

Appendix A

Site Information and Photos

Table of Contents for Referencing Site Locations:

Makah NFH

<u>Site #</u>	<u>Feature</u>	<u>Barrier Status</u>	<u>Page#</u>
1310022	Dam	Barrier	49
1310023	Pump diversion	No status	51
1310024	Culvert	Non-fish bearing	53
1310025	Culvert	Unknown	55
1310033	Culvert	Non-fish bearing	74
1310034	Culvert	Non-fish bearing	76
1310068	Fishway	No status	144

Quinault NFH

<u>Site #</u>	<u>Feature</u>	<u>Barrier Status</u>	<u>Page#</u>
1310008	Culvert	Non-fish bearing	18
1310009	Culvert	Barrier	20
1310010	Culvert	Non-fish bearing	22
1310011	Culvert	Non-fish bearing	24
1310012	Culvert	Barrier	26
1310013	Culvert	Non-fish bearing	28
1310014	Culvert	Non-fish bearing	30
1310015	Gravity diversion	No status	32
1310016	Culvert	Non-fish bearing	34
1310017	Dam, Fishway	Passable	36
1310018	Dam	Barrier	39
1310019	Culvert	Non-fish bearing	41
1310020	Dam, Gravity diversion	Barrier	43
1310021	Culvert	Passable	46
1310066	Fishway	No status	140

Quilcene NFH

<u>Site #</u>	<u>Feature</u>	<u>Barrier Status</u>	<u>Page#</u>
1310026	Dam, Fishway	Passable	57
1310027	Gravity diversion	No status	60
1310028	Dam	Barrier	62
1310029	Culvert	Barrier	65
1310030	Dam, Gravity diversion	Barrier	67
1310031	Culvert	Non-fish bearing	70
1310032	Other	Passable	72
1310067	Fishway	No status	142

Nisqually Clear Creek Hatchery

<u>Site #</u>	<u>Feature</u>	<u>Barrier Status</u>	<u>Page#</u>
1310035	Culvert	Unknown	78
1310036	Culvert	Unknown	80
1310037	Culvert	Non-fish bearing	82
1310038	Gravity diversion	No status	84
1310039	Gravity diversion	No status	86
1310040	Culvert	Non-fish bearing	88
1310041	Dam	Barrier	90
1310042	Fishway	No status	92
1310043	Other	Passable	94

Nisqually NWR

<u>Site #</u>	<u>Feature</u>	<u>Barrier Status</u>	<u>Page#</u>
1310006	Culvert	Barrier	14
1310007	Culvert	Barrier	16
1310044	Culvert	Barrier	96
1310045	Culvert	Barrier	98
1310046	Culvert	Barrier	100
1310047	Culvert	Unknown	102
1310048	Culvert	Unknown	104
1310049	Culvert	Non-fish bearing	106
1310050	Culvert	Unknown	108
1310051	Culvert	Unknown	110
1310052	Culvert	Unknown	112
1310053	Culvert	Unknown	114
1310054	Culvert	Barrier	116
1310055	Culvert	Barrier	118
1310056	Culvert	Barrier	120
1310057	Culvert	Non-fish bearing	122
1310058	Culvert	Barrier	124
1310059	Culvert	Barrier	126
1310060	Culvert	Unknown	128
1310061	Culvert	Unknown	130
1310062	Culvert	Non-fish bearing	132
1310063	Culvert	Unknown	134
1310064	Culvert	Unknown	136
1310065	Culvert	Unknown	138

Grays Harbor NWR

<u>Site #</u>	<u>Feature</u>	<u>Barrier Status</u>	<u>Page#</u>
1310001	Other	Passable	4
1310002	Other	Passable	6

Black River NWR

<u>Site #</u>	<u>Feature</u>	<u>Barrier Status</u>	<u>Page#</u>
1310003	Culvert	Non-fish bearing	8
1310004	Culvert	Non-fish bearing	10
1310005	Culvert	Non-fish bearing	12

Abbreviations

146

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310001

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 46.98151
Longitude (WGS 84): -123.92248
East (NAD 27):
North (NAD 27):

Owner

Name: Grays Harbor NWR
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: N/A

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: NE
Section: 2
Township: 17N
Range: 10W

Associated Features

Other

Waterbody

Stream: Unnamed
Tributary To: Grays Harbor
WRIA: 22.0000
River Mile:
Fish Use Potential: Yes
FUP Criteria: Physical

Species Potential

Pink	Sea Run Cutthroat
Chum	Resident Trout
Chinook	Dolly/Bull Trout
Coho	
Steelhead	

Location/Directions:

In NE section of refuge- on old dike-approximately 100 meters south of Highway 109 and a quarter mile west of Paulson Rd.

Site Comments:

Tidal flats- small trib is type 1 stream that flows into Grays Harbor. Dike has been breached at this point, with a small footbridge DS of the dike breach. Normal channel meanders US and DS of dike, stable perennial vegetation

WDFW Fish Passage and Diversion Inventory Database
Level A Culvert Assessment Report

Site ID: 1310001		Fish Use Potential: Yes
Stream: Unnamed	Tributary To: Grays Harbor	WRIA: 22.0000
Latitude: 46.98151	Longitude: -123.92248	PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/05/2003

Description:

Small footbridge on small trib flowing through breach in dike approx. 10m wide. Wood planks anchor both ends of footbridge to the banks, and there is no bank cutting or erosion behind these planks. Complete tidal influence, w/natural channel meanders.



Results:

Barrier: No Passability (%) 100 Repair Status: OK

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310002

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 46.98091
Longitude (WGS 84): -123.92195
East (NAD 27):
North (NAD 27):

Owner

Name: Grays Harbor NWR
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: N/A

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: NE
Section: 2
Township: 17N
Range: 10W

Associated Features

Other

Waterbody

Stream: Unnamed
Tributary To: Grays Harbor
WRIA: 22.0000
River Mile:
Fish Use Potential: Yes
FUP Criteria: Physical

Species Potential

Pink	Sea Run Cutthroat
Chum	Resident Trout
Chinook	Dolly/Bull Trout
Coho	
Steelhead	

Location/Directions:

In NE section of refuge property- on old dike- approximately 100m south of Highway 109, and quarter mile west of Paulson Rd.

Site Comments:

Tidal flats- small trib flows into Grays Harbor through breach in dike, with small footbridge DS of breach. At low tide currently. Stable perennial vegetation, and normal channel meander US and DS of dike. No sign of mass erosion.

**WDFW Fish Passage and Diversion Inventory Database
Level A Culvert Assessment Report**

Site ID: 1310002		Fish Use Potential: Yes
Stream: Unnamed	Tributary To: Grays Harbor	WRIA: 22.0000
Latitude: 46.98091	Longitude: -123.92195	PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/05/2003

Description:

Small footbridge anchored on both banks with wood planks. Channel is not eroding behind these planks. Dike breached approx 15m US of footbridge. Current water running is freshwater stream- all mud substrate. Natural channel meanders US and DS of dike.



Results:

Barrier: No	Passability (%) 100	Repair Status: OK
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Potential Habitat Gain:

Survey Type:	Length (m):	Spawning (sq m):	Rearing (sq m):
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WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310003

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 46.92997
Longitude (WGS 84): -123.01103
East (NAD 27):
North (NAD 27):

Owner

Name: Black River NWR unit
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: N/A

Mile Post:
County: Thurston
WDFW Region:
1/4 Section: SW
Section: 25
Township: 17N
Range: 03W

Associated Features

Culvert

Waterbody

Stream: N/A
Tributary To: Black R 23.0649
WRIA:
River Mile:
Fish Use Potential: No
FUP Criteria: Physical

Species Potential

Location/Directions:

Back in old Guise farm property- approximately 100m off Delphi Rd down old farm trail to seasonal wetland area/floodplain for Black River.

Site Comments:

Seasonal wetland/floodplain adjacent to Black River- several random culverts out here in field, with no road evident. May have been part of previous farm irrigation system, or an old tractor road- No stream channels evident.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: **1310003** Sequencer: **1.1** Fish Use Potential: **No**
Stream: **N/A** Tributary To: **Black R 23.0649** WRIA:
Latitude: **46.92997** Longitude: **-123.01103** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/06/2003

Culvert Description

Shape: RND Culvert H2O Depth (m):
Material: PVC Velocity (m/sec):
Span (m): 0.30 Apron:
Rise (m): 0.30 Tidegate:
Length (m): FillDepth: 0.00

Plunge Pool

Length (m):
Max Depth (m):
OHW Width (m):

Level A Parameters:

Bed Material Present:
Outfall Drop (m):
Culvert Slope (%):
Ave. Bed Width (m):
Culvert/Stream Width Ratio:



Results:

Barrier: Passability (%) Repair Status: Method:
Problem:

Comments:

Culvert in middle of floodplain/seasonal wetland. No stream channel. No road evident. Second portion of smaller culvert wedged inside PVC culvert at (DS?) end and is approx 0.15m x 0.15m and is CST. 2 other culverts lie parallel in the field.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310004

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 46.93002
Longitude (WGS 84): -123.01103
East (NAD 27):
North (NAD 27):

Owner

Name: Black River NWR unit
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: N/A

Mile Post:
County: Thurston
WDFW Region:
1/4 Section: SW
Section: 25
Township: 17N
Range: 03W

Associated Features

Culvert

Waterbody

Stream: N/A
Tributary To: Black R 23.0649
WRIA:
River Mile:
Fish Use Potential: No
FUP Criteria: Physical

Species Potential

Location/Directions:

Back in old Guise farm property- approximately 100m off Delphi Rd down old farm trail to seasonal wetland area/floodplain for Black River.

