rearing habitat for cutthroat trout and coho salmon. An evaluation of sediment transport capacity demonstrated that the normal range of flows would flush out silt and sand from the pools while leaving the spawning gravel unmodified (Pentec, 2000).

Channel B would be 43 feet in length with a sinuosity of 1.22, and would connect the lower end of Haire wetland to Swan Creek. Log weirs would be utilized to create a series of step pools designed to maintain a minimum water depth of 6 to 12 inches under low flow conditions. Logs would be placed every 10.5 feet for a total of three weirs, limiting the maximum drop to 4.8 inches, ensuring that none of the logs limits passage for salmonid fingerlings and fry.

Two flow constrictor log structures would be installed in Swan Creek below Haire wetland. These structures are designed to increase flow velocity and flush out sediment. The new stream corridor would be planted with native vegetation. The existing stream corridor would be enhanced through the removal of invasive vegetation and replanting with native vegetation. A long term maintenance, monitoring, and adaptive management plan would be implemented to ensure project success. (See project file, *Design of Swan Creek Stream and Wetland Enhancement, Review Draft*. Prepared for the City of Tacoma, by Pentec Environmental, February, 2000.)

VII. Determination of effects:

A. Explanation of effects of the action on listed species:

The Puget Sound distinct population segment of bull trout occurs within the Puyallup River system. Bull trout in the Puyallup River system have been separated into three stocks, Puyallup, White and Carbon River. These stocks are considered distinct based on their probable geographic isolation. It is not currently known whether these stocks are genetically distinct. The stocks are native and maintained by wild production. Life histories are unknown, but habitat is available for anadromous, fluvial and resident forms (WDFW, 1997).

Bull trout exhibit resident and migratory life history strategies through much of their current range. Migratory bull trout spawn in tributary streams where juvenile fish rear from one to four years before migrating to either a lake, river, or in certain coastal areas, to saltwater, where maturity is reached in one of the three habitats. Bull trout are opportunistic feeders. Food habits are primarily a function of size and life history strategy. Migratory bull trout prey on terrestrial and aquatic insects, amphipods, mysids, crayfish and small fish. Adult migratory bull trout are primarily piscivorous, feeding on various trout, salmon, whitefish, yellow perch and sculpin. (USFWS, 1999).

No known observations of bull trout have been made in the immediate vicinity of the project area. It is possible, however, that bull trout may use the area. Juvenile salmonids of other species are known to utilize the lower stream reaches and associated wetlands. Migratory and overwintering habitat for adult and sub-adult migratory bull trout includes large corridor areas such as the mainstem Puyallup River. It is unlikely that migratory bull trout would move into the reaches of Swan Creek proposed for construction activities in late summer due to increases in water temperature. However, project construction may result in short term increases in turbidity in Swan Creek. Any increases in turbidity could enter the mainstem Puyallup. Any increases in sedimentation would be entering the tidally influenced portion of the river which already has high sediment loads due to the influence of glacial flour and should not effect bull trout.

Due to the fact that bull trout have not been observed in the area, the project site is located in an area that bull trout are not likely to travel in late summer when water temperatures are elevated, and that any increases in sedimentation to the mainstem Puyallup would be negligible, the conclusion reached is bull trout may be affected, but they are not likely to be adversely affected.

B. Explanation of actions to be implemented to avoid, minimize, or reduce adverse effects:

All conditions of the Hydraulic Project Approval will be followed.

All elements of the erosion and sediment control plan would be followed. Silt fencing would be established immediately downslope of all construction activities, stabilized construction entrances would be established at either end of the project, temporary sand bag berms would be placed around inlet and outlet of channels to Haire wetland and Swan Creek, and temporary stream flow diversions would be established from Swan Creek during construction of stream improvements. Any siltation from construction of channel A that is not captured by the above erosion control methods would be filtered by the Haire wetland. Some siltation would occur with construction of stream improvements, but the overall impact would be to improve substrate embeddedness of the stream channel, thereby improving food resources and spawning habitat for other salmonid species.

