

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

**Site ID:** 1310034

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 48.29080  
Longitude (WGS 84): -124.65190  
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 facilities- next to fish holding ponds. Culvert 1310033 is 20m away- but not connected.

**Site Comments:**

Dry drainage ditch- no channel US. DS has grate at outlet that allows water to flow underground.

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

Site ID: **1310034**                      Sequencer: **1.1**                      Fish Use Potential: **No**  
 Stream: **N/A**                              Tributary To: **Sooes R 20.0015**                      WRIA:  
 Latitude: **48.29080**                      Longitude: **-124.65190**                      PI Total:

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

<b>Culvert Description</b>		<b>Plunge Pool</b>	
Shape:	RND	Culvert H2O Depth (m):	Length (m):
Material:	PCC	Velocity (m/sec):	Max Depth (m):
Span (m):	0.35	Apron:	OHW Width (m):
Rise (m):	0.35	Tidegate:	
Length (m):		FillDepth:	0.70

**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:**

Bevelled US and DS for .75m.

**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:** 1310035

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.02567  
Longitude (WGS 84): -122.66449  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NFH  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Spring 2 Intake Rd

Mile Post:  
County: Pierce  
WDFW Region:  
1/4 Section: SW  
Section: 22  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Clear Cr  
Tributary To: Nisqually R 11.0008  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Yes  
FUP Criteria: Physical

**Species Potential**

Sea Run Cutthroat  
Resident Trout  
Chum  
Coho

**Location/Directions:**

On small gravel road near spring #2 at the hatchery- crosses Clear Cr drainages.

**Site Comments:**

Drainage between spring fed ponds. Culvert submerged, measurements are from plans. Very little or no water being exchanged- may be sedimented in.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: **1310035**      Sequencer: **1.1**      Fish Use Potential: **Yes**  
Stream: **Clear Cr**      Tributary To: **Nisqually R 11.0008**      WRIA: **11.0000**  
Latitude: **47.02567**      Longitude: **-122.66449**      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/02/2003

<b>Culvert Description</b>		<b>Plunge Pool</b>			
Shape:	RND	Culvert H2O Depth (m):	0.60	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:	0.70		

#### Level A Parameters:

Bed Material Present:

Outfall Drop (m): No Image Available

Culvert Slope (%):

Ave. Bed Width (m):

Culvert/Stream Width Ratio:

#### Results:

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

Problem:

#### Comments:

Could not access culvert-measurements from spec's.

#### 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:** 1310036

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.02497  
Longitude (WGS 84): -122.66443  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NFH  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Spring 1 Intake Rd

Mile Post:  
County: Pierce  
WDFW Region:  
1/4 Section: SW  
Section: 22  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Clear Cr  
Tributary To: Nisqually R 11.0008  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Yes  
FUP Criteria: Physical

**Species Potential**

Sea Run Cutthroat  
Resident Trout  
Chum  
Coho

**Location/Directions:**

At Spring 2- on small private drive which crosses spring fed ponds, drainage to Clear Cr.

**Site Comments:**

Springs from hillsides feed ponds- Culvert submerged- and may be sedimented in. Very little or no water being exchanged.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: **1310036**      Sequencer: **1.1**      Fish Use Potential: **Yes**  
Stream: **Clear Cr**      Tributary To: **Nisqually R 11.0008**      WRIA: **11.0000**  
Latitude: **47.02497**      Longitude: **-122.66443**      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/02/2003

<b>Culvert Description</b>		<b>Plunge Pool</b>			
Shape:	RND	Culvert H2O Depth (m):	0.60	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:	0.70		

#### Level A Parameters:

Bed Material Present:

Outfall Drop (m): No Image Available

Culvert Slope (%):

Ave. Bed Width (m):

Culvert/Stream Width Ratio:

#### Results:

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

Problem:

#### Comments:

Upstream side sticks out underwater approx 10 feet from side of road.

#### 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:** 1310037

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.03620  
Longitude (WGS 84): -122.67234  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NFH  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Pierce  
WDFW Region:  
1/4 Section: NW  
Section: 22  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

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

**Species Potential**

**Location/Directions:**

Small gravel road running out to Spring Cr intake structure.

**Site Comments:**

Drains hillside above 4-bay Rd to remove oils from road side. No stream channel, upper culvert is 1310040.

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

Site ID: **1310037**                      Sequencer: **1.1**                      Fish Use Potential: **No**  
 Stream: **N/A**                              Tributary To: **Unnamed**                      WRIA:  
 Latitude: **47.03620**                      Longitude: **-122.67234**                      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/02/2003

<b>Culvert Description</b>		<b>Plunge Pool</b>	
Shape:	RND	Culvert H2O Depth (m):	0.01
Material:	PVC	Velocity (m/sec):	
Span (m):	0.20	Apron:	
Rise (m):	0.20	Tidegate:	
Length (m):		FillDepth:	2.00
		Length (m):	
		Max Depth (m):	
		OHW Width (m):	

**Level A Parameters:**

Bed Material Present:  
 Outfall Drop (m): 0.20  
 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:** 1310038

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.03623  
Longitude (WGS 84): -122.67257  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NFH  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Pierce  
WDFW Region:  
1/4 Section: NW  
Section: 22  
Township: 18N  
Range: 01E

**Associated Features**

Gravity Diversion

**Waterbody**

Stream: Unnamed  
Tributary To: Nisqually R 11.0008  
WRIA:  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

On Spring Cr.- just below the Upper 4 Bay Rd.

**Site Comments:**

Spring fed, very short stream. Intake structure pipes water down to created wetland that mitigates for the dam on Clear Cr to provide rearing habitat for chum.

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

Site ID: <b>1310038</b>	Fish Use Potential: <b>Unk</b>
Stream: <b>Unnamed</b>	Tributary To: <b>Nisqually R 11.0008</b> WRIA:
Latitude: <b>47.03623</b>	Longitude: <b>-122.67257</b> SPI TOTAL:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/02/2003

**Diversion:**

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



**Screen:**

Screened:      Yes	Screen Condition:      OK
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**Comments:**

Very steep gradient upstream, 15-20%. 1.53m tall x 1.6m long, pools up on back side- very unlikely any fish in stream. Piped approx 120m DS through .6m diameter pipe that flows out of a concrete box with metal plates that would block most fish access

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

**Site ID:** 1310039

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.03621  
Longitude (WGS 84): -122.67157  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NFH  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Upper 4 Bay Rd

Mile Post:  
County: Pierce  
WDFW Region:  
1/4 Section: NW  
Section: 22  
Township: 18N  
Range: 01E

**Associated Features**

Gravity Diversion

**Waterbody**

Stream: N/A  
Tributary To: Clear Cr 11.0000  
WRIA:  
River Mile:  
Fish Use Potential: No  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

Next to 4 Bay Rd, up at top of hillside that drains to lower hatchery dam.

**Site Comments:**

Spring 3- diverting water to holding ponds. Entrance point for a number of hillside drainages, through network of french drainages. Culvert catches any excess runoff, and shoots it down under the 4 Bay Rd.