Site Comments:

Seasonal wetland/floodplain adjacent to Black River- several random culverts out here in field, with no road evident. May have been part of previous farm irrigation system, or an old tractor road- No stream channels evident.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: **1310004** Sequencer: **1.1** Fish Use Potential: **No**
Stream: **N/A** Tributary To: **Black R 23.0649** WRIA:
Latitude: **46.93002** Longitude: **-123.01103** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/06/2003

Culvert Description

Shape: RND Culvert H2O Depth (m):
Material: CST Velocity (m/sec):
Span (m): 0.40 Apron:
Rise (m): 0.40 Tidegate:
Length (m): FillDepth: 0.00

Plunge Pool

Length (m):
Max Depth (m):
OHW Width (m):

Level A Parameters:

Bed Material Present:
Outfall Drop (m):
Culvert Slope (%):
Ave. Bed Width (m):
Culvert/Stream Width Ratio:



Results:

Barrier: Passability (%) Repair Status: Method:
Problem:

Comments:

No stream channel- No road evident- Culvert is galvanized steel. 2 other culverts lie parallel in the same wetland/floodplain, and none are sunk into the ground at all, but there is dirt/grass throughout each culvert.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310005

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 46.93008
Longitude (WGS 84): -123.01102
East (NAD 27):
North (NAD 27):

Owner

Name: Black River NWR unit
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: N/A

Mile Post:
County: Thurston
WDFW Region:
1/4 Section: SW
Section: 25
Township: 17N
Range: 03W

Associated Features

Culvert

Waterbody

Stream: N/A
Tributary To: Black R 23.0649
WRIA:
River Mile:
Fish Use Potential: No
FUP Criteria: Physical

Species Potential

Location/Directions:

Back in old Guise farm property- approximately 100m off Delphi Rd down old farm trail to seasonal wetland area/floodplain for Black River.

Site Comments:

Seasonal wetland/floodplain adjacent to Black River- several random culverts out here in field, with no road evident. May have been part of previous farm irrigation system, or an old tractor road- No stream channels evident.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: **1310005** Sequencer: **1.1** Fish Use Potential: **No**
Stream: **N/A** Tributary To: **Black R 23.0649** WRIA:
Latitude: **46.93008** Longitude: **-123.01102** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/06/2003

Culvert Description

Plunge Pool

Shape:	RND	Culvert H2O Depth (m):	Length (m):
Material:	CST	Velocity (m/sec):	Max Depth (m):
Span (m):	0.40	Apron:	OHW Width (m):
Rise (m):	0.40	Tidegate:	
Length (m):		FillDepth:	0.00

Level A Parameters:

Bed Material Present:
Outfall Drop (m):
Culvert Slope (%):
Ave. Bed Width (m):
Culvert/Stream Width Ratio:



Results:

Barrier: Passability (%) Repair Status: Method:
Problem:

Comments:

Culvert in middle of seasonal wetland/floodplain with no road evident- and no stream channel. 2 other culverts lie parallel in the same field, none are sunk into the ground, but all have dirt/grass inside the culverts.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310006

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.07485
Longitude (WGS 84): -122.72829
East (NAD 27):
North (NAD 27):

Owner

Name: Nisqually NWR
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Brown Farm dike

Mile Post:
County: Thurston
WDFW Region:
1/4 Section: NW
Section: 38
Township: 18N
Range: 01E

Downstream Check

Associated Features

Culvert

Waterbody

Stream: Unnamed
Tributary To: McAllister Cr
WRIA: 11.0000
River Mile:
Fish Use Potential: Yes
FUP Criteria: Physical

Species Potential

Pink
Chum
Chinook
Coho
Steelhead
Sea Run Cutthroat
Resident Trout

Location/Directions:

At corner of dike trail where trail splits N and S alongside McAllister Cr. Where McAllister creek meanders closest to the dike.

Site Comments:

McAllister Cr is tidally influenced- inside the dike is managed for waterfowl habitat. The RB side of McAllister creek is rip rapped along the dike. It is a controlled waterway US of the culvert, and the DS end is approx 1.5m below the high tide line.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: 1310006	Sequencer: 1.1	Fish Use Potential: Yes
Stream: Unnamed	Tributary To: McAllister Cr 11.0317	WRIA: 11.0000
Latitude: 47.07485	Longitude: -122.72829	PI Total:

Field Review Crew: Lantz, Tschekofske Field Review Date: 08/07/2003

Culvert Description

Plunge Pool

Shape:	RND	Culvert H2O Depth (m):	0.15	Length (m):
Material:	PCC	Velocity (m/sec):		Max Depth (m):
Span (m):	1.00	Apron:	No	OHW Width (m):
Rise (m):	1.00	Tidegate:	Yes	
Length (m):	35.68	FillDepth:	2.00	

Level A Parameters:

Bed Material Present:	No
Outfall Drop (m):	0.00
Culvert Slope (%):	
Ave. Bed Width (m):	
Culvert/Stream Width Ratio:	



Results:

Barrier: Yes Passability (%) 0 Repair Status: UD Method: LA
 Problem: tidegate, water control planks

Comments:

DS steel end sticks out from steel wall, and continues under dike as PCC structure with enclosed concrete box at US end, which is blocked by wood planks- so no water is exchanged currently. DS drains directly into McAllister Cr with no outfall. Managed to provide migratory bird habitat.

Potential Habitat Gain:

Survey Type:	Length (m):	Spawning (sq m):	Rearing (sq m):
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WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310007

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.07995
Longitude (WGS 84): -122.72911
East (NAD 27):
North (NAD 27):

Owner

Name: Nisqually NWR
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Brown Farm dike

Mile Post:
County: Thurston
WDFW Region:
1/4 Section: NW
Section: 38
Township: 18N
Range: 01E

Downstream Check

Associated Features

Culvert

Waterbody

Stream: Unnamed
Tributary To: McAllister Cr
WRIA: 11.0000
River Mile:
Fish Use Potential: Yes
FUP Criteria: Physical

Species Potential

Pink
Chum
Chinook
Coho
Steelhead
Sea Run Cutthroat
Resident Trout

Location/Directions:

On Brown Farm dike trail, heading N along the westernmost side of the dike- In upper NW quarter of the NW quarter section.

Site Comments:

Approx. 30m off McAllister Cr- stream flows down through tidal mudflats. Ditched drainage US, water levels regulated for waterfowl management. Currently at onset of returning high tides. Tidal gate is stuck open as tide comes in.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: 1310007	Sequencer: 1.1	Fish Use Potential: Yes
Stream: Unnamed	Tributary To: McAllister Cr 11.0317	WRIA: 11.0000
Latitude: 47.07995	Longitude: -122.72911	PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/07/2003

Culvert Description

Plunge Pool

Shape: RND	Culvert H2O Depth (m): 0.80	Length (m):
Material: PCC	Velocity (m/sec):	Max Depth (m): 0.80
Span (m): 1.10	Apron: No	OHW Width (m):
Rise (m): 1.10	Tidegate: Yes	
Length (m): 15.39	FillDepth: 1.70	

Level A Parameters:

Bed Material Present:	No
Outfall Drop (m):	0.30
Culvert Slope (%):	
Ave. Bed Width (m):	
Culvert/Stream Width Ratio:	



Results:

Barrier: Yes Passability (%) 0 Repair Status: UD Method: LA
 Problem: tide gate, wood planks

Comments:

Outfall is before tide came up, and water depth in culvert is as tide is flowing in. DS steel end sticks out 2.4m from steel wall at edge of dike, concrete culvert under dike, ends in enclosed concrete box blocked off with wood planks to control water. Managed to provide migratory bird habitat.

Potential Habitat Gain:

Survey Type:	Length (m):	Spawning (sq m):	Rearing (sq m):
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WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310008

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.35595
Longitude (WGS 84): -123.98846
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Intake Rd

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: NE
Section: 31
Township: 22N
Range: 10W

Associated Features

Culvert

Waterbody

Stream: N/A
Tributary To: Cook Cr 21.0429
WRIA:
River Mile:
Fish Use Potential: No
FUP Criteria: Physical

Species Potential

Location/Directions:

At turn for hatchery on Highway 26, take gravel rd. across from hatchery entrance, heading north alongside Cook Cr.