A. Explanation of effects of the action on species:

There is a bald eagle nest approximately one mile southeast of the project site along Pioneer Avenue. Bald eagles may forage in the vicinity of the project area. They are commonly seen at the mouth of the Puyallup River, approximately 2.5 miles to the south. The upland buffer adjacent to the project site has trees of sufficient size to support bald eagle perching. Bald eagles occupy large feeding territories and it is doubtful that they use Commencement Bay exclusively over other feeding areas. Given the small size of the site and the temporary nature of construction disturbances, the project is not expected to impair foraging opportunities for eagles.

Heavy equipment (backhoe, loaders, dump trucks) will be employed during project construction. However, the project site is located along a busy roadway, Pioneer Avenue. Project construction

would occur approximately one mile from the nest site and no blasting or pile driving would occur. When such construction activities occur at this distance from a nest site or foraging area, no conservation measures are required under the Service's *Programmatic Biological Assessment for Service Habitat Restoration Activities* (USFWS, 1999). Therefore, there should not be any effects from construction activities on bald eagles in the area.

B. Explanation of actions to be implemented to avoid, minimize, or reduce adverse effects:

Since construction activities are not expected to be more disturbing than ambient conditions, no actions are proposed to reduce project effects on eagles.

VIII. Effect determination(s) and response(s) requested: [*optional]

A. Listed species/designated critical habitat:

Determination

Response requested

NO EFFECT

(species: Bald eagle (*Haliaeetus leucocephalus*)
(critical habitat: _____)

X *Concurrence
____ *Concurrence

IS NOT LIKELY TO ADVERSELY AFFECT

(species: Bull trout (*Salvelinus confluentus*)
(critical habitat: _____)

X Concurrence
____ *Formal Consultation
____ Concurrence
____ *Formal Consultation

IX. Signature Page

Initiating Officer  Date 5-1-00

X Concur _____ Do Not Concur

Comments:

Endangered Species Supervisor  (Rising) Date 5/9/00

X Concur _____ Do Not Concur

Comments:

REFERENCES:

Commencement Bay Natural Resource Trustees. 1995. Commencement Bay Phase I Damage Assessment Report. Prepared by EVS Environmental Consultants for the Commencement Bay Natural Resource Trustees and the NOAA Damage Assessment and Restoration Center, Seattle, WA.

Commencement Bay Natural Resource Trustees. 1997. Commencement Bay Natural Resource Damage Assessment Restoration Plan and Final Programmatic Environmental Impact Statement. Prepared by the U.S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration for the Commencement Bay Natural Resource Trustees and Cooperating Agencies.

Pentec Environmental. 2000. Design of Swan Creek Stream and Wetland Enhancement. Review Draft prepared for the City of Tacoma.

U.S. Fish and Wildlife Service. 1999. Programmatic Biological Assessment for U.S. Fish and Wildlife Service Habitat Restoration Activities of the Western Washington Office, Upper Columbia River Basin Office, Moses Lake Fish and Wildlife Office and Mid-Columbia River Basin Fisheries Resource Office.

