



# Forest Road Condition Surveys – SE AK and Kenai Peninsula Borough

AK Fish Passage Meeting, October 13, 2015

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# RCS and FRPA Applicability

- Effectiveness of FRPA as it applies to WQ and fish passage on non-Federal forest roads.
- Notification (DPO) Process for the Forest Practices and applicability (agency reviews)
- FRPA inspections and monitoring
- BMPS examined: road construction, structure installation, harvest, reforestation
- BMP implementation - focus on fish passage

# RCS Projects in Alaska

- 1. 2003 – 2009; SE AK (829/3230 miles)
- 2. 2011 – 2014; Kenai Peninsula Borough (432/619)
  - <http://forestry.alaska.gov/forestpractices>
- 3. 2015; Mat-Su Borough (14 miles), Haines State Forest (30 miles)

# Procedures

- Crew – DNR-DOF, ADFG-Habitat
- Culverts; XD or live channels – BMP ratings.
- Surveys for stream classification (ADFG)
- Detailed measurements for culverts requiring fish passage
- Bridges; condition and BMP rating.
- Road segment; BMP ratings, reforestation.

- **Fish Passage Rating.** 1-4 (4 as High) to determine the effectiveness.
  - **Rating of 1.** Non-functioning culvert
  - **Rating of 2.** Multiple impediments (gradient, plugging, perch height, sizing or culvert condition.)
  - **Rating of 3.** A single issue affecting fish passage.
  - **Rating of 4.** Fully functional.
  - Relation to Red/Green/Grey
- **Culvert BMP rating.**
  - **Rating of 1.** No attempt to implement or maintain effectiveness.
  - **Rating of 2.** BMP was somewhat implemented and/or maintained.
  - **Rating of 3.** A single issue may reduce full effectiveness.
  - **Rating of 4.** BMP was fully implemented.

# Rating Culvert BMP's

Culvert size capable of passing 25 year flood:

Culvert entrance and exit match natural course of stream channel:

Culvert is not perched on fish bearing waters:

Culvert terminates on material not readily erodible:

Culvert cleared of mobile slash or debris from inlet to 50' upstream:

Adequate and appropriate catch basins and headwalls:

Culvert proper length to prevent blocking:

# Rating Bridge BMP's

Install required relief culvert on approaches:		
One end of log bridge anchored:		
Earth embankment protected from erosion:		
Curbs and filter fabric installed on rock decked bridge:		
Minimize disturbance to bed and bank of stream:		
Does not encroach on anadromous stream:		



*Pacific Ocean*

**Distribution of Non-Federal Forest Roads in  
Southeast Alaska  
October 2015**

**Legend**

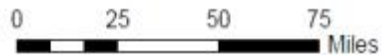
— Non-Federal Forest Roads

□ State Forest Boundary



DNR-DOF, 10/1/15

1 in = 1,800,000 inches







# Survey, November 2011 - August 2014



Tyonek RCS, August 2012.