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

Site ID:	<b>1310039</b>	Fish Use Potential:	<b>No</b>
Stream:	<b>N/A</b>	Tributary To:	<b>Clear Cr 11.0000</b>
Latitude:	<b>47.03621</b>	Longitude:	<b>-122.67157</b>
		WRIA:	
		SPI TOTAL:	

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/02/2003

**Diversion:**

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



**Screen:**

Screened: Yes      Screen Condition: OK

**Comments:**

No stream channel US or DS. 1.55m x 1.55m screen size. Dam is 8m long/2m high. Backwatered pool above dam. No flow information, water rights are all tribal for the hatchery.

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

**Site ID:** 1310040

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.03617  
Longitude (WGS 84): -122.67178  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NFH  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Upper 4 Bay Rd

Mile Post:  
County: Pierce  
WDFW Region:  
1/4 Section: NW  
Section: 22  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: N/A  
Tributary To: Clear Cr 11.0000  
WRIA:  
River Mile:  
Fish Use Potential: No  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

Runs under Upper 4 Bay Rd, at the intake #1310039.

**Site Comments:**

Overflow from spring intake comes through here- No stream channel downstream.

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

Site ID: **1310040**                      Sequencer: **1.1**                      Fish Use Potential: **No**  
 Stream: **N/A**                              Tributary To: **Clear Cr 11.0000**                      WRIA:  
 Latitude: **47.03617**                      Longitude: **-122.67178**                      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/02/2003

<b>Culvert Description</b>		<b>Plunge Pool</b>		
Shape:	RND	Culvert H2O Depth (m):	0.05	Length (m):
Material:	CST	Velocity (m/sec):		Max Depth (m):
Span (m):	0.93	Apron:		OHW Width (m):
Rise (m):	0.93	Tidegate:		
Length (m):		FillDepth:	3.00	

**Level A Parameters:**

Bed Material Present:                      No  
 Outfall Drop (m):                              1.07  
 Culvert Slope (%):  
 Ave. Bed Width (m):  
 Culvert/Stream Width Ratio:



**Results:**

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

**Comments:**

DS end of pipe sticks straight out from hillside approximately 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:** 1310041

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.03427  
Longitude (WGS 84): -122.67376  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NFH  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Upper 4 Bay Rd

Mile Post:  
County: Pierce  
WDFW Region:  
1/4 Section: NW  
Section: 22  
Township: 18N  
Range: 01E

**Associated Features**

Dam

**Waterbody**

Stream: Clear Cr  
Tributary To: Nisqually R 11.0008  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Yes  
FUP Criteria: Physical

**Species Potential**

Sea Run Cutthroat  
Resident Trout  
Chum  
Coho

**Location/Directions:**

Spans Clear Cr just upstream of the Upper 4 Bay Rd; next to the first holding ponds as you drive into the hatchery.

**Site Comments:**

Clear Cr had historic chum run, all fish stop at the dam and are directed into the hatchery facilities through fish ladder on LB side. Some adults currently below the dam.

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

Site ID: **1310041** Fish Use Potential: **Yes**  
 Stream: **Clear Cr** Tributary To: **Nisqually R 11.0008** WRIA: **11.0000**  
 Latitude: **47.03427** Longitude: **-122.67376** PI Total:

Field Review Crew: Lantz, Tschaekofske Field Review Date: 09/02/2003

Dam Name: Upper 4 Bay dam Reservoir Name:  
 Primary Purpose: Other Type: Concrete Span: Full

**Assessment Parameters:**

Length (m): 50.00  
 Height (m): 5.20  
 Water Surface Difference (m): 3.50  
 Plunge Pool Depth (m): 0.80



**Results:**

Barrier: Yes Passability (%): 0 Repair Status: UD  
 Problem: Drops off into concrete box, and then flows through a culvert at the base of the dam.  
 Current water levels are topping the dam- it is also held in by the road. Outlet pipe is

**Comments:**

Managed for hatchery fish- there are incidental species upstream of the dam, some that were here before it was put in.

**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:** 1310042

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.03419  
Longitude (WGS 84): -122.67404  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NFH  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Pierce  
WDFW Region:  
1/4 Section: NW  
Section: 22  
Township: 18N  
Range: 01E

**Associated Features**

Fishway

**Waterbody**

Stream: N/A  
Tributary To: Clear Cr 11.0000  
WRIA:  
River Mile:  
Fish Use Potential: No  
FUP Criteria: Other

**Species Potential**

**Location/Directions:**

Just off 4 Bay Rd., at entrance to dam on LB side of Clear Cr.

**Site Comments:**

Fish ladder brings fish up into hatchery holding ponds- not intended to pass fish up above dam, so it is not evaluated for fish passability in this case.

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

Site ID: **1310042** Fish Use Potential: **No**  
Stream: **N/A** Tributary To: **Clear Cr 11.0000** WRIA:  
Latitude: **47.03419** Longitude: **-122.67404** PI Total:  
Field Review Crew: Lantz, Tschaekofske Field Review Date: 09/02/2003

**General Description:**

Fishway Type: WP Construction Year: 1988 Attached To:  
Fish ladder lowest pool runs straight into Clear Cr- so entrance pool is basically the depth of the creek. Current water levels are flush with the tops of each weir, up to the uppermost weirs that are level with the hatchery facilities.

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

No. of Pools: 15 Number of Weirs: 14 Weir Type: Wood  
Entrance Pool Depth (m): 1.05 Pool Head Difference (m): .30

**Streambed Elevation Controls:**

Control Location: Number of Controls: Control Type:

**Culvert or Flume Components:**

**Comments:**

Managed for hatchery fish only! No plunge pool,  
Flows directly into Clear Creek.



**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:** 1310043

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.03348  
Longitude (WGS 84): -122.67605  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NFH  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: N/A

Mile Post:  
County: Pierce  
WDFW Region:  
1/4 Section: NE  
Section: 21  
Township: 18N  
Range: 01E

**Associated Features**

Other

**Waterbody**

Stream: Nisqually R  
Tributary To: Puget Sound  
WRIA: 11.0008  
River Mile:  
Fish Use Potential: Yes  
FUP Criteria: Mapped

**Species Potential**

Pink  
Chum  
Chinook  
Coho  
Steelhead  
Sea Run Cutthroat  
Resident Trout

**Location/Directions:**

On RB side channel of the Nisqually river- approximately 100m from the hatchery facilities.  
Removable weir for hatchery purposes. Both banks rip rapped on sides of weir.

**Site Comments:**

Clear Cr confluence is downstream of this floating weir. The weir is removed around mid-December so chum and steelhead can pass freely then- coho and Chinook are directed into the hatchery.

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

Site ID: <b>1310043</b>		Fish Use Potential: <b>Yes</b>
Stream: <b>Nisqually R</b>	Tributary To: <b>Puget Sound</b>	WRIA: <b>11.0008</b>
Latitude: <b>47.03348</b>	Longitude: <b>-122.67605</b>	PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/02/2003

**Description:**

Floating weir made of pvc pipes spaced .04m apart lashed together and chained to the banks, air hoses inflate a bag at the DS side that raises or lowers the end of the weir, always 3.5 feet above water surface. Juv fish can pass through. 60 feet across.