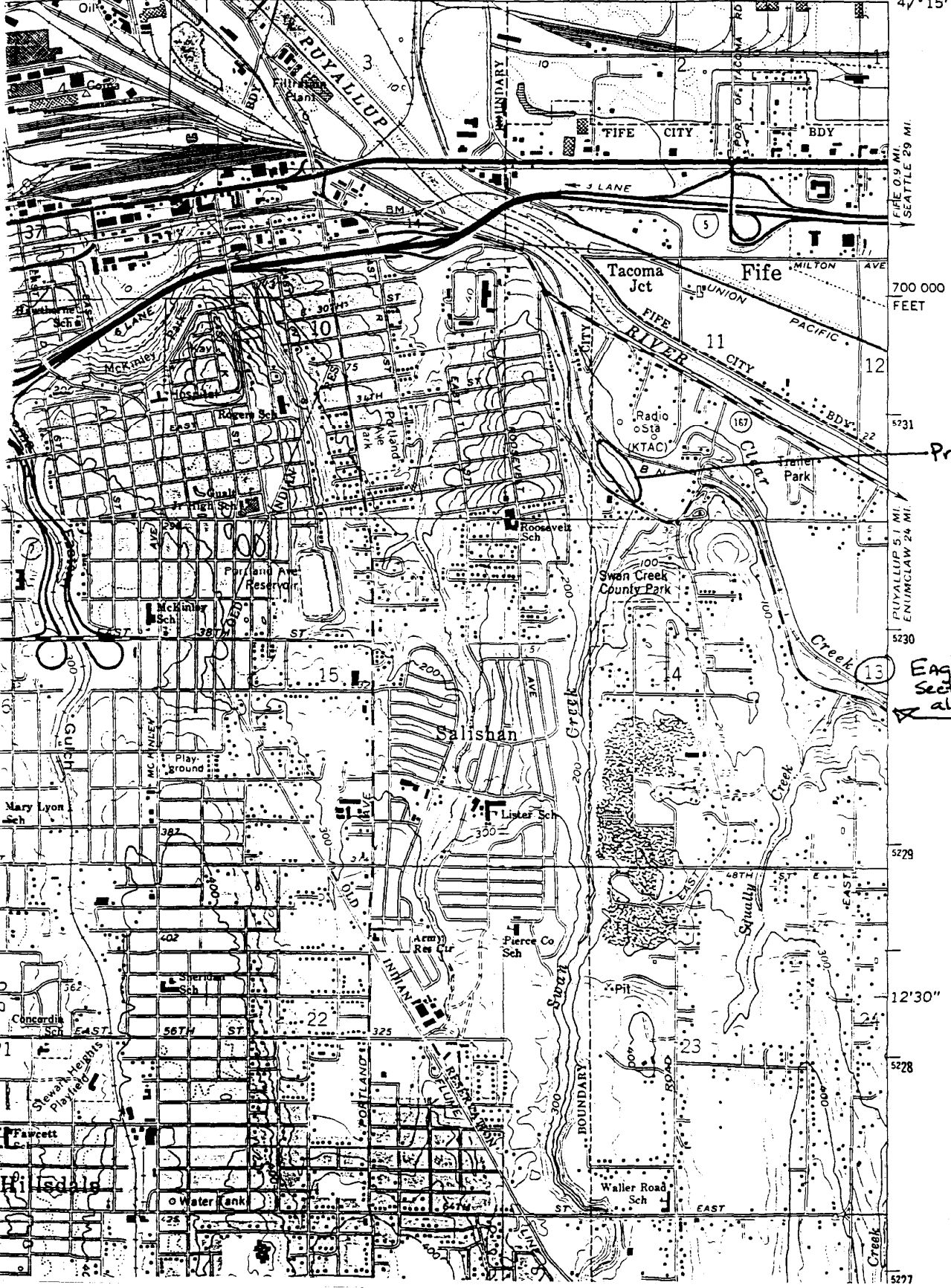
Washington Department of Fish and Wildlife. 1997. Washington State Salmonid Stock Inventory: Bull Trout and Dolly Varden.