Site Comments:

Road drainage- no stream channel. Cook Cr approximately 15m DS, drainage through perennial grasses to creek.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: **1310008** Sequencer: **1.1** Fish Use Potential: **No**
Stream: **N/A** Tributary To: **Cook Cr 21.0429** WRIA:
Latitude: **47.35595** Longitude: **-123.98846** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

Culvert Description

Shape: RND Culvert H2O Depth (m):
Material: PVC Velocity (m/sec):
Span (m): 0.45 Apron:
Rise (m): 0.45 Tidegate:
Length (m): FillDepth: 1.70

Plunge Pool

Length (m):
Max Depth (m):
OHW Width (m):

Level A Parameters:

Bed Material Present:
Outfall Drop (m): 0.00
Culvert Slope (%):
Ave. Bed Width (m):
Culvert/Stream Width Ratio:



Results:

Barrier: Passability (%) Repair Status: Method:
Problem:

Comments:

Smooth inside; all the culverts on this road are set to be replaced in the summer of 2004

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310009

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.35724
Longitude (WGS 84): -123.98830
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Intake Rd

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: NE
Section: 31
Township: 22N
Range: 10W

Associated Features

Culvert

Waterbody

Stream: Unnamed
Tributary To: Cook Cr 21.0429
WRIA: 22.0000
River Mile:
Fish Use Potential: Yes
FUP Criteria: Physical

Species Potential

Sea Run Cutthroat
Resident Trout
Chum
Chinook
Coho

Location/Directions:

Second culvert heading north along Cook Cr, on Intake Rd.

Site Comments:

Good tree coverage US, fairly low gradient stream. Cook Cr is approximately 5m DS. US is timberlands with fairly small drainage area.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: **1310009** Sequencer: **1.1** Fish Use Potential: **Yes**
Stream: **Unnamed** Tributary To: **Cook Cr 21.0429** WRIA: **22.0000**
Latitude: **47.35724** Longitude: **-123.98830** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

Culvert Description

Shape: RND Culvert H2O Depth (m): 0.05
Material: CST Velocity (m/sec):
Span (m): 0.45 Apron: No
Rise (m): 0.45 Tidegate: No
Length (m): 12.25 FillDepth: 1.00

Plunge Pool

Length (m):
Max Depth (m):
OHW Width (m):

Level A Parameters:

Bed Material Present: No
Outfall Drop (m): 0.35
Culvert Slope (%): 1.14
Ave. Bed Width (m): 0.65
Culvert/Stream Width Ratio: 0.69



Results:

Barrier: Yes Passability (%) 33 Repair Status: NG Method: LA
Problem: slope, outfall

Comments:

Several small rock cascades beneath outlet at DS end, drains directly to small spring fed trib running parallel with Cook Cr, approximately 15m away. Took the outfall measurement to the first cascade point below the culvert.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310010

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.35508
Longitude (WGS 84): -123.98647
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Intake Rd

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: NW
Section: 32
Township: 22N
Range: 10W

Associated Features

Culvert

Waterbody

Stream: Unnamed
Tributary To: Cook Cr 21.0429
WRIA: 22.0000
River Mile:
Fish Use Potential: No
FUP Criteria: Physical

Species Potential

Location/Directions:

Third culvert heading north along Cook cr, on Intake Rd.

Site Comments:

Originates from spring drainage that runs parallel with the road on US side; artesian spring is source of water for the tribe, and water levels can fluctuate dramatically within a short period of time depending on usage. Seeps along the hillside here.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: **1310010** Sequencer: **1.1** Fish Use Potential: **No**
Stream: **Unnamed** Tributary To: **Cook Cr 21.0429** WRIA: **22.0000**
Latitude: **47.35508** Longitude: **-123.98647** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

Culvert Description

Shape:	RND	Culvert H2O Depth (m):	Length (m):
Material:	CST	Velocity (m/sec):	Max Depth (m):
Span (m):	0.35	Apron:	OHW Width (m):
Rise (m):	0.35	Tidegate:	
Length (m):		FillDepth:	0.70

Plunge Pool

Level A Parameters:

Bed Material Present:
Outfall Drop (m):
Culvert Slope (%):
Ave. Bed Width (m):
Culvert/Stream Width Ratio:



Results:

Barrier: Passability (%) Repair Status: Method:
Problem:

Comments:

Crushed DS, and slightly crushed US. Seasonal wetland area DS of culvert. Will be replaced summer 2004.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310011

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.35425
Longitude (WGS 84): -123.98532
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Intake Rd

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: NW
Section: 32
Township: 22N
Range: 10W

Associated Features

Culvert

Waterbody

Stream: Unnamed
Tributary To: Cook Cr 21.0429
WRIA: 21.0000
River Mile:
Fish Use Potential: No
FUP Criteria: Physical

Species Potential

Location/Directions:

Fourth culvert heading north along Cook cr, on Intake Rd.

Site Comments:

Pipe for artesian spring approximately 15m US, some backflow at US end of pipe into wetland/bog area, as well as straight to Cook Cr DS.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: **1310011** Sequencer: **1.1** Fish Use Potential: **No**
Stream: **Unnamed** Tributary To: **Cook Cr 21.0429** WRIA: **21.0000**
Latitude: **47.35425** Longitude: **-123.98532** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

Culvert Description

Plunge Pool

Shape:	RND	Culvert H2O Depth (m):	0.17	Length (m):
Material:	CST	Velocity (m/sec):		Max Depth (m):
Span (m):	0.45	Apron:	No	OHW Width (m):
Rise (m):	0.45	Tidegate:	No	
Length (m):		FillDepth:	1.20	

Level A Parameters:

Bed Material Present:
Outfall Drop (m):
Culvert Slope (%):
Ave. Bed Width (m):
Culvert/Stream Width Ratio:



Results:

Barrier: Passability (%) Repair Status: Method:
Problem:

Comments:

Cascades at DS end, fairly silted in US end of pipe

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310012

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.35314
Longitude (WGS 84): -123.98480
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Intake Rd

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: NW
Section: 32
Township: 22N
Range: 10W

Associated Features

Culvert

Waterbody

Stream: Unnamed
Tributary To: Cook Cr 21.0429
WRIA: 21.0000
River Mile:
Fish Use Potential: Yes
FUP Criteria: Physical

Species Potential

Sea Run Cutthroat
Resident Trout
Chum
Chinook
Coho

Location/Directions:

Fifth culvert heading north along Cook cr, on Intake Rd.

Site Comments:

Drains directly to Cook Cr. Good tree coverage US (mostly alder, western hemlock.) Here stream is mostly gravels.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: **1310012** Sequencer: **1.1** Fish Use Potential: **Yes**
Stream: **Unnamed** Tributary To: **Cook Cr 21.0429** WRIA: **21.0000**
Latitude: **47.35314** Longitude: **-123.98480** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

Culvert Description

Plunge Pool

Shape:	RND	Culvert H2O Depth (m):	0.05	Length (m):
Material:	CST	Velocity (m/sec):		Max Depth (m):
Span (m):	0.45	Apron:	No	OHW Width (m):
Rise (m):	0.45	Tidegate:	No	
Length (m):	10.37	FillDepth:	0.55	

Level A Parameters:

Bed Material Present:	No
Outfall Drop (m):	0.35
Culvert Slope (%):	1.16
Ave. Bed Width (m):	0.85
Culvert/Stream Width Ratio:	0.53



Results:

Barrier: Yes Passability (%) 33 Repair Status: NG Method: LA
Problem: outfall, slope

Comments:

Drops several times onto boulders/cascades DS, then drains to Cook Cr.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310013

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.35422
Longitude (WGS 84): -123.98592
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Intake Rd

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: NW
Section: 32
Township: 22N
Range: 10W

Associated Features

Culvert

Waterbody

Stream: Unnamed
Tributary To: Cook Cr 21.0429
WRIA: 21.0000
River Mile:
Fish Use Potential: No
FUP Criteria: Physical

Species Potential

Location/Directions:

Sixth culvert heading north along Cook cr, on Intake Rd.

Site Comments:

Drains small seasonal wetlands, runs slightly subsurface DS, under large cobble. Muddy substrate US. Cook Cr is approximately 40m DS, no longer visible.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: 1310013	Sequencer: 1.1	Fish Use Potential: No
Stream: Unnamed	Tributary To: Cook Cr 21.0429	WRIA: 21.0000
Latitude: 47.35422	Longitude: -123.98592	PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

Culvert Description

Shape: RND	Culvert H2O Depth (m): 0.02
Material: CST	Velocity (m/sec):
Span (m): 0.45	Apron: No
Rise (m): 0.45	Tidegate: No
Length (m):	FillDepth: 0.50

Plunge Pool

Length (m):
Max Depth (m):
OHW Width (m):

Level A Parameters:

Bed Material Present:
Outfall Drop (m): 0.05
Culvert Slope (%):
Ave. Bed Width (m):
Culvert/Stream Width Ratio:



Results:

Barrier:	Passability (%)	Repair Status:	Method:
Problem:			

Comments:

Good tree coverage US, alder and western hemlock dominated.