**Results:**

Barrier: No      Passability (%) 100      Repair Status:

**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:** 1310044

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0749288  
Longitude (WGS 84): -122.7113209  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: SW  
Section: 5  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Unnamed  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

Off Center Rd, to the east. In NE quarter of SW quarter section. Managed to provide habitat for waterfowl.

**Site Comments:**

Connecting seasonal wetlands for waterfowl. Wooden baffels within upright culvert water control Structure, controls water exchange. No direct exchange currently.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: **1310044**      Sequencer: **1.1**      Fish Use Potential: **Unk**  
Stream: **Unnamed**      Tributary To: **Unnamed**      WRIA: **11.0000**  
Latitude: **47.0749288**      Longitude: **-122.7113209**      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/04/2003

#### Culvert Description

Shape:	RND	Culvert H2O Depth (m):	0.62	Length (m):
Material:	CST	Velocity (m/sec):		Max Depth (m):
Span (m):	0.62	Apron:	DS	OHW Width (m):
Rise (m):	0.62	Tidegate:	No	
Length (m):	11.41	FillDepth:	0.80	

#### Plunge Pool

#### Level A Parameters:

Bed Material Present:      Yes  
Outfall Drop (m):  
Culvert Slope (%):      1.23  
Ave. Bed Width (m):  
Culvert/Stream Width Ratio:



#### Results:

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

#### Comments:

Passability zero due to wooden barrier within culvert- 1m high planks block passage. Otherwise it would be an unknown due to inaccessible downstream control- this is the case with most of the culverts in the refuge, since it is a network of sloughs. Managed to provide migratory bird habitat.

#### 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:** 1310045

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0783477  
Longitude (WGS 84): -122.7115868  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Center Rd  
  
Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: NW  
Section: 5  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Unnamed  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

Center Rd, just north of the barns. Approx 15m from wooden path to barns. In NW quarter of SE quarter section.

**Site Comments:**

DS end perched slightly, US end has vertical culvert with wooden planks to regulate water exchange between the slough channels. Current plank height is .95m.

# WDFW Fish Passage and Diversion Inventory Database

## Level A Culvert Assessment Report

Site ID: <b>1310045</b>	Sequencer: <b>1.1</b>	Fish Use Potential: <b>Unk</b>
Stream: <b>Unnamed</b>	Tributary To: <b>Unnamed</b>	WRIA: <b>11.0000</b>
Latitude: <b>47.0783477</b>	Longitude: <b>-122.7115868</b>	PI Total:

Field Review Crew: Lantz, Tschaekofske    Field Review Date: 09/04/2003

### Culvert Description

Shape: RND	Culvert H2O Depth (m): 0.00
Material: CST	Velocity (m/sec):
Span (m): 0.90	Apron: No
Rise (m): 0.90	Tidegate: No
Length (m): 12.95	FillDepth: 0.50

### Plunge Pool

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

### Level A Parameters:

Bed Material Present:	No
Outfall Drop (m):	0.01
Culvert Slope (%):	1.70
Ave. Bed Width (m):	
Culvert/Stream Width Ratio:	



### Results:

Barrier: Yes    Passability (%) 0    Repair Status: UD    Method: LA  
 Problem: other, slope

### Comments:

Currently zero passability due to wooden planks blocking water exchange. Otherwise slope could be a partial barrier. All of these culverts are managed for waterfowl purposes. No downstream control accessible. 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:** 1310046

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0791950  
Longitude (WGS 84): -122.7140146  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: NW  
Section: 5  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Barn Owl Sl  
Tributary To: Unnamed  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

NW of the 2 barns- on Barn Owl Slough crossing.

**Site Comments:**

Hay field to east and west; sporadic tree coverage along slough channels. No wood planks set currently, but structure is there for future placement- no water currently.

# WDFW Fish Passage and Diversion Inventory Database

## Level A Culvert Assessment Report

Site ID: **1310046**      Sequencer: **1.1**      Fish Use Potential: **Unk**  
Stream: **Barn Owl Sl**      Tributary To: **Unnamed**      WRIA: **11.0000**  
Latitude: **47.0791950**      Longitude: **-122.7140146**      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/04/2003

### Culvert Description

Shape:	RND	Culvert H2O Depth (m):		Length (m):
Material:	CST	Velocity (m/sec):		Max Depth (m):
Span (m):	0.57	Apron:	DS	OHW Width (m):
Rise (m):	0.58	Tidegate:	No	
Length (m):	7.40	FillDepth:	0.85	

### Plunge Pool

### Level A Parameters:

Bed Material Present: No  
Outfall Drop (m): 0.35  
Culvert Slope (%): 0.41  
Ave. Bed Width (m):  
Culvert/Stream Width Ratio:



### Results:

Barrier: Yes      Passability (%) 33      Repair Status: UD      Method: LA  
Problem: outfall

### Comments:

Partial barrier due to outfall- no planks in place currently. Downstream control inaccessible. Slough channels, dried up at US and DS ends of culvert. Managed to provide migratory bird habitat.

### 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:** 1310047

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0823468  
Longitude (WGS 84): -122.7157408  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Center Rd

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: NW  
Section: 5  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Unnamed  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

Approx 1/2 mile from the barns- in SW quarter of NW quarter section.

**Site Comments:**

The DS end is very overgrown with reed canary grass along the slough channel. Hay fields to the west of this channel. No water control structure set up on this culvert.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: **1310047**                      Sequencer: **1.1**                      Fish Use Potential: **Unk**  
Stream: **Unnamed**                      Tributary To: **Unnamed**                      WRIA: **11.0000**  
Latitude: **47.0823468**                      Longitude: **-122.7157408**                      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/04/2003

#### Culvert Description

Shape:	RND	Culvert H2O Depth (m):	0.41	Length (m):
Material:	CST	Velocity (m/sec):		Max Depth (m):
Span (m):	1.00	Apron:	No	OHW Width (m):
Rise (m):	1.00	Tidegate:	No	
Length (m):	20.48	FillDepth:	0.60	

#### Plunge Pool

#### Level A Parameters:

Bed Material Present: Yes  
Outfall Drop (m): 0.00  
Culvert Slope (%): 0.78  
Ave. Bed Width (m):  
Culvert/Stream Width Ratio:



#### Results:

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

#### Comments:

US side of culvert is a little bent and rusted. We cannot get a downstream control, so the culvert passability is unknown- however it looks to be fully passable. Managed to provide migratory bird habitat.

#### 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:** 1310048

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0871329  
Longitude (WGS 84): -122.7146931  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Center Rd  
  
Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: SW  
Section: 32  
Township: 19N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Unnamed  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

In NW quarter of SW quarter section. Slough channel runs alongside Center Rd, lots of water currently.