SWAN CREEK, COY

TACOMA SOUTH QUADRANGLE
WASHINGTON-PIERCE CO.
7.5 MINUTE SERIES (TOPOGRAPHIC)
NW/4 TACOMA SOUTH 15' QUADRANGLE

1578 IV SE
POVERTY BAY

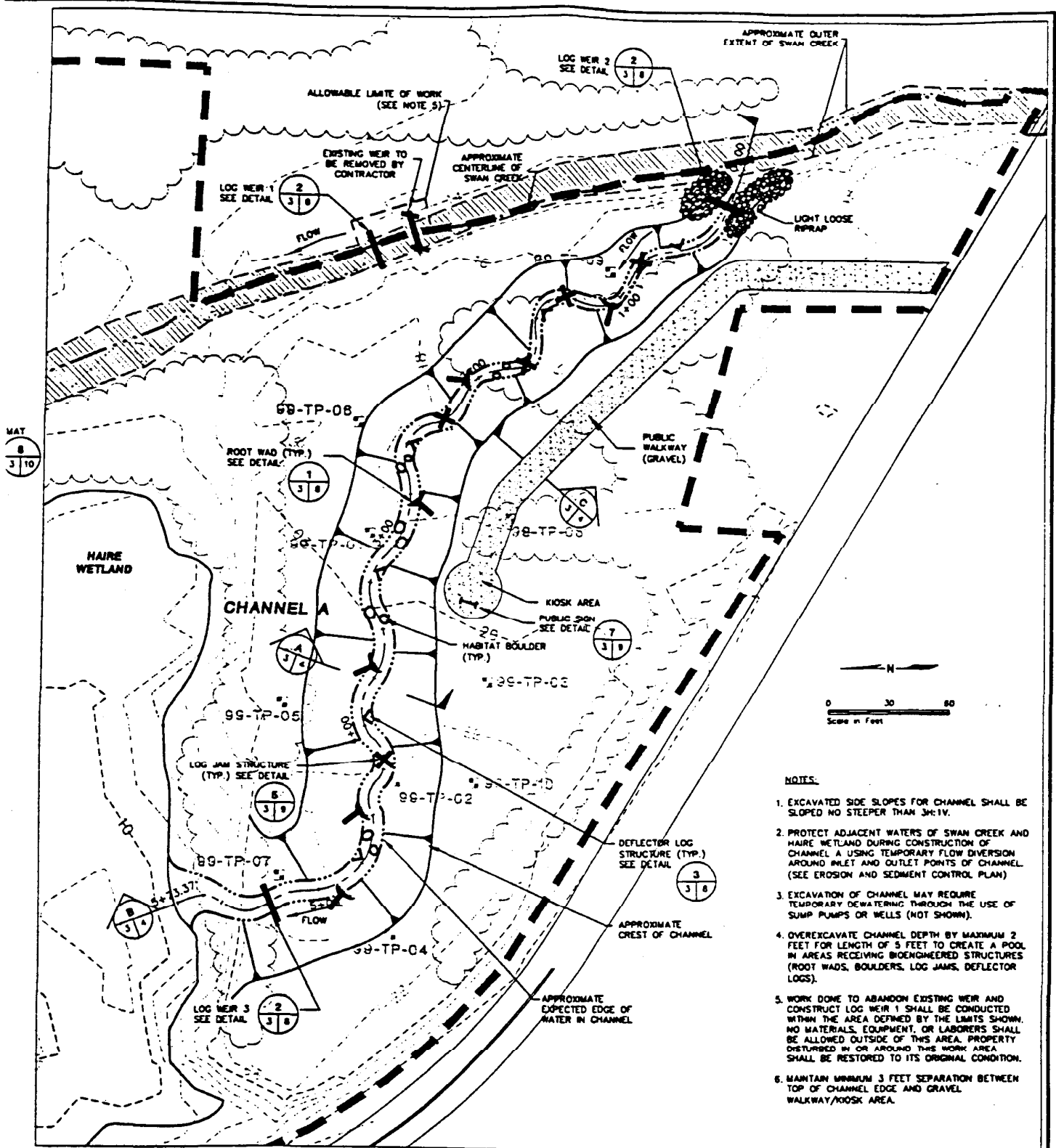
TH1 544 | 25' 545 | 1530 000 FEET 547 | 122°22'30" 47'15'



700 000 FEET
5231
5230
5279
12'30"
5278
5277

Project Site

Eagle nest in Section 13 along Pione Ave



- NOTES:**
- EXCAVATED SIDE SLOPES FOR CHANNEL SHALL BE SLOPED NO STEEPER THAN 3H:1V.
 - PROTECT ADJACENT WATERS OF SWAN CREEK AND HAIRE WETLAND DURING CONSTRUCTION OF CHANNEL A USING TEMPORARY FLOW DIVERSION AROUND INLET AND OUTLET POINTS OF CHANNEL. (SEE EROSION AND SEDIMENT CONTROL PLAN)
 - EXCAVATION OF CHANNEL MAY REQUIRE TEMPORARY DEWATERING THROUGH THE USE OF SUMP PUMPS OR WELLS (NOT SHOWN).
 - OVEREXCAVATE CHANNEL DEPTH BY MAXIMUM 2 FEET FOR LENGTH OF 5 FEET TO CREATE A POOL IN AREAS RECEIVING BIOENGINEERED STRUCTURES (ROOT WADS, BOULDERS, LOG JAMS, DEFLECTOR LOGS).
 - WORK DONE TO ABANDON EXISTING WEIR AND CONSTRUCT LOG WEIR 1 SHALL BE CONDUCTED WITHIN THE AREA DEFINED BY THE LIMITS SHOWN. NO MATERIALS, EQUIPMENT, OR LABORERS SHALL BE ALLOWED OUTSIDE OF THIS AREA. PROPERTY DISTURBED IN OR AROUND THIS WORK AREA SHALL BE RESTORED TO ITS ORIGINAL CONDITION.
 - MAINTAIN MINIMUM 3 FEET SEPARATION BETWEEN TOP OF CHANNEL EDGE AND GRAVEL WALKWAY/KIOSK AREA.