Potential Habitat Gain:

Survey Type:	Length (m):	Spawning (sq m):	Rearing (sq m):
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WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310014

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.35141
Longitude (WGS 84): -123.98386
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Intake Rd

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: NW
Section: 32
Township: 22N
Range: 10W

Associated Features

Culvert

Waterbody

Stream: Unnamed
Tributary To: Cook Cr 21.0429
WRIA: 21.0000
River Mile:
Fish Use Potential: No
FUP Criteria: Physical

Species Potential

Location/Directions:

Seventh culvert heading north along Cook cr, on Intake Rd.

Site Comments:

No water in channel. Hemlock forest US, mixed forest DS. Quite a ways from Cook Cr now.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: 1310014	Sequencer: 1.1	Fish Use Potential: No
Stream: Unnamed	Tributary To: Cook Cr 21.0429	WRIA: 21.0000
Latitude: 47.35141	Longitude: -123.98386	PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

Culvert Description

Shape: RND	Culvert H2O Depth (m):
Material: CST	Velocity (m/sec):
Span (m): 0.50	Apron: No
Rise (m): 0.50	Tidegate: No
Length (m):	FillDepth: 0.65

Plunge Pool

Length (m):
 Max Depth (m):
 OHW Width (m):

Level A Parameters:

Bed Material Present: Yes
 Outfall Drop (m):
 Culvert Slope (%):
 Ave. Bed Width (m):
 Culvert/Stream Width Ratio:



Results:

Barrier: Passability (%) Repair Status: Method:
 Problem:

Comments:

DS end is half filled with substrate.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310015

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.35157
Longitude (WGS 84): -123.98395
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Intake Rd

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: SW
Section: 32
Township: 22N
Range: 10W

Associated Features

Gravity Diversion

Waterbody

Stream: Cook Cr
Tributary To: Quinault R 21.0398
WRIA: 21.0429
River Mile:
Fish Use Potential: Yes
FUP Criteria: Other

Species Potential

Pink Sea Run Cutthroat
Chum Resident Trout
Chinook Dolly/Bull Trout
Coho
Steelhead

Location/Directions:

Gps'd at intake screen location, point of diversion is US at hatchery intake dam/ladder. Screen location and outlet for return water is on south side of Intake Rd approximately 100m DS of dam. Associated with dam 1310017.

Site Comments:

On RB side of river- this water is for the hatchery rearing ponds. Large concrete ponds w/flat screens to filter debris/fish back into Cook Cr. This intake essentially dewateres the creek down to the outlet during summer flows. LB trib gives some water.

WDFW Fish Passage and Diversion Inventory Database
Gravity Diversion Assessment Report

Site ID: 1310015		Fish Use Potential: Yes
Stream: Cook Cr	Tributary To: Quinault R 21.0398	WRIA: 21.0429
Latitude: 47.35157	Longitude: -123.98395	SPI TOTAL:

Field Review Crew: Lantz,	Field Review Date: 08/18/2003
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Diversion:

Access By: Vehicle	Point of Diversion: RB
Diversion Dam: -1	Headgate: 0
Diversion Ditch Area (sq ft):	Flow (gpm): 22450
Flow Derivation: Water Right	Water Right ID No: S2-00875C



Screen:

Screened: Yes	Screen Condition: OK
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Comments:

Currently the drop for juvenile fish that pass over the screens is through a 1/4 inch opening, then straight down 1.4m to the plunge pool below which returns to Cook Cr. Wooden planks can be removed or added to raise or lower this opening.

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310016

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.34987
Longitude (WGS 84): -123.98166
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Intake Rd

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: SW
Section: 32
Township: 22N
Range: 10W

Associated Features

Culvert

Waterbody

Stream: Unnamed
Tributary To: Cook Cr 21.0429
WRIA: 21.0000
River Mile:
Fish Use Potential: No
FUP Criteria: Physical

Species Potential

Location/Directions:

Eighth culvert heading north along Cook cr, on Intake Rd.

Site Comments:

Drains small seasonal wetland US, no well defined stream channel here.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: **1310016** Sequencer: **1.1** Fish Use Potential: **No**
Stream: **Unnamed** Tributary To: **Cook Cr 21.0429** WRIA: **21.0000**
Latitude: **47.34987** Longitude: **-123.98166** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

Culvert Description

Shape: RND Culvert H2O Depth (m):
Material: CST Velocity (m/sec):
Span (m): 0.50 Apron: No
Rise (m): 0.50 Tidegate: No
Length (m): FillDepth: 0.25

Plunge Pool

Length (m):
Max Depth (m):
OHW Width (m):

Level A Parameters:

Bed Material Present: Yes
Outfall Drop (m):
Culvert Slope (%):
Ave. Bed Width (m):
Culvert/Stream Width Ratio:



Results:

Barrier: Passability (%) Repair Status: Method:
Problem:

Comments:

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310017

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.35132
Longitude (WGS 84): -123.97971
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: N/A

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: SW
Section: 32
Township: 22N
Range: 10W

Associated Features

Fishway

Dam

Waterbody

Stream: Cook Cr
Tributary To: Quinault R 21.0398
WRIA: 21.0429
River Mile: 5.00
Fish Use Potential: Yes
FUP Criteria: Mapped

Species Potential

Pink	Sea Run Cutthroat
Chum	Resident Trout
Chinook	Dolly/Bull Trout
Coho	
Steelhead	

Location/Directions:

At end of Intake Rd- dam spans Cook Cr.

Site Comments:

Dam is 2-tiered with fish ladder with removable wood planks, currently no water is going over dam or through fish ladder. Water intake on RB side of dam for hatchery.

**WDFW Fish Passage and Diversion Inventory Database
Fishway Description Report**

Site ID: **1310017** Fish Use Potential: **Yes**
 Stream: **Cook Cr** Tributary To: **Quinault R 21.0398** WRIA: **21.0429**
 Latitude: **47.35132** Longitude: **-123.97971** PI Total:
 Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

General Description:

Fishway Type: WP Construction Year: 1968 Attached To: Dam
 Fishway currently dry, all water is diverted to water intake structure for hatchery currently. Wood weirs can be inserted when necessary, and the upper weir is concrete, with the dam as the next level.

Weir Pool, Pool Chute, Vertical Slot, and Steep Pass Fishway Components:

No. of Pools: 5 Number of Weirs: 4 Weir Type: Concrete
 Entrance Pool Depth (m): 1 Pool Head Difference (m): .30

Streambed Elevation Controls:

Control Location: Number of Controls: Control Type:

Culvert or Flume Components:

Comments:

At end of Intake Rd. If wood weirs were in place, head differential would be approximately .30m, which is a barrier to juvenile fish passage. Lack of water currently below the dam is also a barrier.



Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database

Dam Assessment Report

Site ID: **1310017** Fish Use Potential: **Yes**
Stream: **Cook Cr** Tributary To: **Quinault R 21.0398** WRIA: **21.0429**
Latitude: **47.35132** Longitude: **-123.97971** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

Dam Name: Quinault Hatchery intake Reservoir Name:
Primary Purpose: Other Type: Concrete Span: Partial

Assessment Parameters:

Length (m): 35.00
Height (m): 1.50
Water Surface Difference (m):
Plunge Pool Depth (m):



Results:

Barrier: No Passability (%): FW Repair Status: OK
Problem: No water flowing over dam, all is directed into intake for hatchery off RB side of dam.
Fishway on RB side can have wood weirs placed to facilitate fish passage. Stream is

Comments:

If water were flowing over the dam, and planks were in place on fish ladder, it would be partially passable- however it looks like there would be a jump greater than 0.24m at several points along the fish ladder which makes this barrier to juvenile fish.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310018

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.35824
Longitude (WGS 84): -123.99385
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: N/A

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: NE
Section: 31
Township: 22N
Range: 10W

Associated Features

Dam

Waterbody

Stream: Cook Cr
Tributary To: Quinault R 21.0398
WRIA: 21.0429
River Mile: 4.50
Fish Use Potential: Yes
FUP Criteria: Mapped

Species Potential

Pink	Sea Run Cutthroat
Chum	Resident Trout
Chinook	Dolly/Bull Trout
Coho	
Steelhead	

Location/Directions:

Spans Cook Cr next to hatchery facilities, at end of 3 Sockeye Rd.

Site Comments:

Electric weir spans most of Cook Cr, with fish ladder on RB side leading up into hatchery. Under current management, electric weir is on at all times. Weir is level with stream bottom.