**Site Comments:**

Slough wetlands US and DS, lots of cattails and reed canary grass on banks. Looks like it could be a historic tidal slough channel.

# WDFW Fish Passage and Diversion Inventory Database

## Level A Culvert Assessment Report

Site ID: **1310048**      Sequencer: **1.1**      Fish Use Potential: **Unk**  
Stream: **Unnamed**      Tributary To: **Unnamed**      WRIA: **11.0000**  
Latitude: **47.0871329**      Longitude: **-122.7146931**      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/08/2003

### Culvert Description

### Plunge Pool

Shape:	RND	Culvert H2O Depth (m):	0.30	Length (m):
Material:	CST	Velocity (m/sec):		Max Depth (m):
Span (m):	0.50	Apron:	US	OHW Width (m):
Rise (m):	0.50	Tidegate:	No	
Length (m):		FillDepth:	1.00	

### Level A Parameters:

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



### Results:

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

### Comments:

Apron US is .65m long, slightly crushed. DS side inaccessible, may be sedimented in. Could not shoot length or slope. Managed to provide migratory bird habitat.

### 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:** 1310049

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0871673  
Longitude (WGS 84): -122.7148908  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Center Rd

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: SW  
Section: 32  
Township: 19N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Unnamed  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: No  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

In NW quarter of SW quarter section.

**Site Comments:**

US looks like a road drainage. DS side up fairly high on roadside, wetland below. Approx 10m from culvert 1310048.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: **1310049**                      Sequencer: **1.1**                      Fish Use Potential: **No**  
Stream: **Unnamed**                      Tributary To: **Unnamed**                      WRIA: **11.0000**  
Latitude: **47.0871673**                      Longitude: **-122.7148908**                      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/08/2003

#### Culvert Description

#### Plunge Pool

Shape:	RND	Culvert H2O Depth (m):	0.00	Length (m):
Material:	CST	Velocity (m/sec):		Max Depth (m):
Span (m):	0.45	Apron:	US	OHW Width (m):
Rise (m):	0.45	Tidegate:	No	
Length (m):		FillDepth:	0.50	

#### Level A Parameters:

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



#### Results:

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

#### Comments:

Apron approx .5m long. DS a small piece has broken off, and is laying below the culvert. Managed to provide migratory bird habitat.

#### 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:** 1310050

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0930051  
Longitude (WGS 84): -122.7128926  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Center Rd  
  
Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: NW  
Section: 32  
Township: 19N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Unnamed  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

North end of Center Rd, just prior to Brown Farm dike junction.

**Site Comments:**

Large slough channel- flows on inside of dike. Pooled up behind US end of culvert due to debris blockage inside.

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

Site ID: **1310050**                      Sequencer: **1.1**                      Fish Use Potential: **Unk**  
 Stream: **Unnamed**                      Tributary To: **Unnamed**                      WRIA: **11.0000**  
 Latitude: **47.0930051**                      Longitude: **-122.7128926**                      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/08/2003

<b>Culvert Description</b>				<b>Plunge Pool</b>	
Shape:	RND	Culvert H2O Depth (m):	0.05	Length (m):	
Material:	CST	Velocity (m/sec):		Max Depth (m):	
Span (m):	0.93	Apron:	No	OHW Width (m):	
Rise (m):	0.83	Tidegate:	No		
Length (m):	11.32	FillDepth:	1.60		

**Level A Parameters:**

Bed Material Present:                      Yes  
 Outfall Drop (m):                              0.00  
 Culvert Slope (%):                              0.17  
 Ave. Bed Width (m):  
 Culvert/Stream Width Ratio:



**Results:**

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

**Comments:**

US end crushed and filled with debris, requires maintenance. Some water seeps through. Unknown barrier status since downstream control is inaccessible. Debris is temporary barrier. Culvert could be broken within, can't see through. Managed to provide migratory bird habitat.

**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:** 1310051

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0933360  
Longitude (WGS 84): -122.7157180  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: NW  
Section: 32  
Township: 19N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Unnamed  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

Inner dike, runs inside the Brown Farm dike. SW quarter of the NW quarter section.

**Site Comments:**

Seasonal slough US- drains to inner dike channel. Set up w/vertical water control structure US- no wood planks blocking water flow currently.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: <b>1310051</b>	Sequencer: <b>1.1</b>	Fish Use Potential: <b>Unk</b>
Stream: <b>Unnamed</b>	Tributary To: <b>Unnamed</b>	WRIA: <b>11.0000</b>
Latitude: <b>47.0933360</b>	Longitude: <b>-122.7157180</b>	PI Total:

Field Review Crew: Lantz, Tschaekofske    Field Review Date: 09/08/2003

Culvert Description		Plunge Pool	
Shape:	RND	Culvert H2O Depth (m):	0.16
Material:	CST	Length (m):	
Span (m):	0.45	Velocity (m/sec):	
Rise (m):	0.45	Apron:	No
Length (m):		Tidegate:	No
		FillDepth:	0.50
		Max Depth (m):	
		OHW Width (m):	

**Level A Parameters:**

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



**Results:**

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

**Comments:**

DS end bevelled for 1m. Metal grating above culvert entrance blocks access for shooting the slope, but the front of the culvert is completely accessible. No downstream control accesible. Managed to provide migratory bird habitat.

**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:** 1310052

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0930318  
Longitude (WGS 84): -122.7113552  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: NW  
Section: 32  
Township: 19N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Unnamed  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

Inner dike inside the Brown farm dike. In SE quarter of NW quarter section.

**Site Comments:**

Similar water control structure visible, but no culvert to be found- looks like it is sedimented in. Dike has been breached 5m away so water is fully passable. Wetland US flows to inner slough channel.

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

Site ID: <b>1310052</b>	Sequencer: <b>1.1</b>	Fish Use Potential: <b>Unk</b>
Stream: <b>Unnamed</b>	Tributary To: <b>Unnamed</b>	WRIA: <b>11.0000</b>
Latitude: <b>47.0930318</b>	Longitude: <b>-122.7113552</b>	PI Total:

Field Review Crew: Lantz, Tschaekofske    Field Review Date: 09/08/2003

	<b>Culvert Description</b>	<b>Plunge Pool</b>
Shape:	Culvert H2O Depth (m):	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): No Image Available

Culvert Slope (%):

Ave. Bed Width (m):

Culvert/Stream Width Ratio:

**Results:**

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

Problem:

**Comments:**

Can't find the culvert, only the water control structure that is above the water. No measurements taken. Managed to provide migratory bird habitat.

**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:** 1310053

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0876593  
Longitude (WGS 84): -122.7046325  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Ring dike Trail

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: SE  
Section: 32  
Township: 19N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Unnamed  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

At northern portion of ring dike trail, next to junction.