PLAN DETAIL: CHANNEL A

95 PERCENT DESIGN SUBMITTAL
 CITY OF TACOMA
 DEPARTMENT OF PUBLIC WORKS
**SWAN CREEK
 STREAM RESTORATION PROJECT
 CONSTRUCTION PLAN**

APW	DRAWN BY:	RZC
JW	DATE:	2/28/00
DIVISION		
MANAGER		

PENTEC ENVIRONMENTAL

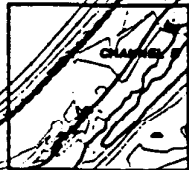
HARTCROWSER
 1910 Fairview Avenue East
 Seattle, Washington 98102-3699
 TEL 206.324.9330 FAX 206.328.5581

DRAWING SIZE: 24x36	SCALE: AS SHOWN	DATE ISSUED: 2/28/00	DRAWING TYPE: DRAFT	JOB NO.: J-7197	SHEET 3 of 11
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PLAN DETAIL KEY

0 150 300
Scale in Feet

PLAN DETAIL
(SEE BELOW)



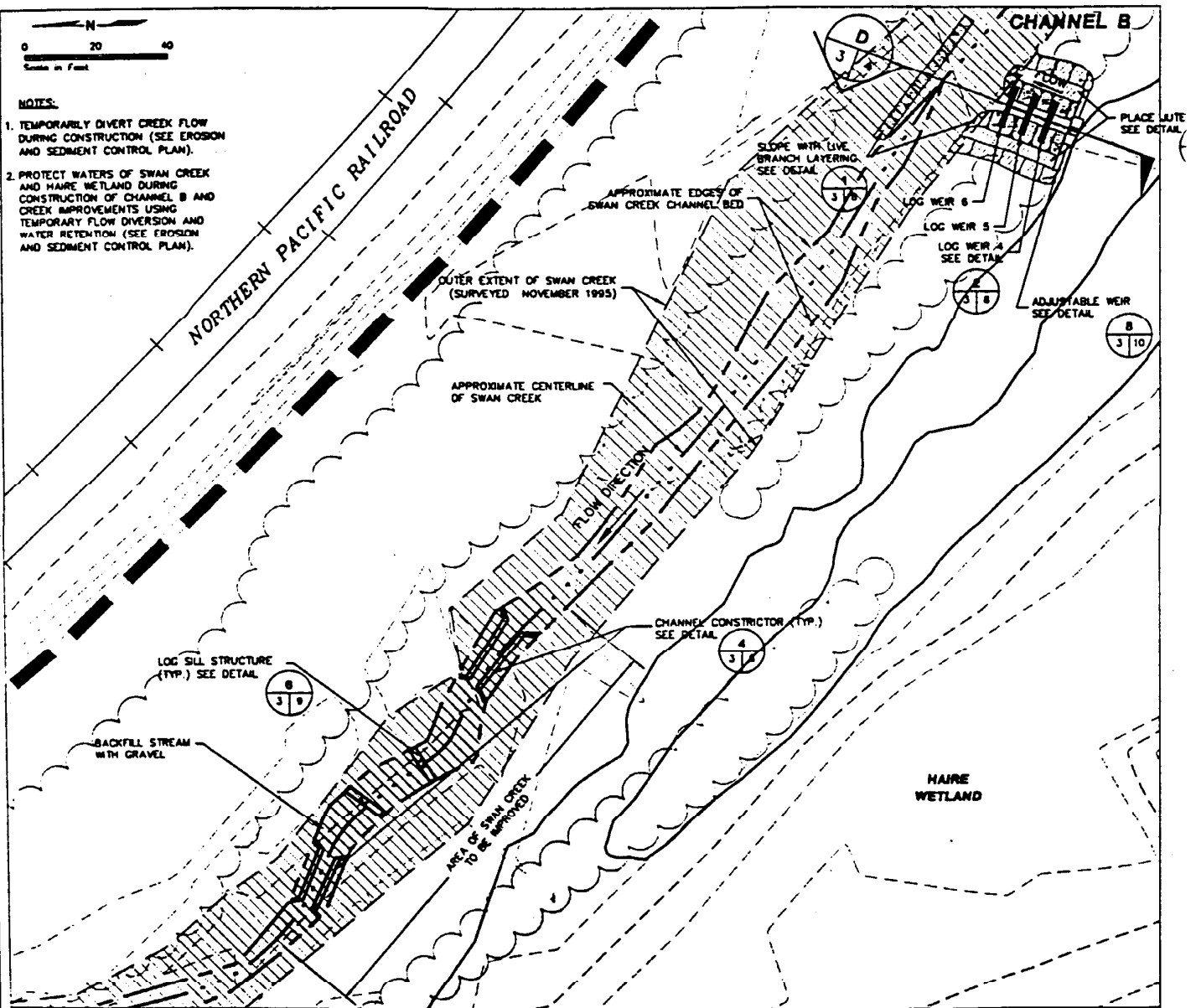
PLAN DETAIL
(SEE TO RIGHT)