WDFW Fish Passage and Diversion Inventory Database

Dam Assessment Report

Site ID: **1310018** Fish Use Potential: **Yes**
Stream: **Cook Cr** Tributary To: **Quinault R 21.0398** WRIA: **21.0429**
Latitude: **47.35824** Longitude: **-123.99385** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

Dam Name: Quinault electric weir Reservoir Name:
Primary Purpose: Other Type: Concrete Span: Partial

Assessment Parameters:

Length (m): 35.00
Height (m): 0.00
Water Surface Difference (m): 0.00
Plunge Pool Depth (m): 0.00



Results:

Barrier: Yes Passability (%): 0 Repair Status: UD
Problem: Electric current passes between metal bars on base of weir, which is at same level as stream bottom. Bypass is also at stream level, and currently electrified. Fish ladder on

Comments:

The weir itself is not a physical barrier, but as it is currently always electrified, it is considered zero percent passable for all fish species.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310019

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.35828
Longitude (WGS 84): -123.99416
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: N/A

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: NE
Section: 31
Township: 22N
Range: 10W

Associated Features

Culvert

Waterbody

Stream: Unnamed
Tributary To: Cook Cr 21.0429
WRIA:
River Mile:
Fish Use Potential: No
FUP Criteria: Physical

Species Potential

Location/Directions:

Approximately 15m DS from electric weir for hatchery- runs out of diked area.

Site Comments:

Drainage for hillsides- not a stream. Occasionally adult Coho get up the culvert and get stuck in the ditch at high flows- hatchery needs to cover the front of the culvert during salmon runs.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: 1310019	Sequencer: 1.1	Fish Use Potential: No
Stream: Unnamed	Tributary To: Cook Cr 21.0429	WRIA:
Latitude: 47.35828	Longitude: -123.99416	PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

Culvert Description

Plunge Pool

Shape:	RND	Culvert H2O Depth (m):	0.05	Length (m):	
Material:	CST	Velocity (m/sec):		Max Depth (m):	
Span (m):	0.60	Apron:		OHW Width (m):	
Rise (m):	0.60	Tidegate:			
Length (m):		FillDepth:	1.10		

Level A Parameters:

Bed Material Present:

Outfall Drop (m): 0.25

Culvert Slope (%):

Ave. Bed Width (m):

Culvert/Stream Width Ratio:



Results:

Barrier:	Passability (%)	Repair Status:	Method:
Problem:			

Comments:

Culvert protrudes from hillside approx 2m

Potential Habitat Gain:

Survey Type:	Length (m):	Spawning (sq m):	Rearing (sq m):
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WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310020

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.35980
Longitude (WGS 84): -123.98762
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Unnamed

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: SW
Section: 29
Township: 22N
Range: 10W

Associated Features

Gravity Diversion

Dam

Waterbody

Stream: Hatchery Cr
Tributary To: Cook Cr 21.0429
WRIA: 21.0000
River Mile:
Fish Use Potential: Yes
FUP Criteria: Physical

Species Potential

Pink
Chum
Chinook
Coho
Steelhead

Sea Run Cutthroat
Resident Trout
Dolly/Bull Trout

Location/Directions:

Approx 100m US of double culvert 1310021 on Sockeye RD.

Site Comments:

Provides pathogen free water for hatchery incubation. Partial dam with removable wooden planks for water control, and intake screen on RB side. Hatchery Cr enters Cook Cr US of the electric weir.

WDFW Fish Passage and Diversion Inventory Database

Dam Assessment Report

Site ID: **1310020** Fish Use Potential: **Yes**
Stream: **Hatchery Cr** Tributary To: **Cook Cr 21.0429** WRIA: **21.0000**
Latitude: **47.35980** Longitude: **-123.98762** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

Dam Name: Hatchery Cr Intake

Reservoir Name:

Primary Purpose: Other

Type: Concrete Span: Partial



Assessment Parameters:

Length (m): 18.00
Height (m): 1.60
Water Surface Difference (m): 1.40
Plunge Pool Depth (m): 0.25



Results:

Barrier: Yes Passability (%): 33 Repair Status: UD

Problem: At highest flows water can go over upper dam wall. Water currently flows over on RB side into intake screen, while debris and fish would be pushed over the screen down into

Comments:

Good spawning and rearing habitat US. Wetland formed directly US of dam. Looks like LB side has been pretty heavily logged just off the stream channel. Current jump up over the dam would be 1.4m.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310021

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.35857
Longitude (WGS 84): -123.99087
East (NAD 27):
North (NAD 27):

Owner

Name: Quinault NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Sockeye Rd

Mile Post:
County: Grays Harbor
WDFW Region:
1/4 Section: NE
Section: 31
Township: 22N
Range: 10W

Associated Features

Culvert

Waterbody

Stream: Hatchery Cr
Tributary To: Cook Cr 21.0429
WRIA: 21.0000
River Mile:
Fish Use Potential: Yes
FUP Criteria: Physical

Species Potential

	Sea Run Cutthroat
Pink	Resident Trout
Chum	Dolly/Bull Trout
Chinook	
Coho	
Steelhead	

Location/Directions:

Just prior to entering hatchery facilities, at fork in road on Sockeye Rd.

Site Comments:

Enters Cook Cr approx 40m DS, above hatchery weir. Double culvert, LB side seems a little more sedimented in.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: 1310021	Sequencer: 1.2	Fish Use Potential: Yes
Stream: Hatchery Cr	Tributary To: Cook Cr 21.0429	WRIA: 21.0000
Latitude: 47.35857	Longitude: -123.99087	PI Total:

Field Review Crew: Lantz, Tschekofske Field Review Date: 08/18/2003

Culvert Description		Plunge Pool	
Shape: SQSH	Culvert H2O Depth (m): 0.30	Length (m):	
Material: CST	Velocity (m/sec):	Max Depth (m):	
Span (m): 1.80	Apron: BE	OHW Width (m):	
Rise (m): 1.20	Tidegate: No		
Length (m): 24.60	FillDepth: 2.60		

Level A Parameters:

Bed Material Present:	Yes
Outfall Drop (m):	0.00
Culvert Slope (%):	1.91
Ave. Bed Width (m):	2.00
Culvert/Stream Width Ratio:	1.80



Results:

Barrier: No Passability (%) 100 Repair Status: OK Method: LA
 Problem:

Comments:

Apron wraps up on both sides of culvert and is approx 2m long on both ends. Nice habitat DS, a little braided. Intake dam approx 100m US on Hatchery Cr. Mostly young alders, and some hemlock for canopy.

Potential Habitat Gain:

Survey Type:	Length (m):	Spawning (sq m):	Rearing (sq m):
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WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: **1310021** Sequencer: **2.2** Fish Use Potential: **Yes**
Stream: **Hatchery Cr** Tributary To: **Cook Cr 21.0429** WRIA: **21.0000**
Latitude: **47.35857** Longitude: **-123.99087** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/18/2003

Culvert Description

Shape:	SQSH	Culvert H2O Depth (m):	0.25	Length (m):
Material:	CST	Velocity (m/sec):		Max Depth (m):
Span (m):	1.80	Apron:	BE	OHW Width (m):
Rise (m):	1.20	Tidegate:	No	
Length (m):	22.73	FillDepth:	2.60	

Plunge Pool

Level A Parameters:

Bed Material Present: Yes
Outfall Drop (m): 0.00
Culvert Slope (%): 2.94
Ave. Bed Width (m): 2.00
Culvert/Stream Width Ratio: 1.80



Results:

Barrier: No Passability (%) 100 Repair Status: OK Method: LA
Problem:

Comments:

Apron wraps up on both sides of culvert and is approx 2m long on both ends. Slope is not a barrier since the culvert has streambed material throughout. Dam and intake structure US will have an unnatural effect on this system.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310022

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 48.28999
 Longitude (WGS 84): -124.65021
 East (NAD 27):
 North (NAD 27):

Owner

Name: Makah NFH
 Type: Federal

Evaluation Level Completed

Report Logged
 Field Review

General Location

Road Name: N/A

 Mile Post:
 County: Clallam
 WDFW Region:
 1/4 Section: NE
 Section: 8
 Township: 32N
 Range: 15W

Associated Features

Dam

Waterbody

Stream: Sooes R
 Tributary To: Pacific Ocean
 WRIA: 20.0015
 River Mile: 3.00
 Fish Use Potential: Yes
 FUP Criteria: Mapped

Species Potential

Pink	Sea Run Cutthroat
Chum	Resident Trout
Chinook	Dolly/Bull Trout
Coho	
Steelhead	

Location/Directions:

At Makah NFH, electric fish weir spans entire river

Site Comments:

Very little riparian canopy cover, some small alders along banks. Metal bars hang down over the top of the weir, and an electric current passes through down to the base of the weir. The weir is tidally influenced- high tides can flow over the top.