**Site Comments:**

Wetlands US and DS, same water control structure US- no water flowing between. No wooden planks in place currently, so it could be blocked within.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: <b>1310053</b>	Sequencer: <b>1.1</b>	Fish Use Potential: <b>Unk</b>
Stream: <b>Unnamed</b>	Tributary To: <b>Unnamed</b>	WRIA: <b>11.0000</b>
Latitude: <b>47.0876593</b>	Longitude: <b>-122.7046325</b>	PI Total:

Field Review Crew: Lantz, Tschaekofske    Field Review Date: 09/08/2003

#### Culvert Description

#### Plunge Pool

Shape: RND	Culvert H2O Depth (m): 0.90	Length (m):
Material: CST	Velocity (m/sec):	Max Depth (m):
Span (m): 0.95	Apron: DS	OHW Width (m):
Rise (m): 0.95	Tidegate: No	
Length (m):	FillDepth: 1.10	

#### Level A Parameters:

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



#### Results:

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

#### Comments:

DS side almost completely submerged, grating above culvert blocks access to shoot the slope. DS apron .85m in length. No downstream control accessible. Managed to provide migratory bird habitat.

#### 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:** 1310054

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0720522  
Longitude (WGS 84): -122.7143322  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: SW  
Section: 5  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Redtailed Hawk SI  
Tributary To: Barn Owl SI  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

At base of NW quarter of SW quarter section.

**Site Comments:**

Culvert is placed fairly high up on the roadside- wetland channel US and DS w/lots of willows, and veg growing around. No water in culvert, but some in slough channel.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: <b>1310054</b>	Sequencer: <b>1.1</b>	Fish Use Potential: <b>Unk</b>
Stream: <b>Redtailed Hawk</b>	Tributary To: <b>Barn Owl SI</b>	WRIA: <b>11.0000</b>
Latitude: <b>47.0720522</b>	Longitude: <b>-122.7143322</b>	PI Total:

Field Review Crew: Lantz, Tschaekofske    Field Review Date: 09/08/2003

Culvert Description		Plunge Pool	
Shape:	RND	Culvert H2O Depth (m):	0.00
Material:	CST	Velocity (m/sec):	
Span (m):	0.63	Apron:	DS
Rise (m):	0.63	Tidegate:	No
Length (m):		FillDepth:	0.40
		Length (m):	
		Max Depth (m):	
		OHW Width (m):	

**Level A Parameters:**

Bed Material Present: No  
 Outfall Drop (m): 0.28  
 Culvert Slope (%):  
 Ave. Bed Width (m):  
 Culvert/Stream Width Ratio:



**Results:**

Barrier: Yes    Passability (%) 67    Repair Status: UD    Method: LA  
 Problem: outfall

**Comments:**

Apron 1m long, and bent upwards, so outfall is a little higher than it would normally be. Can't shoot the culvert due to it be bent and crushed on the DS side. Downstream control inaccessible. Managed to provide migratory bird habitat.

**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:** 1310055

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0751471  
Longitude (WGS 84): -122.7190502  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Cross Dike Rd

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: SE  
Section: 6  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Redtailed Hawk SI  
Tributary To: Barn Owl SI  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

In NE quarter of SE quarter section.

**Site Comments:**

Water control structure on US side, wood planks currently .27m high. Channel dry US and DS, lots of vegetation growing in channel.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: <b>1310055</b>	Sequencer: <b>1.1</b>	Fish Use Potential: <b>Unk</b>
Stream: <b>Redtailed Hawk</b>	Tributary To: <b>Barn Owl Sl</b>	WRIA: <b>11.0000</b>
Latitude: <b>47.0751471</b>	Longitude: <b>-122.7190502</b>	PI Total:

Field Review Crew: Lantz, Tschaekofske    Field Review Date: 09/08/2003

Culvert Description		Plunge Pool	
Shape:	RND	Culvert H2O Depth (m):	0.00
Material:	CST	Velocity (m/sec):	
Span (m):	0.60	Apron:	DS
Rise (m):	0.60	Tidegate:	No
Length (m):	7.08	FillDepth:	1.20
		Length (m):	
		Max Depth (m):	
		OHW Width (m):	

**Level A Parameters:**

Bed Material Present:	Yes
Outfall Drop (m):	0.00
Culvert Slope (%):	1.55
Ave. Bed Width (m):	
Culvert/Stream Width Ratio:	



**Results:**

Barrier: Yes    Passability (%) 33    Repair Status: UD    Method: LA  
 Problem: water control structure

**Comments:**

Apron 1.1m long. Wood planks are barrier currently and at low flows. Otherwise the culvert status would be unknown due to inaccessibility of downstream control. 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:** 1310056

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0752199  
Longitude (WGS 84): -122.7192898  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: SE  
Section: 6  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Unnamed  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

Off Cross Rd dike on small pull off. NE corner of SE quarter section.

**Site Comments:**

Dry ditch- full of vegetation and willows. Water control structure US with wood planks .47m high currently. Runs next to Cross Rd. dike.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: <b>1310056</b>	Sequencer: <b>1.1</b>	Fish Use Potential: <b>Unk</b>
Stream: <b>Unnamed</b>	Tributary To: <b>Unnamed</b>	WRIA: <b>11.0000</b>
Latitude: <b>47.0752199</b>	Longitude: <b>-122.7192898</b>	PI Total:

Field Review Crew: Lantz, Tschaekofske    Field Review Date: 09/08/2003

#### Culvert Description

#### Plunge Pool

Shape: RND	Culvert H2O Depth (m): 0.00	Length (m):
Material: CAL	Velocity (m/sec):	Max Depth (m):
Span (m): 0.63	Apron: DS	OHW Width (m):
Rise (m): 0.63	Tidegate: No	
Length (m): 7.29	FillDepth: 1.80	

#### Level A Parameters:

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



#### Results:

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

#### Comments:

Apron 1.05m long. Wood planks make it a barrier now, otherwise status would be unknown due to inaccessibility of water control structure. Managed to provide migratory bird habitat.

#### 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:** 1310057

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0760744  
Longitude (WGS 84): -122.7210190  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Shannon Rd

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: NE  
Section: 6  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: E Branch Shannon  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: No  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

Just about 40m north of Cross dike Rd.

**Site Comments:**

Small drainage ditch to wetland.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: <b>1310057</b>	Sequencer: <b>1.1</b>	Fish Use Potential: <b>No</b>
Stream: <b>Unnamed</b>	Tributary To: <b>E Branch Shannon</b>	WRIA: <b>11.0000</b>
Latitude: <b>47.0760744</b>	Longitude: <b>-122.7210190</b>	PI Total:

Field Review Crew: Lantz, Tschaekofske    Field Review Date: 09/08/2003

#### Culvert Description

Shape: RND	Culvert H2O Depth (m): 0.00
Material: PCC	Velocity (m/sec):
Span (m): 0.24	Apron: No
Rise (m): 0.24	Tidegate: No
Length (m):	FillDepth: 0.80

#### 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:

Not a part of the slough system. 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:** 1310058

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0828020  
Longitude (WGS 84): -122.7212566  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Shannon Rd

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: NE  
Section: 6  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Shannon Cut off  
Tributary To: Shannon SI  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

Upper NE corner of NE quarter section.