PROJECT BOUNDARY

0 20 40
Scale in Feet

NOTES:

1. TEMPORARILY DIVERT CREEK FLOW DURING CONSTRUCTION (SEE EROSION AND SEDIMENT CONTROL PLAN).
2. PROTECT WATERS OF SWAN CREEK AND HAIRE WETLAND DURING CONSTRUCTION OF CHANNEL B AND CREEK IMPROVEMENTS USING TEMPORARY FLOW DIVERSION AND WATER RETENTION (SEE EROSION AND SEDIMENT CONTROL PLAN).



PLAN DETAIL: CHANNEL B AND SWAN CREEK IMPROVEMENTS

BENCH MARK:		
PROJ. MGR.:	MPW	DESIGNED BY:
CHECKED BY:	JTW	APPROVED BY:
NO.	DATE	BY

IF SHEET MEASURES LESS THAN 36"x24", IT IS A REDUCED PRINT. REDUCE SCALE ACCORDINGLY.

UTILITY SERVICES ENGINEERING - DIVISION

SPECIES LIST - U.S. FISH & WILDLIFE SERVICE
 WASHINGTON DEPARTMENT OF FISH & WILDLIFE
 Heritage Database - Wildlife Occurrences
 Project: SP.1086 Date: 00-04-25

Buffer: 1mi Only Federal Status Species are on this list
 USFWS use only: data subject to WDFW & WDNR sensitive data policies

Township/Range/Sect	County	Federal Status	State Status	Year	Class	Mapping Accuracy	Species Code
T20N R03E S13 SWOFNW	PIERCE	FT	ST	1998	SA	C	HALE

OCCUR.SEQNO: 1194.1

Common Name: BALD EAGLE

Description: BALD EAGLE NEST IN COTTONWOOD TREE, ONE OF A FEW COTTONWOODS ON OF RR TRACKS. EASILY VISIBLE FROM PIONEER RD.