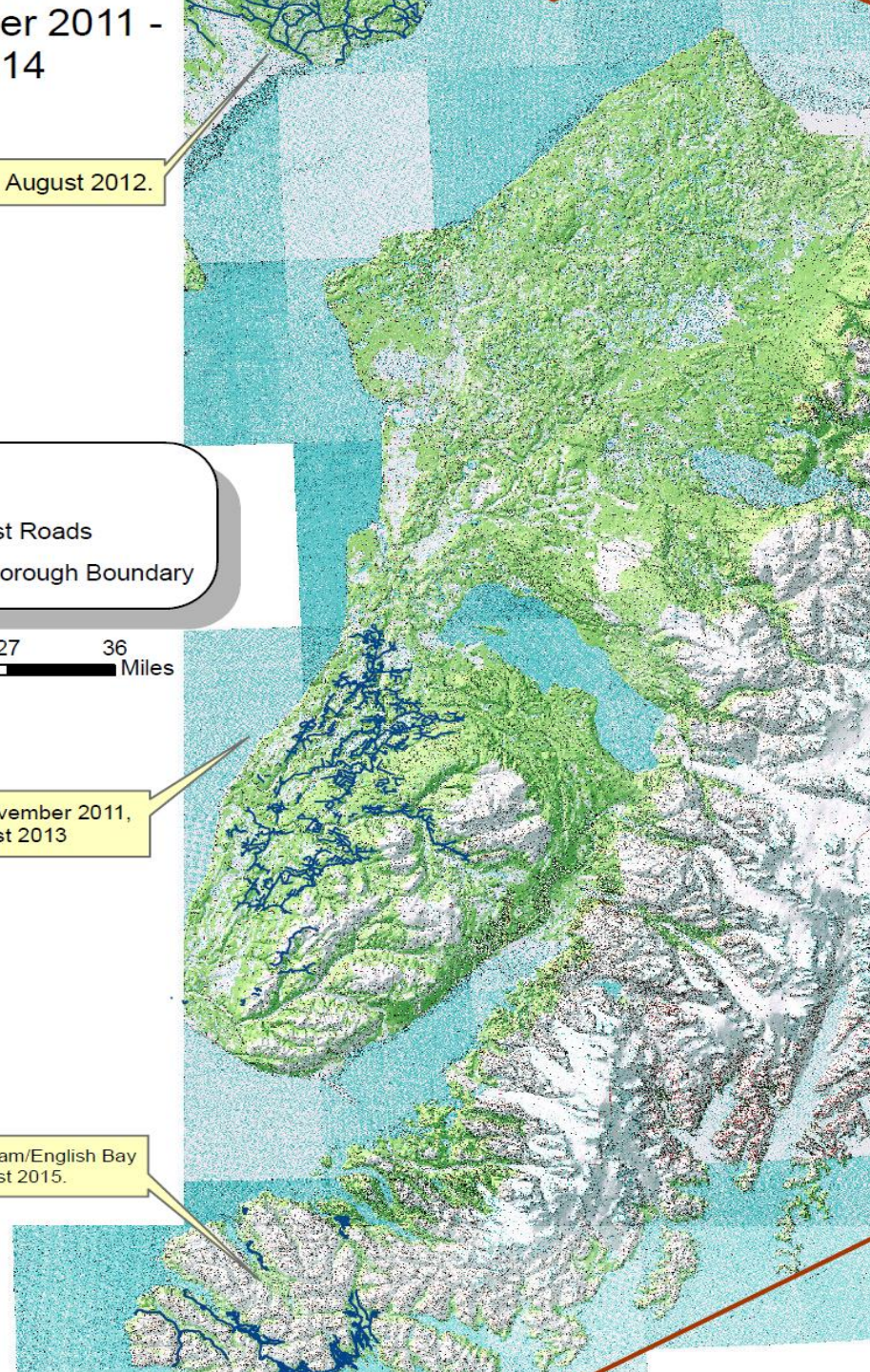
## Legend

-  Non-Federal Forest Roads
-  Kenai Peninsula Borough Boundary

0 4.5 9 18 27 36 Miles

Kenai Peninsula RCS, November 2011,  
June 2012 & August 2013

Seldovia/Port Graham/English Bay  
RCS, August 2015.



# Fish Culverts Surveyed on SE AK roads (2003-2009)

DNR/ADFG Road Condition Surveys on Non-Federal Forest Roads			
Fish Culverts Found on Closed and Inactive Roads			
		2004- 2009	
		Surveys	
Total # of fish culverts located and surveyed:		109	
RATINGS:			
Total # fish culverts with a rating of 4:		59	54%
Total # fish culverts with a rating of 3:		30	28%
Total # fish culverts with a rating of 2:		12	11%
Total # fish culverts with a rating of 1:		8	7%
		109	100% Total Culverts Surveyed
Total # of fish culverts found on Private Land:		101	
Total # of fish culverts found on Public Land:		8	
		109	Total Culverts Surveyed
Total number of culverts found on Resident Fish Streams:		69	
Total number of culverts found on Anadromous Fish Streams:		40	
		109	Total Culverts Surveyed
Non Federal forest road statistics for Southeast Alaska (Dixon Entrance to Cape Suckling)			
Total number of miles surveyed:		829	
Total operational road miles in the SE AK RCS:		1891	
Total non-federal forest road system constructed mileage (includes closed road systems):		3230	