**Site Comments:**

Water control structure at US end with wood planks 1.5m high blocking water flow. Nice wetland DS and US, no trees, lots of overhanging veg. Water trickles through boards.

# WDFW Fish Passage and Diversion Inventory Database

## Level A Culvert Assessment Report

Site ID: **1310058**      Sequencer: **1.1**      Fish Use Potential: **Unk**  
 Stream: **Shannon Cut off**      Tributary To: **Shannon SI**      WRIA: **11.0000**  
 Latitude: **47.0828020**      Longitude: **-122.7212566**      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/08/2003

### Culvert Description

Shape: RND      Culvert H2O Depth (m): 0.32  
 Material: CST      Velocity (m/sec):  
 Span (m): 0.65      Apron: No  
 Rise (m): 0.65      Tidegate: No  
 Length (m): 6.62      FillDepth: 0.80

### Plunge Pool

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

### Level A Parameters:

Bed Material Present: Yes  
 Outfall Drop (m): 0.00  
 Culvert Slope (%): 2.42  
 Ave. Bed Width (m):  
 Culvert/Stream Width Ratio:



### Results:

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

### Comments:

Difference between top of planks and water surface inside the culvert is 1.04m. Barrier due to wood planks, otherwise status would be unknown due to inaccessible downstream control. Managed to provide migratory bird habitat.

### 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:** 1310059

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0833432  
Longitude (WGS 84): -122.7247416  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: SE  
Section: 31  
Township: 19N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Shannon Sl  
Tributary To: Unnamed  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

SW quarter of SE quarter section. Approximately 30m away from Brown farm dike.

**Site Comments:**

Culvert flows to small seasonal wetland off Shannon Slough. No wood planks in place currently in water control structure. Debris completely blocking US end, maintenance needed.

# WDFW Fish Passage and Diversion Inventory Database

## Level A Culvert Assessment Report

Site ID: <b>1310059</b>	Sequencer: <b>1.1</b>	Fish Use Potential: <b>Unk</b>
Stream: <b>Shannon SI</b>	Tributary To: <b>Unnamed</b>	WRIA: <b>11.0000</b>
Latitude: <b>47.0833432</b>	Longitude: <b>-122.7247416</b>	PI Total:

Field Review Crew: Lantz, Tschaekofske    Field Review Date: 09/08/2003

Culvert Description		Plunge Pool	
Shape:	RND	Culvert H2O Depth (m):	0.53
Material:	CST	Velocity (m/sec):	
Span (m):	0.65	Apron:	No
Rise (m):	0.65	Tidegate:	No
Length (m):	8.91	FillDepth:	0.65
		Length (m):	
		Max Depth (m):	
		OHW Width (m):	

**Level A Parameters:**

Bed Material Present:	Unk
Outfall Drop (m):	0.00
Culvert Slope (%):	4.26
Ave. Bed Width (m):	
Culvert/Stream Width Ratio:	



**Results:**

Barrier: Yes    Passability (%) 0    Repair Status: UD    Method: LA  
 Problem: slope

**Comments:**

DS end almost completely submerged, rip rap around DS side of dike. US side water control structure completely filled with debris and mud. Barrier due to slope; debris is impermanent barrier. Managed to provide migratory bird habitat.

**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:** 1310060

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0749445  
Longitude (WGS 84): -122.7266349  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Cross dike Rd

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: SE  
Section: 6  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Ringneck duck SI  
Tributary To: W Branch Shannon  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

In NW quarter of SE quarter section

**Site Comments:**

Nice wetlands US and DS, old water control structure above current one, is partially buried

# WDFW Fish Passage and Diversion Inventory Database

## Level A Culvert Assessment Report

Site ID: **1310060**      Sequencer: **1.1**      Fish Use Potential: **Unk**  
Stream: **Ringneck duck SI**      Tributary To: **W Branch Shannon**      WRIA: **11.0000**  
Latitude: **47.0749445**      Longitude: **-122.7266349**      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/08/2003

### Culvert Description

### Plunge Pool

Shape:	RND	Culvert H2O Depth (m):	0.40	Length (m):
Material:	CST	Velocity (m/sec):		Max Depth (m):
Span (m):	0.65	Apron:	No	OHW Width (m):
Rise (m):	0.65	Tidegate:	No	
Length (m):		FillDepth:	1.00	

### Level A Parameters:

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



### Results:

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

### Comments:

DS end crushed, a piece has been ripped off. US end underwater, measurements are estimates. Couldn't shoot culvert slope. Downstream control inaccessible. Managed to provide migratory bird habitat.

### 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:** 1310061

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0747274  
Longitude (WGS 84): -122.7280263  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Cross dike Rd

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: SE  
Section: 6  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Crow Sl  
Tributary To: W Branch Shannon  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

At junction of Cross Rd dike and Brown Farm dike. In upper NW corner of SE quarter section.

**Site Comments:**

Tide gate to McAllister Cr is off LB approx 5m away from DS end of pipe. Slough runs along the inside of the Brown Farm dike. Lots of crabapple trees along the channel in this section.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: **1310061**      Sequencer: **1.1**      Fish Use Potential: **Unk**  
Stream: **Crow SI**      Tributary To: **W Branch Shannon**      WRIA: **11.0000**  
Latitude: **47.0747274**      Longitude: **-122.7280263**      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/08/2003

Culvert Description		Plunge Pool	
Shape: RND	Culvert H2O Depth (m): 1.30	Length (m):	
Material:	Velocity (m/sec):	Max Depth (m):	
Span (m): 1.30	Apron: DS	OHW Width (m):	
Rise (m): 1.30	Tidegate: No		
Length (m):	FillDepth: 2.50		

#### Level A Parameters:

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



#### Results:

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

#### Comments:

US and DS ends completely submerged. Dimensions are close estimates. Water control structure visible on US side, with metal grating above so we couldn't shoot a slope. No visible wooden planks. Managed to provide migratory bird habitat.

#### 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:** 1310062

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0705279  
Longitude (WGS 84): -122.7277336  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: SE  
Section: 6  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Crow SI  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: No  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

In SW quarter of the SE quarter section. Just off Brown Farm dike.

**Site Comments:**

Drainage ditch to seasonal wetlands- dry, no obvious channel, choked with vegetation.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: <b>1310062</b>	Sequencer: <b>1.1</b>	Fish Use Potential: <b>No</b>
Stream: <b>Unnamed</b>	Tributary To: <b>Crow Sl</b>	WRIA: <b>11.0000</b>
Latitude: <b>47.0705279</b>	Longitude: <b>-122.7277336</b>	PI Total:

Field Review Crew: Lantz, Tschaekofske    Field Review Date: 09/08/2003

Culvert Description		Plunge Pool	
Shape:	RND	Culvert H2O Depth (m):	Length (m):
Material:	PCC	Velocity (m/sec):	Max Depth (m):
Span (m):	0.50	Apron:	No
Rise (m):	0.50	Tidegate:	No
Length (m):		FillDepth:	1.50

**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:**

DS end filled with sediment. 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:** 1310063

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0708352  
Longitude (WGS 84): -122.7261184  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: SE  
Section: 6  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Crow SI  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

In middle of hay fields, and small slough channels. In SW quarter of SE quarter section.