WDFW Fish Passage and Diversion Inventory Database

Dam Assessment Report

Site ID: **1310022** Fish Use Potential: **Yes**
Stream: **Sooes R** Tributary To: **Pacific Ocean** WRIA: **20.0015**
Latitude: **48.28999** Longitude: **-124.65021** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/19/2003

Dam Name: Makah Electric Weir Reservoir Name:
Primary Purpose: Other Type: Concrete Span: Full

Assessment Parameters:

Length (m): 31.00
Height (m): 3.60
Water Surface Difference (m): 3.15
Plunge Pool Depth (m): 1.10



Results:

Barrier: Yes Passability (%): 67 Repair Status: UD
Problem: Weir off from mid Feb- Mar for native Steelhead run. Small constructed spillway on LB side for salmonid passage. Top of dam to bottom at low tide is approx 3m. Weir and

Comments:

We saw a large adult trout sitting just above the weir. At low tides and on, the weir is a barrier. The fish ladder has slots cut out at the base of each weir, which allow juvenile passage- however it is only intended to bring adults into the hatchery.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310023

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 48.28938
Longitude (WGS 84): -124.65038
East (NAD 27):
North (NAD 27):

Owner

Name: Makah NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: N/A

Mile Post:
County: Clallam
WDFW Region:
1/4 Section: NE
Section: 8
Township: 32N
Range: 15W

Associated Features

Pump Diversion

Waterbody

Stream: Sooes R
Tributary To: Pacific Ocean
WRIA: 20.0015
River Mile: 3.00
Fish Use Potential: Yes
FUP Criteria: Mapped

Species Potential

Pink	Sea Run Cutthroat
Chum	Resident Trout
Chinook	Dolly/Bull Trout
Coho	
Steelhead	

Location/Directions:

Intake is on hatchery property, LB side of river approx 30m US of electric fish weir

Site Comments:

Large grating is in front of entrance to pump house, with a concrete wall partially framing in the intake area.

WDFW Fish Passage and Diversion Inventory Database
Pump Diversion Assessment Report

Site ID: **1310023** Fish Use Potential: **Yes**
 Stream: **Sooes R** Tributary To: **Pacific Ocean** WRIA: **20.0015**
 Latitude: **48.28938** Longitude: **-124.65038** SPI Total:
 Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/19/2003

Diversion:

Access By: Foot Point of Diversion: LB Location: RB
 Fish Bypass: na Diversion Dam: 0 Screened: Yes

Screen:

Screen Type: OT
 Screen Material: WM
 Diameter (ft): 0.61
 Height (ft):
 Length (ft): 3.00
 Area (sq ft): 1.83
 Opening Dimension (in): 3/16
 Condition: OK
 Compliance (WDFW Criteria): No



Pump:

Pump Type: Turbine Intake Pipe Outside Diameter (in):
 Capacity (gpm): 22450 Capacity Derivation: Water Right
 Water Right ID No: tribal Power Meter No:

Comments:

Consists of 23 panels that rotate, water is propelled through by an impeller (like a boat motor).
 Sprayers move debris and fish off to the sides of the screen where they are then directed to a trash
 area. Currently fish are not returned to the river.

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310024

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 48.28883
Longitude (WGS 84): -124.65044
East (NAD 27):
North (NAD 27):

Owner

Name: Makah NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: N/A

Mile Post:
County: Clallam
WDFW Region:
1/4 Section: NE
Section: 8
Township: 32N
Range: 15W

Associated Features

Culvert

Waterbody

Stream: N/A
Tributary To: Sooes R 20.0015
WRIA:
River Mile:
Fish Use Potential: No
FUP Criteria: Other

Species Potential

Location/Directions:

At Makah fish hatchery, culvert runs from effluent ponds out into Sooes river above the weir and intake.

Site Comments:

Culvert has adjustable metal gate on US side- currently open 0.5m. Effluent ponds sometimes contain random hatchery juvenile escapees. Not a natural stream system.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: 1310024	Sequencer: 1.1	Fish Use Potential: No
Stream: N/A	Tributary To: Sooes R 20.0015	WRIA:
Latitude: 48.28883	Longitude: -124.65044	PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/19/2003

Culvert Description		Plunge Pool	
Shape:	RND	Culvert H2O Depth (m):	0.40
Material:	CST	Velocity (m/sec):	
Span (m):	0.40	Apron:	
Rise (m):	0.40	Tidegate:	
Length (m):	6.00	FillDepth:	2.00
		Length (m):	
		Max Depth (m):	
		OHW Width (m):	

Level A Parameters:

Bed Material Present: Unk
 Outfall Drop (m): 0.00
 Culvert Slope (%):
 Ave. Bed Width (m):
 Culvert/Stream Width Ratio:



Results:

Barrier: Passability (%) Repair Status: Method:
 Problem:

Comments:

DS end of culvert completely submerged, could not access for slope and measures are estimates. Fully influenced by the Sooes River approx 20m DS. US end walled in with 1.5m tall adjustable gate to regulate water removal. Not meant for fish usage.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310025

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 48.29056
Longitude (WGS 84): -124.65336
East (NAD 27):
North (NAD 27):

Owner

Name: Makah NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Hatchery Rd

Mile Post:
County: Clallam
WDFW Region:
1/4 Section: NE
Section: 8
Township: 32N
Range: 15W

Associated Features

Culvert

Waterbody

Stream: Unnamed
Tributary To: Sooes R 20.0015
WRIA: 20.0000
River Mile:
Fish Use Potential: Yes
FUP Criteria: Physical

Species Potential

Sea Run Cutthroat
Resident Trout

Coho

Location/Directions:

Just prior to entering main hatchery facility on Hatchery Rd.

Site Comments:

Seasonal wetland US, lots of braiding DS. First time dry in many years. Tribe has surveyed in the past and found juvenile coho in this trib.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: 1310025	Sequencer: 1.1	Fish Use Potential: Yes
Stream: Unnamed	Tributary To: Sooes R 20.0015	WRIA: 20.0000
Latitude: 48.29056	Longitude: -124.65336	PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/19/2003

Culvert Description		Plunge Pool	
Shape:	RND	Culvert H2O Depth (m):	Length (m): 5.40
Material:	CST	Velocity (m/sec):	Max Depth (m): 0.55
Span (m):	1.20	Apron:	No
Rise (m):	1.25	Tidegate:	No
Length (m):	12.12	FillDepth:	0.30
			OHW Width (m): 2.10

Level A Parameters:

Bed Material Present:	No
Outfall Drop (m):	0.00
Culvert Slope (%):	0.25
Ave. Bed Width (m):	
Culvert/Stream Width Ratio:	



Results:

Barrier: Unk Passability (%): Repair Status: UD Method: LB
 Problem:

Comments:

Appears to have periodic high velocities due to the size of the plunge pool, no bed material, and a high rust line within the culvert. No toe because of braiding and wetland influence, and no downstream control so the barrier status is unknown.

Potential Habitat Gain:

Survey Type:	Length (m):	Spawning (sq m):	Rearing (sq m):
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WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310026

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.80685
Longitude (WGS 84): -122.92054
East (NAD 27):
North (NAD 27):

Owner

Name: Quilcene NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: N/A

Mile Post:
County: Jefferson
WDFW Region:
1/4 Section: NW
Section: 27
Township: 27N
Range: 02W

Associated Features

Fishway
Dam

Waterbody

Stream: Big Quilcene R
Tributary To: Hood Canal
WRIA: 17.0012
River Mile: 3.30
Fish Use Potential: Yes
FUP Criteria: Mapped

Species Potential

Pink
Chum
Coho
Steelhead
Sea Run Cutthroat
Resident Trout

Location/Directions:

Approximately 3/4 mile US of main hatchery facility, on LB side of Big Quilcene river.

Site Comments:

Concrete dam spans most of the RB side, with a fish ladder and hatchery intake structure on LB side.

**WDFW Fish Passage and Diversion Inventory Database
Fishway Description Report**

Site ID: **1310026** Fish Use Potential: **Yes**
 Stream: **Big Quilcene R** Tributary To: **Hood Canal** WRIA: **17.0012**
 Latitude: **47.80685** Longitude: **-122.92054** PI Total:
 Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/20/2003

General Description:

Fishway Type: VS Construction Year: 1984 Attached To: Dam
 US constructed dike on RB side of river helps direct half of the stream flow towards the intake structure and dam- the dike is semi-permeable concrete slabs covered with LWD, rip rap and sediment. Part of the river flows through the dike US.