# Fish Culverts Surveyed on KPB Forest Roads (2011-2014)

Tyonek RCS - FRPA Region II	Kenai Peninsula - FRPA Region II	Seldovia-Pt. Graham- English Bay - FRPA Region I	Culvert total by rating	Rating Percentage
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**RATINGS:**

Total # fish culverts with a rating of 4:  
 Total # fish culverts with a rating of 3:  
 Total # fish culverts with a rating of 2:  
 Total # fish culverts with a rating of 1:

5	6	4	15	31%
1	5	1	7	15%
6	5	8	19	40%
4	0	3	7	15%

<b>16</b>	<b>16</b>	<b>16</b>	<b>48</b>	<b>100%</b>	<b>Total Culverts Surveyed</b>
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Total number of culverts found on Resident Fish Streams:  
 Total number of culverts found on Anadromous Fish Streams:  
 Total number of culverts found where fish habitat is unknown:

3	0	9		25%
13	15	7		73%
0	1	0		2%

<b>16</b>	<b>16</b>	<b>16</b>			<b>Total Culverts Surveyed</b>
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Number of fish culverts surveyed on Private land:  
 Number of fish culverts surveyed on State land:  
 Number of fish culverts surveyed on Mental Health Trust land:  
 Number of fish culverts surveyed on Municipal land:  
 Number of fish culverts surveyed on University land:  
 Number of fish culverts surveyed on Native allotment land:

37
7
2
1
0
1

**48**

Total number of miles surveyed:

432.24

Estimated road mileage total on the KPB forest road system (includes Closed roads but not winter trails):

619.19

## What's the Plan Now for Low Rated Fish Culverts and Bridges?

- Inform land owners
- Forest Stewardship plan
- Other stakeholders – Watershed group, local conservation district.
- Funding sources – NRCS, USFWS, BIA, SSF
- Put roads to bed?

# ADFG – Fish Resource Monitor Website



# Crossing Structure Interface from ADFG Fish Resource Monitor Internal Site

Culvert Surveys
☰

Road Condition Surveys
New Survey
Delete
Previous
Next
Print
Close

Filters-> Project: KEN03 Survey: 01A044 Site:

Project Code: KEN03

Survey: 01A044

Survey Date: 06/18/2013

Crew Leader: Hans Rinke

Observer 2:

Observer 1: Patti Berkahn

Observer 3:

Site Info
Crossings
Road BMP
Features
Photos/Files
Fish Obs
AWC Nominations

Stream Stage:

Dominant Substrate Type:

Sub Dom Substrate Type:

Stream Slope (%):

Crossing ID: 1 Count: 2

Mean OHW Width (ft): 3

Upstream:

Downstream:

Add Crossing Remove Crossing

Pipe ID: 1

Forest Practice Condition Rating (1-4): 2

Bridge

Culvert

Delete

Length(ft): 35.7

Cross Drain:

Inlet:

Outlet:

BMP Culvert

Structure Type: Circular pipe

Width (ft): 2

Height (ft): 2

Culvert size capable of passing 25 year flood: 3

Structure Material: Corrugated Metal

RustlineHt. (ft):

Culvert entrance and exit match natural course of stream: 3

Inlet Substrate:

Water Depth (ft):

Culvert is not perched on fish bearing waters: 1

Outlet Substrate:

Substrate Dep (ft):

Culvert terminates on material not readily erodible: 4

Sedimentation at Inlet:

Blockage(%):

Culvert cleared of mobile slash or debris from inlet to 50': 4

Baffles:

Outfall Type:

Adequate and appropriate catch basins and headwalls: N/A

Failure Mechanism(s)
 

1. Inlet perch
2. Outfall height red
3. Culvert gradient red
4.

Outfall Height (ft): 2

Average % Slope: 3.22

Max % Slope:

Backwatered:

Culvert proper length to prevent blocking: 4

Comments
 

This is tributary to AWC. No fish found. Should be re trapped.

Embedded:  (ft)

Record: 14
21 of 67
Filtered
Search

## Future Plans

- Applied for SSF grant for culvert repair – Tyonek
- Budget hits – SOA/DNR
- Search for new funding sources
- Mat Su/Haines State Forest
- Follow up repair on low rated culvert and bridge backlog.
- Plan for future RCS on Kodiak and Afognak Island