**Site Comments:**

Hay fields all around, currently being cut. Water control structure on US side, no wooden planks currently. Muddy ditch, patches of water.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: <b>1310063</b>	Sequencer: <b>1.1</b>	Fish Use Potential: <b>Unk</b>
Stream: <b>Unnamed</b>	Tributary To: <b>Crow SI</b>	WRIA: <b>11.0000</b>
Latitude: <b>47.0708352</b>	Longitude: <b>-122.7261184</b>	PI Total:

Field Review Crew: Lantz, Tschaekofske    Field Review Date: 09/08/2003

Culvert Description		Plunge Pool	
Shape:	RND	Culvert H2O Depth (m):	0.16
Material:	CST	Velocity (m/sec):	
Span (m):	0.65	Apron:	No
Rise (m):	0.65	Tidegate:	No
Length (m):	6.53	FillDepth:	0.20
		Length (m):	
		Max Depth (m):	
		OHW Width (m):	

**Level A Parameters:**

Bed Material Present:	Yes
Outfall Drop (m):	0.00
Culvert Slope (%):	0.31
Ave. Bed Width (m):	
Culvert/Stream Width Ratio:	



**Results:**

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

**Comments:**

Downstream control inaccessible, so barrier status is unknown. 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:** 1310064

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.0932601  
Longitude (WGS 84): -122.7215884  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: NE  
Section: 31  
Township: 19N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Tule goose SI  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

Just inside Brown Farm dike- in SE quarter of NE quarter section.

**Site Comments:**

Slough DS, seasonal wetland US.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: **1310064**      Sequencer: **1.1**      Fish Use Potential: **Unk**  
Stream: **Unnamed**      Tributary To: **Tule goose SI**      WRIA: **11.0000**  
Latitude: **47.0932601**      Longitude: **-122.7215884**      PI Total:

Field Review Crew: Lantz, Tschaekofske      Field Review Date: 09/08/2003

#### Culvert Description

Culvert Description		Plunge Pool			
Shape:	RND	Culvert H2O Depth (m):	0.10	Length (m):	
Material:	CST	Velocity (m/sec):		Max Depth (m):	
Span (m):	0.65	Apron:	DS	OHW Width (m):	
Rise (m):	0.65	Tidegate:	No		
Length (m):	5.80	FillDepth:	0.60		

#### Level A Parameters:

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



#### Results:

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

#### Comments:

DS apron 1m long. US end crushed, so we couldn't shoot slope. No downstream control accessible. Managed to provide migratory bird habitat.

#### 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:** 1310065

**Reported By:** USFWS

**Project:** FPGRANT

**Geographic Coordinates**

Latitude (WGS 84): 47.07166  
Longitude (WGS 84): -122.71238  
East (NAD 27):  
North (NAD 27):

**Owner**

Name: Nisqually NWR  
Type: Federal

**Evaluation Level Completed**

Report Logged  
Field Review

**General Location**

Road Name: Unnamed

Mile Post:  
County: Thurston  
WDFW Region:  
1/4 Section: SW  
Section: 5  
Township: 18N  
Range: 01E

**Associated Features**

Culvert

**Waterbody**

Stream: Unnamed  
Tributary To: Redtail Hawk Sl  
WRIA: 11.0000  
River Mile:  
Fish Use Potential: Unk  
FUP Criteria: Physical

**Species Potential**

**Location/Directions:**

On gravel drive- In NE quarter of SW quarter section.

**Site Comments:**

Mostly willows and cottonwoods, some bigleaf maple in narrow riparian strip. Seasonal wetlands US and DS.

## WDFW Fish Passage and Diversion Inventory Database

### Level A Culvert Assessment Report

Site ID: <b>1310065</b>	Sequencer: <b>1.1</b>	Fish Use Potential: <b>Unk</b>
Stream: <b>Unnamed</b>	Tributary To: <b>Redtail Hawk SI</b>	WRIA: <b>11.0000</b>
Latitude: <b>47.07166</b>	Longitude: <b>-122.71238</b>	PI Total:

Field Review Crew: Lantz, Tschaekofske    Field Review Date: 09/08/2003

Culvert Description		Plunge Pool	
Shape:	RND	Culvert H2O Depth (m):	0.00
Material:	CST	Velocity (m/sec):	
Span (m):	0.65	Apron:	BE
Rise (m):	0.65	Tidegate:	No
Length (m):	16.49	FillDepth:	0.75
		Length (m):	
		Max Depth (m):	
		OHW Width (m):	

**Level A Parameters:**

Bed Material Present:	Yes
Outfall Drop (m):	0.00
Culvert Slope (%):	0.85
Ave. Bed Width (m):	
Culvert/Stream Width Ratio:	



**Results:**

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

**Comments:**

Aprons 1.2m long each. No downstream control accessible, so barrier status is unknown. 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:** 1310066

**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**

Fishway

**Waterbody**

Stream: N/A  
Tributary To: Quinault R 21.0398  
WRIA: 21.0429  
River Mile: 4.50  
Fish Use Potential: No  
FUP Criteria: Other

**Species Potential**

**Location/Directions:**

Fish ladder on RB side of electric weir for hatchery.

**Site Comments:**

Rip rapped banks downstream of electric weir. Fish ladder is on far RB, next to the electrified bypass for the hatchery. Fish are not intended to be passed upstream from this ladder- it is only for hatchery purposes.

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

Site ID: **1310066** Fish Use Potential: **No**  
Stream: **N/A** 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

**General Description:**

Fishway Type: WP Construction Year: 1968 Attached To: Dam  
Fish ladder runs straight up into the hatchery holding pens. The electrified bypass is connected to the electric fish weir, so this could be potentially used to allow fish upstream.

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

No. of Pools: 10 Number of Weirs: 9 Weir Type: Concrete  
Entrance Pool Depth (m): 1.5 Pool Head Difference (m): .30

**Streambed Elevation Controls:**

Control Location: Number of Controls: Control Type:

**Culvert or Flume Components:**

**Comments:**

The weir is not a physical barrier, so a fish ladder is not necessary. Currently both the weir and bypass are electrified year round.

**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:** 1310067

**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

**Associated Features**

Fishway

**Waterbody**

Stream: N/A  
Tributary To: Hood Canal  
WRIA: 17.0012  
River Mile:  
Fish Use Potential: No  
FUP Criteria: Other

**Species Potential**

**Location/Directions:**

At the Quilcene NFH, fish ladder runs between the electric weir and the Penny Cr culvert outlet.

**Site Comments:**

Fish ladder only intended to bring fish up into the hatchery facility, it does not pass fish above the weir back into the river. The Penny Cr water is what the hatchery fish are imprinted on.