Weir Pool, Pool Chute, Vertical Slot, and Steep Pass Fishway Components:

No. of Pools: 4 Number of Weirs: 3 Weir Type: Concrete
 Entrance Pool Depth (m): 1 Pool Head Difference (m): .30

Streambed Elevation Controls:

Control Location: Number of Controls: Control Type:

Culvert or Flume Components:



Comments:

Dam at moderate to high flows would pass water over the top; at low flows it dries up much of the river directly DS. Grating for intake structure is on LB side of fishladder

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

**WDFW Fish Passage and Diversion Inventory Database
Dam Assessment Report**

Site ID: **1310026** Fish Use Potential: **Yes**
 Stream: **Big Quilcene R** Tributary To: **Hood Canal** WRIA: **17.0012**
 Latitude: **47.80685** Longitude: **-122.92054** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/20/2003

Dam Name: Quilcene hatchery intake Reservoir Name:
 Primary Purpose: Other Type: Concrete Span: Partial

Assessment Parameters:

Length (m): 19.50
 Height (m): 1.00
 Water Surface Difference (m):
 Plunge Pool Depth (m): 0.75



Results:

Barrier: No Passability (%): 100 Repair Status: OK

Problem: Water currently only flows through fish ladder (or is directed into hatchery intake), and is moderate velocity. Slots at tops of weirs allow fish to swim up through the ladder.

Comments:

Since hatchery intake structure is directly US of the ladder, it is possible that fish can be pulled down into the intake, and pushed back out into the Big Quilcene river just above the electric weir. No water flowing over the dam at low flows.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310027

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.80934
Longitude (WGS 84): -122.91441
East (NAD 27):
North (NAD 27):

Owner

Name: Quilcene NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Unnamed

Mile Post:
County: Jefferson
WDFW Region:
1/4 Section: NW
Section: 27
Township: 27N
Range: 02W

Associated Features

Gravity Diversion

Waterbody

Stream: Big Quilcene R
Tributary To: Hood Canal
WRIA: 17.0012
River Mile: 3.30
Fish Use Potential: Yes
FUP Criteria: Other

Species Potential

Pink
Chum
Coho
Steelhead
Sea Run Cutthroat
Resident Trout

Location/Directions:

At Quilcene hatchery; inlet for intake is on LB side of dam 1310026, outlet is next to hatchery fish holding ponds.

Site Comments:

Fish come in through intake pipe, and are shot back into the river just upstream of the electric weir. Small fish seen in the pre-settling area prior to where water is filtered through drum screens.

WDFW Fish Passage and Diversion Inventory Database
Gravity Diversion Assessment Report

Site ID: 1310027		Fish Use Potential: Yes
Stream: Big Quilcene R	Tributary To: Hood Canal	WRIA: 17.0012
Latitude: 47.80934	Longitude: -122.91441	SPI TOTAL:

Field Review Crew: Lantz, Tschaekofske	Field Review Date: 08/20/2003
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Diversion:

Access By: Vehicle	Point of Diversion: LB
Diversion Dam: -1	Headgate: 0
Diversion Ditch Area (sq ft):	Flow (gpm): 6735
Flow Derivation: Water Right	Water Right ID No: S2-07466C



Screen:

Screened: Yes	Screen Condition: OK
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Comments:

At inlet, metal grating openings .10m; water is piped approx 100m DS to pre-settling facility where fish and debris are screened out. Valves control the amount of water being held in pre-settling; high velocities for water and fish returned to river.

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310028

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.81035
 Longitude (WGS 84): -122.91294
 East (NAD 27):
 North (NAD 27):

Owner

Name: Quilcene NFH
 Type: Federal

Evaluation Level Completed

Report Logged
 Field Review

General Location

Road Name: N/A

Mile Post:
 County: Jefferson
 WDFW Region:
 1/4 Section: SE
 Section: 22
 Township: 27N
 Range: 02W

Downstream Check
 Physical Survey

Associated Features

Dam

Waterbody

Stream: Big Quilcene R
 Tributary To: Hood Canal
 WRIA: 17.0012
 River Mile: 2.80
 Fish Use Potential: Yes
 FUP Criteria: Mapped

Species Potential

Pink
 Chum
 Coho
 Steelhead
 Sea Run Cutthroat
 Resident Trout

Location/Directions:

Spans Big Quilcene river at fish hatchery- just south of highway 101. If inoperable fish ladder were cleared out and fixed, then fish passability would be 100%.

Site Comments:

Penny Cr runs into the Quilcene off LB side of electric weir and fishway. Electric weir turned off from Jan - April; and at some low flows it is a physical barrier to adult migration. Inoperable fish ladder between weir and hatchery fish ladder.

WDFW Fish Passage and Diversion Inventory Database

Dam Assessment Report

Site ID: **1310028** Fish Use Potential: **Yes**
Stream: **Big Quilcene R** Tributary To: **Hood Canal** WRIA: **17.0012**
Latitude: **47.81035** Longitude: **-122.91294** PI Total: **59.70**

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/20/2003

Dam Name: Quilcene electric weir

Reservoir Name:

Primary Purpose: Other

Partial



Assessment Parameters:

Length (m): 27.40
Height (m): 1.50
Water Surface Difference (m): 1.50
Plunge Pool Depth (m): 1.50

Results:

Barrier: Yes Passability (%): 33 Repair Status: RR

Problem: Slanted weir w/2 tiers- initial drop is .6m, and second drop is .45m with a 2.44% slope surface in between. Inoperable fish ladder on LB side of weir (sedimented in- put in for

Comments:

Penny Cr culvert flows under the hatchery fish ladder. Adults can get up the first tier of the weir, but get stuck on the sloped portion. Adult fish are physically passed above by hatchery personnel. The electric weir is a full physical barrier to juvenile fish.

Potential Habitat Gain:

Survey Type: FS Length (m): 5584 Spawning (sq m): 13766 Rearing (sq m): 33376

WDFW Fish Passage and Diversion Inventory Database

Habitat Survey Summary Report

Site ID: 1310028		Fish Use Potential:	Yes
Stream: Big Quilcene R	Tributary To: Hood Canal	WRIA:	17.0012
Latitude: 47.81035	Longitude: -122.91294	PI Total:	59.70

Survey Type: FS

Spreadsheet File(s):
1310028.xls
1310028summary.xls

Downstream Check:

Date: 09/09/2003 Length (m): 4,506 No.of Downstream Barriers: 0

Downstream Comments:

The downstream check was unnecessary as the Big Quilcene river is verified free of barriers down to the mouth at Hood Canal. There are two bridges downstream, one at the Highway 101 crossing, and one at Linger Longer Rd.

Upstream Survey:

Date: 09/09/2003 Crew: Lantz, Tschaekofske Length (m): 5,584
No. of Upstream Barriers: 0 Basin Area (sq miles): 59.76

Upstream Comments:

Surveyed US of the hatchery electric weir, up to a natural point barrier waterfall. There are a number of additional waterfall barriers upstream of this point. Almost all tributaries were dry and/or of an extreme gradient so a survey was unwarranted.

Potential Habitat Gain:

Lineal (m): 5,584 Spawning Area (sq m): 13,766 Rearing Area (sq m): 33,376

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310029

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.81047
Longitude (WGS 84): -122.91393
East (NAD 27):
North (NAD 27):

Owner

Name: Quilcene NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Fish Hatchery Rd

Mile Post:
County: Jefferson
WDFW Region:
1/4 Section: SE
Section: 22
Township: 27N
Range: 02W

Associated Features

Culvert

Waterbody

Stream: Penny Cr
Tributary To: Big Quilcene R
WRIA: 17.0014
River Mile: 0.00
Fish Use Potential: Yes
FUP Criteria: Physical

Species Potential

Sea Run Cutthroat
Resident Trout

Coho
Steelhead

Location/Directions:

At entrance to Quilcene hatchery facility- culvert empties out on LB side of electric weir. Resident trout and some fish plants can be found upstream. A small pipe enters on RB side inside the culvert- from hatchery D-deck raceways.

Site Comments:

Hatchery fish ladder is next to outlet for culvert so fish that are imprinted on Penny Cr water will come up into hatchery. Penny Cr has ~ 4-6% gradient above the culvert. WDFW surveyed Penny Cr in 1998, and got a PI# 42.44.

WDFW Fish Passage and Diversion Inventory Database

Level A Culvert Assessment Report

Site ID: 1310029	Sequencer: 1.1	Fish Use Potential: Yes
Stream: Penny Cr	Tributary To: Big Quilcene R	WRIA: 17.0014
Latitude: 47.81047	Longitude: -122.91393	PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/20/2003

Culvert Description

Shape:	RND	Culvert H2O Depth (m):	0.08
Material:	CST	Velocity (m/sec):	
Span (m):	2.40	Apron:	No
Rise (m):	2.40	Tidegate:	No
Length (m):	64.01	FillDepth:	1.00

Plunge Pool

Length (m):	
Max Depth (m):	
OHW Width (m):	



Level A Parameters:

Bed Material Present:	No
Outfall Drop (m):	1.00
Culvert Slope (%):	2.50
Ave. Bed Width (m):	
Culvert/Stream Width Ratio:	



Results:

Barrier: Yes Passability (%) 0 Repair Status: RR Method: LA
 Problem: slope, outfall

Comments:

Concrete on bottom of culvert-some water from culvert drops into screen at outlet that runs down a pipe and enters B.Quilcene next to hatchery fish ladder. Any resident fish or debris are passed over this screen. Intake for hatchery approx 40m US. WDFW used clinometer to get slope for original culvert survey and got 5% slope, we got 2.5% using laser(concrete on culvert interior may affect shot.)