SPECIES LIST - U.S. FISH & WILDLIFE SERVICE

US National Marine Fisheries

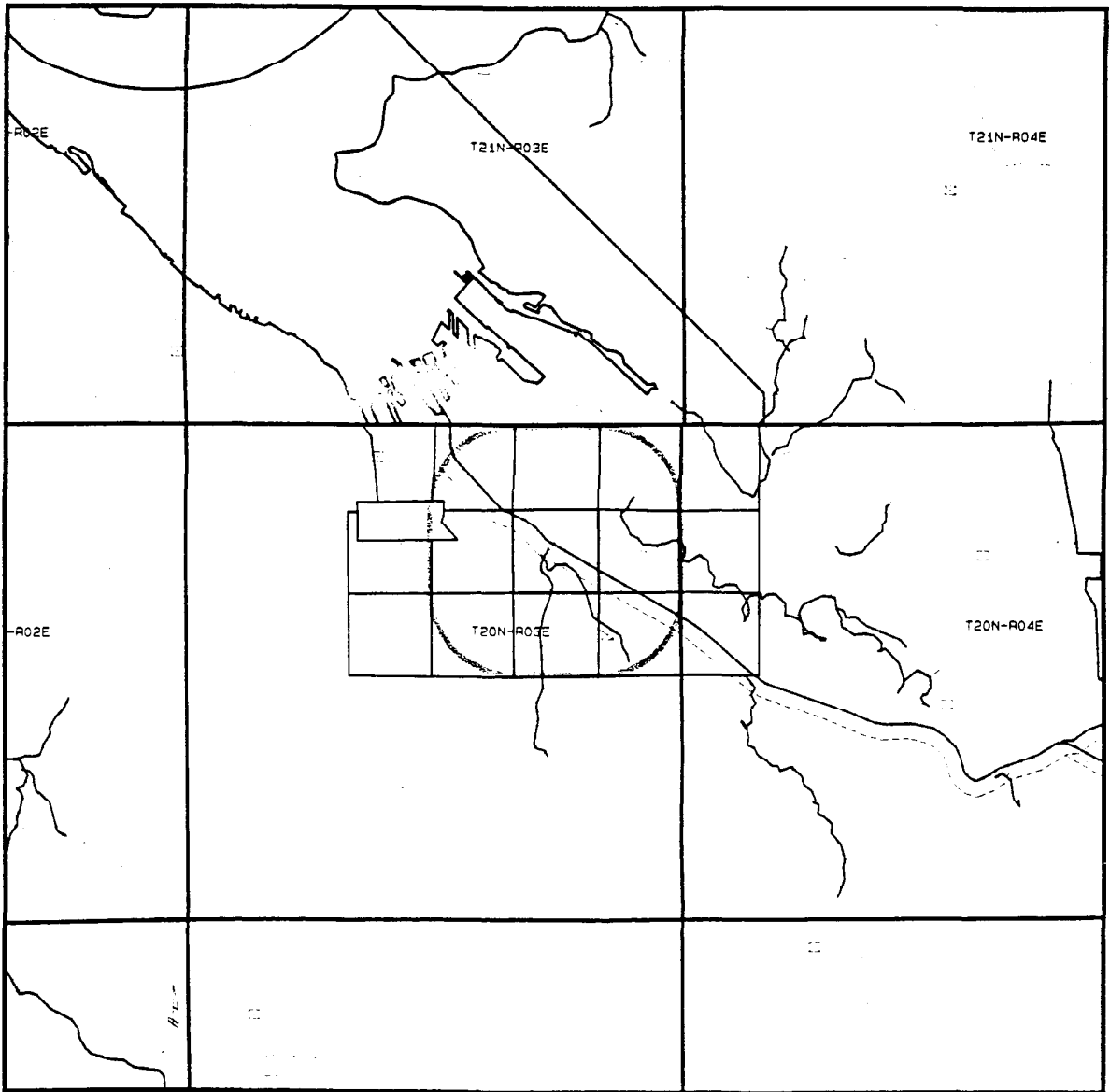
Ecologically Significant Units

Project: SP.1086 Date: 00-04-25

Buffer: 1mi Only Federal Status Species are on this list

USFWS use only: data subject to WDFW & WDNR sensitive data policies

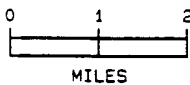
Database	Name	Status	Name2	S
chinesu	'Puget Sound'	PT		
chumesu	'Puget Sound'	NOT-WARRANTED	''	''
cohoesu	'Puget Sound/Strait of Georgi'	CANDIDATE	''	''
cuttesu	'Puget Sound'	NOT-WARRANTED	''	''
st98esu	'Puget Sound'	NOT-WARRANTED	''	''



Species List

Project: SP.1086

Date: 00-04-25



USFWS use only: data subject to WDFW & WDNR sensitive data policies

- Northern Spotted Owl CHUs
- Marbled Murrelet CHUs
- WDFW Heritage (1)** Wildlife Occurrences
- Wa DNR Heritage (0)** Plant Occurrences
- WDFW Spotted Owl (0)** Site Centers
- WDFW Marbled Murrelet Detections (0)**
- Spotted Owl Buffer
- Project Boundary (1 mile buffer)
- Township/Range/Section (Sections within 1 mile buffer)
- County Boundaries
- Rivers
- Anadromous Fish Presence
- Bull Trout Presence

** (numbers) reflect occurrences within the project boundary
Only Federal Status Species are listed