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

Site ID: **1310067** Fish Use Potential: **No**  
 Stream: **N/A** Tributary To: **Hood Canal** WRIA: **17.0012**  
 Latitude: **47.81035** Longitude: **-122.91294** PI Total:  
 Field Review Crew: Lantz, Tschaekofske Field Review Date: 08/20/2003

**General Description:**

Fishway Type: WP Construction Year: 1911 Attached To: Dam  
 Below fish ladder, overflow from Penny Cr culvert flows next to ladder, and comes out at the base of the ladder. There is an ancillary fish ladder attached to the electric weir that is currently not in use. This ladder is only for hatchery purposes.

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

No. of Pools: 12 Number of Weirs: 11 Weir Type: Concrete  
 Entrance Pool Depth (m): 1.7 Pool Head Difference (m): .35

**Streambed Elevation Controls:**

Control Location: Number of Controls: Control Type:

**Culvert or Flume Components:**

**Comments:**

Any adult fish passed from the hatchery fish ladder have to be taken by hand back to the Quilcene R once quotas are met.



**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:** 1310068

**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**

Fishway

**Waterbody**

Stream: N/A  
Tributary To: Pacific Ocean  
WRIA: 20.0015  
River Mile: 3.00  
Fish Use Potential: No  
FUP Criteria: Other

**Species Potential**

**Location/Directions:**

At Makah hatchery- on LB side of electric weir.

**Site Comments:**

Directs adult salmonids up into the hatchery for processing. Modified vertical slot weirs have notches at top and base of weirs to allow fish passage. Not intended to pass juvenile fish. Only here for hatchery purposes

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

Site ID: **1310068** Fish Use Potential: **No**  
 Stream: **N/A** 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

**General Description:**

Fishway Type: VS Construction Year: 1982 Attached To: Dam  
 T junction at top of fish ladder directs adults into the hatchery, or back out into the Sooes R when quotas are met.

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

No. of Pools: 23 Number of Weirs: 22 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:**

Electric weir next to fish ladder is a physical barrier at low tide, as well as when it is electrified. Otherwise fish can pass freely at higher tides.



**Potential Habitat Gain:**

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

## Abbreviations:

Material	Material	Specify the material of which the culvert is constructed using one of the following codes; <b>PCC</b> = precast concrete, <b>CPC</b> = cast in place concrete, <b>CST</b> = corrugated steel, <b>SST</b> = smooth steel, <b>CAL</b> = corrugated aluminum, <b>SPS</b> = structural plate steel, <b>SPA</b> = structural plate aluminum, <b>PVC</b> = plastic, <b>TMB</b> = timber, <b>MRY</b> = masonry, <b>OTH</b> = other.
Span/Diameter	Span	The horizontal dimension of the culvert. Expressed in meters to the nearest 0.01. Used in conjunction with Average Streambed Width to calculate Culvert Span to Streambed Width Ratio.
Rise	Rise	The vertical dimension of the culvert. Expressed in meters to the nearest 0.01. For round culverts, this value will be the same as the span.
Culvert Water Depth	WDIC	Depth of water inside the culvert, measured at the downstream end away from the influence of outlet conditions. Expressed in meters to the nearest 0.01.
Outfall Drop	OutfallDrp	Distance from the water surface at the downstream end of the culvert to the water surface of the plunge pool. Expressed in meters to the nearest 0.01.
Length	Length	The length of the culvert measured to the nearest meters to the nearest 0.1. Include aprons if present.
Culvert Slope	CulvSlope	Slope of the culvert, reported in percent (e.g. 4.3). May be positive or negative number. <i>Must be accurate to within 0.5%</i> . May be shot directly with laser or derived from invert elevations and culvert length.
Bed Material Present	BedMat	Indicates whether the culvert is countersunk in the streambed through the presence of streambed material <i>throughout</i> the length of the culvert. Values are <b>Yes</b> or <b>No</b> .
Velocity	Velocity	Water Velocity Inside Culvert. Field estimate of water velocity through the culvert in meters per second. Use flow meter or 3 chip method.
Apron	Apron	Indicates presence and location of an apron. Values are; <b>No</b> = none, <b>US</b> = upstream, <b>DS</b> = downstream, <b>BE</b> = both ends.
Tidegate	Tidegate	Indicates presence of a tidegate. Values are <b>Yes</b> or <b>No</b> .
Fill Depth	FillDepth	Depth of road fill over culvert. Measured in meters to nearest 0.1.
Plunge Pool Length	PPLength	Distance from the outlet of the culvert to the downstream control. Measured in meters to the nearest 0.01.
Plunge Pool Maximum Depth	PPMaxDepth	Maximum depth of plunge pool. Expressed in meters to the nearest 0.01. Informational.
Plunge Pool OHW Width	PPOHWidth	Width of the plunge pool at its widest point measured at Ordinary High Water. Expressed in meters to the nearest 0.1. Informational.
Average Stream Width	AvBedWidth	The average width of the streambed. Measured at the second riffle downstream of the culvert. Used in conjunction with culvert span to calculate Culvert Span to Streambed Width Ratio.
Culvert Span / Stream Width Ratio	CulToeRa	The ratio of culvert width (span or diameter) to streambed width. Derived by dividing culvert span by average streambed width. Expressed as a decimal fraction between 0 and 1.
Barrier	Barrier	Results of the Level A or B fish passage assessment. Values are; <b>Yes</b> = culvert is a barrier; <b>No</b> = culvert is not a barrier; <b>Unk</b> (unknown) = Level B analysis not applicable or Level B analysis required but not completed. If the culvert is on a stream with no fish use potential the field is left blank as no fish passage assessment would have been conducted.
Method	Method	Assessment method used to determine barrier status above. Values are <b>LA</b> = Level A, <b>LB</b> = Level B, <b>LBNA</b> = Level B not applicable, <b>LBRQ</b> = Level B Required but not completed, and <b>OT</b> = Other.

Passability	FishPass	Percent passability based on field crews professional judgment. Values are <b>0, 33, 67, or 100</b> . This value is used in the PI model to derive B (proportion of fish passage improvement). Make sure values in the Passability and Barrier fields are consistent. Leave blank if no fish use potential. For non-WDFW crews the passability for barrier culverts is assumed to be 0.33 unless the individuals making the assessment have an advanced level of expertise.
Repair Status	RepairStatus	Indicates the need for barrier repair. If the culvert is not a barrier, enter <b>OK</b> . If the threshold determination (TD) reveals less than 200 meters of habitat gain, enter <b>NG</b> (no gain). If habitat gain is greater than 200 meters enter <b>RR</b> (repair required). If a TD has not been made enter <b>UD</b> (undetermined). If the stream does not have fish use potential the field is left blank
Problem	Problem	Factor that determined barrier status. Applies only to barrier culverts. Entries include <b>Outfall Drop, Slope, Velocity, and Depth</b> . Enter outfall drop if the measured outfall drop is > 0.24m or enter slope if the slope is > 1%(analysis Level A). The results of the hydraulic analysis (Level B) will indicate either water depth or velocity. Enter all that apply, separate each entry with a semicolon.
Comments	FcComments	Concise (254 character limit) description of culvert problem and explanation of any attribute where OTHER was selected.