Potential Habitat Gain:

Survey Type:	Length (m):	Spawning (sq m):	Rearing (sq m):
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WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310030

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.81125
Longitude (WGS 84): -122.91513
East (NAD 27):
North (NAD 27):

Owner

Name: Quilcene NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: N/A

Mile Post:
County: Jefferson
WDFW Region:
1/4 Section: SW
Section: 22
Township: 27N
Range: 02W

Associated Features

Gravity Diversion

Dam

Waterbody

Stream: Penny Cr
Tributary To: Big Quilcene R
WRIA: 17.0014
River Mile: 0.10
Fish Use Potential: Yes
FUP Criteria: Physical

Species Potential

Sea Run Cutthroat
Resident Trout

Coho
Steelhead

Location/Directions:

US of Penny Cr. Culvert on Fish Hatchery Rd approx 40m. WDFW got a PI# of 42.44 for the culvert downstream; the PI for the intake would be comparable if current physical surveys were performed. The intake water is pathogen free water for hatchery.

Site Comments:

Has been here since 1911, no fish passage possible because of culvert DS. Looks like there could have been a small cascade or drop here prior to intake- probably only a maximum drop of 1m- based on land formation at this point. Overall drop from intake down to Big Quilcene river is 6.6m over a distance of 140m = 4.7% slope.

WDFW Fish Passage and Diversion Inventory Database

Dam Assessment Report

Site ID: **1310030** Fish Use Potential: **Yes**
Stream: **Penny Cr** Tributary To: **Big Quilcene R** WRIA: **17.0014**
Latitude: **47.81125** Longitude: **-122.91513** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/27/2003

Dam Name: Penny Cr. Intake Reservoir Name:
Primary Purpose: Other Type: Concrete
Span: Full



Assessment Parameters:

Length (m): 8.00
Height (m): 1.00
Water Surface Difference (m): 1.00
Plunge Pool Depth (m): 0.50

Results:

Barrier: Yes Passability (%): 33 Repair Status: UD

Problem: Hatchery intake forms dam, pond above is dredged periodically. Slanted screen just below intake wall allows water to drop through, while fish and debris would be passed

Comments:

Valve and small passageway on LB side of screens could be used to pass fish, no weir steps. Generally this is used to release water, and sediment that is backing up. Barrier status based on current jump, without passageway opened.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Gravity Diversion Assessment Report

Site ID: 1310030		Fish Use Potential: Yes
Stream: Penny Cr	Tributary To: Big Quilcene R	WRIA: 17.0014
Latitude: 47.81125	Longitude: -122.91513	SPI TOTAL:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/20/2003

Diversion:

Access By: Vehicle	Point of Diversion: RB
Diversion Dam: -1	Headgate: 0
Diversion Ditch Area (sq ft):	Flow (gpm): 11225
Flow Derivation: Water Right	Water Right ID No: S2-10233, S2-01218C



Screen:

Screened: Yes	Screen Condition: OK
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Comments:

1.0m drop off from screen, not set up for upstream fish movement. LB presettling area has bypass valve for controlling water levels on dammed pond (could maybe pass fish)- currently no water in presettling area. Pond dredged periodically.

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310031

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.80885
Longitude (WGS 84): -122.90968
East (NAD 27):
North (NAD 27):

Owner

Name: Quilcene NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Fish Hatchery Rd

Mile Post:
County: Jefferson
WDFW Region:
1/4 Section: SE
Section: 22
Township: 27N
Range: 02W

Associated Features

Culvert

Waterbody

Stream: N/A
Tributary To: Big Quilcene R
WRIA:
River Mile:
Fish Use Potential: No
FUP Criteria: Physical

Species Potential

Location/Directions:

Approx 15m upstream from highway 101 bridge- on LB side of Big Quilcene river

Site Comments:

Drains pollution abatement ponds for hatchery- has rubber boot on front that is partially open, is supposed to collapse with low flows; also metal grate on DS end of boot to keep fish out.

WDFW Fish Passage and Diversion Inventory Database
Level A Culvert Assessment Report

Site ID: **1310031** Sequencer: **1.1** Fish Use Potential: **No**
 Stream: **N/A** Tributary To: **Big Quilcene R** WRIA:
 Latitude: **47.80885** Longitude: **-122.90968** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/20/2003

Culvert Description		Plunge Pool	
Shape: RND	Culvert H2O Depth (m): 0.20	Length (m):	
Material:	Velocity (m/sec):	Max Depth (m):	
Span (m):	Apron:	OHW Width (m):	
Rise (m):	Tidegate:		
Length (m):	FillDepth:		

Level A Parameters:

Bed Material Present:
 Outfall Drop (m): 0.00
 Culvert Slope (%):
 Ave. Bed Width (m):
 Culvert/Stream Width Ratio:



Results:

Barrier: Passability (%)
 Repair Status: Method:
 Problem:

Comments:

Occasionally fish have come up this culvert- grate in front should prevent this now. Culvert dimensions inaccessible. Water is coming through the boot at fairly high velocity as it is constricted. Not intended to be accessible for fish.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310032

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 47.69725
Longitude (WGS 84): -122.89493
East (NAD 27):
North (NAD 27):

Owner

Name: Quilcene NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: N/A

Mile Post:
County: Jefferson
WDFW Region:
1/4 Section: SE
Section: 35
Township: 26N
Range: 02W

Associated Features

Other

Waterbody

Stream: Walcott Sl
Tributary To: Hood Canal
WRIA: 16.0000
River Mile: 0.00
Fish Use Potential: Yes
FUP Criteria: Physical

Species Potential

Sea Run Cutthroat

Chum

Coho

Location/Directions:

Approx 100m east of Highway 101; out in tidal flats along Hood Canal. Old hatchery processing facility for chum- no longer used.

Site Comments:

There are a number of slough channels running through this area, all eventually heading under 101 to a spring fed area US. Very small drainage. Completely tidally influenced

**WDFW Fish Passage and Diversion Inventory Database
Level A Culvert Assessment Report**

Site ID: 1310032		Fish Use Potential: Yes
Stream: Walcott SI	Tributary To: Hood Canal	WRIA: 16.0000
Latitude: 47.69725	Longitude: -122.89493	PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/20/2003

Description:

Old trap and haul for Quilcene fish hatchery- still in place, with metal grating within channel. This grating would block an adult from passing at low flows, but there are other channels that would take the fish around this obstacle. Juv fish can pass.



Results:

Barrier: No Passability (%) Repair Status: OK

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):

WDFW Fish Passage and Diversion Inventory Database
Site Description Report

Site ID: 1310033

Reported By: USFWS

Project: FPGRANT

Geographic Coordinates

Latitude (WGS 84): 48.29105
Longitude (WGS 84): -124.65185
East (NAD 27):
North (NAD 27):

Owner

Name: Makah NFH
Type: Federal

Evaluation Level Completed

Report Logged
Field Review

General Location

Road Name: Unnamed

Mile Post:
County: Clallam
WDFW Region:
1/4 Section: NE
Section: 8
Township: 32N
Range: 15W

Associated Features

Culvert

Waterbody

Stream: N/A
Tributary To: Sooes R 20.0015
WRIA:
River Mile:
Fish Use Potential: No
FUP Criteria: Physical

Species Potential

Location/Directions:

Just off main road into hatchery, next to fish holding ponds- under small gravel drive.

Site Comments:

Dry drainage ditch- may be used for some hatchery water releases. Spreads out downstream in riparian area for Sooes River, and no obvious stream channel at this point.

**WDFW Fish Passage and Diversion Inventory Database
Level A Culvert Assessment Report**

Site ID: **1310033** Sequencer: **1.1** Fish Use Potential: **No**
 Stream: **N/A** Tributary To: **Sooes R 20.0015** WRIA:
 Latitude: **48.29105** Longitude: **-124.65185** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/29/2003

Culvert Description		Plunge Pool	
Shape:	RND	Culvert H2O Depth (m):	Length (m):
Material:	PVC	Velocity (m/sec):	Max Depth (m):
Span (m):	0.90	Apron:	OHW Width (m):
Rise (m):	0.90	Tidegate:	
Length (m):		FillDepth:	0.50



Level A Parameters:

Bed Material Present:
 Outfall Drop (m):
 Culvert Slope (%):
 Ave. Bed Width (m):
 Culvert/Stream Width Ratio:

Results:

Barrier: Passability (%) Repair Status: Method:
 Problem:

Comments:

Ditch drainage for hatchery facility- no stream here.

Potential Habitat Gain:

Survey Type: Length (m): Spawning (sq m): Rearing (sq m):