Citizen Road Condition Survey and Monitoring Project

2010 Accomplishment Report

Olympic Forest Coalition
in collaboration with
Olympic National Forest
and
Great Old Broads for Wilderness Polly Dyer/Cascadia Broadband

Prepared by Shelley Spalding
January 2011

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Introduction

According to the Olympic National Forest, watershed restoration is the primary land management strategy in the forest at this time. Different components of the Northwest Forest Plan identify the importance of "watershed restoration [that is] designed to address past disturbances by treating roads (decommissioning, upgrading, modifying, etc)." This work has been severely underfunded, resulting in a huge road maintenance backlog. In 2008 Congress created Legacy Roads, a dedicated fund to help address the Forest Service's neglected road system while undertaking watershed restoration.

Monitoring and surveying road conditions on the ground is essential for identifying and prioritizing needed road treatments. Although the Olympic National Forest (ONF) has treated many miles of road to reduce or eliminated their contribution to degraded aquatic conditions, the parts of the extensive road system that cannot be reached by automobile are still under-monitored.

The Olympic Forest Coalition (OFCO) developed and implemented the Citizen Road Surveying and Monitoring Project as a viable way to collect information on these roads. In addition, this project presented an excellent opportunity to educate citizens about road conditions and land management practices that have the potential to harm or degrade aquatic systems, as well as ways to work to eliminate these risks.

Hikers and conservationists from the local chapter of Great Old Broads for Wilderness (the Polly Dyer/Cascadia Broadband) participated as volunteer road surveyors for this project. OFCO provided the volunteers with training in using GPS, compass, and data forms; and the Broads provided the boots on the ground. OFCO lead for this program, Shelley Spalding, is a retired U.S. Fish and Wildlife Service fish biologist with knowledge of the relationship between land management activities and habitat requirements of salmonids.

Project Location

All road surveys were conducted in the South Fork Skokomish watershed on Forest Service land. This watershed is located in Mason County and Grays Harbor County, in Washington.

Background

OFCO selected the South Fork Skokomish watershed as the pilot watershed for our road survey and monitoring project. The SF Skokomish had one of the highest road densities on the forest, at roughly 3.6 miles per square mile in 1996, with seven of the thirteen sub-watersheds having densities over 4.0 miles per square mile (Stoddard 2004). Major flood events since the early 1990's have resulted in extensive damage to streams as a result of numerous road-stream crossing and fill-slope failures. Extensive clearcut logging since the 1920's has led to a severely aggraded streambed and chronic flooding along the lower river floodplain, impacting private residences and the Skokomish Tribe. Historically the Skokomish River had the most significant salmon and steelhead runs in Hood Canal. Now many of those stocks have been listed as threatened or endangered under the Endangered Species Act.

Although the Olympic National Forest, beginning in 1991, completed numerous road-related restoration projects in the SF Skokomish, substantial funding for this type of work was not available until Fiscal Year 2008, when Congress authorized the Legacy Roads and Trails Program and allocated the US Forest Service (USFS) $40 million to begin its implementation. This program is intended to reduce road and trail impacts to watersheds and aquatic ecosystems by decommissioning unneeded roads, removing fish passage barriers, and addressing critical repair and maintenance needs. The initial focus by the ONF for watershed trail and road remediation projects has been in the South Fork Skokomish River.

The Skokomish watershed is unique in that there is an active partnership of federal state, county, local and tribal governments, land managers, conservation and non-profit groups, and watershed residents. This group, the Skokomish Watershed Action Team (SWAT) developed a plan targeting watershed restoration primarily through the decommissioning and stabilization of roads and trails. OFCO's Citizen Road Survey and Monitoring Project compliments the SWAT's restoration work by targeting the SF Skokomish for surveys. We have worked closely with the Olympic National Forest while developing this project and have had numerous meetings with the forest hydrologist to target and prioritize road survey sites. It is anticipated that the information gathered by the project will assist the ONF and other agencies when making decisions that could affect the aquatic health of Olympic Peninsula rivers.

Methods

The focus for OFCO's SF Skokomish road surveys in 2010 was to gather data on specific problems and risks associated with non-system Forest Service roads, which had been identified as an important information gap in the SF Skokomish watershed. Non-system roads are often roads that were officially decommissioned by the agency in the past and are now absent from the Forest Service transportation database/GIS layer. Because roads decommissioned in the 1990's were not decommissioned to the standards used today, these roads may be in various states of neglect, and the decommissioning may not have been successful in reducing sediment delivery to streams.

Several attributes were used by OFCO to develop a strategic approach to citizen monitoring and surveying, including road position (i.e., road proximity to a stream), number of stream crossings,

aquatic species at risk, Forest Service inventory, and subwatershed health. Mike Haggerty, fisheries hydrologist, provided an analysis of the non-system Forest Service roads within the SF Skokomish River watershed based on these attributes. The objective of the analysis was to provide a detailed list of Forest Service roads that have been decommissioned or are absent from the Forest Service transportation database.

The following methods for the analysis are described in Mike Haggerty's February 12, 2010 Memorandum to OFCO:

> ArcMap was used to delineate potential non-system roads within Forest Service ownership in the S.F. Skokomish River Watershed. The first step consisted of clipping the WDNR transportation GIS layer to the watershed boundary. The watershed boundary used for clipping was the USDA-FS Regional 5th Field HUC (downloaded from-http://www.fs.fed.us/r6/data-library/gis/olympic/index.html). This new road layer was then compared to the USDA-FS road layer. Where the USDA-FS road layer and the WDNR transportation layer both depicted a road, the road segment was deleted. The deletion of duplicate roads was completed for the entire watershed. Roads on private and state ownership were also deleted. The resulting layer was the base for defining the potential non-system roads layer.
>
> The existence of each potential non-system road segment was then verified using the 2006 USDA orthophotos. Where roads were evident on the orthophotos but absent from the WDNR transportation layer, the road on the photo was digitized. Additional data collection and road classification was done using the USDA-FS hydrography data, USGS topography, and the 2006 USDA orthophotos. Road attribute data includes: length (miles), road source (either WDNR or orthophotos), road position (e.g., mid-slope), road ID, number of stream crossings, USDA-FS status, and notes.
>
> A total of 123.6 miles of roads are contained within the potential non-system road layer that was created (Figure 1). Just over 66-percent of these roads were classified as decommissioned based on the USDA-FS road status classification. Approximately 17 percent were classified as absent based on road status classification. Approximately 20% of potential non-system roads were prioritized for field review based on slope position, proximity to streams, number of stream crossings, and USDA-FS status classification.

Following this analysis, the OFCO project lead met several times with the ONF hydrologist, Robin Stoddard, to further identify and prioritize roads for the 2010 citizen surveys. The meetings provided critically important information on recent road treatments as well as expected future road decommissionings and conversions of roads to trails. Following these meetings OFCO and ONF identified five road segments as priority for field surveys.

In the summer of 2010, OFCO and the Washington chapter of Great Old Broads for Wilderness (the Polly Dyer Cascadia Broadband) teamed up to conduct the walking surveys of non-system Forest Service roads identified in Table 1. OFCO trained nearly a dozen volunteers from the Broadband, as well as two interns from The Evergreen State College, in data collection, GPS use, map and compass reading, and identification of features such as landslides and tension cracks that can contribute sediment to streams, thus posing risks to water quality and threatened

or endangered fish. See Appendix A for Survey Protocol and data sheets. FS 2356000 was used for volunteers to learn the survey and data collection methodology.

Figure 1. Overview map of potential non-system roads in the S.F. Skokomish River Watershed (Haggerty 2010).

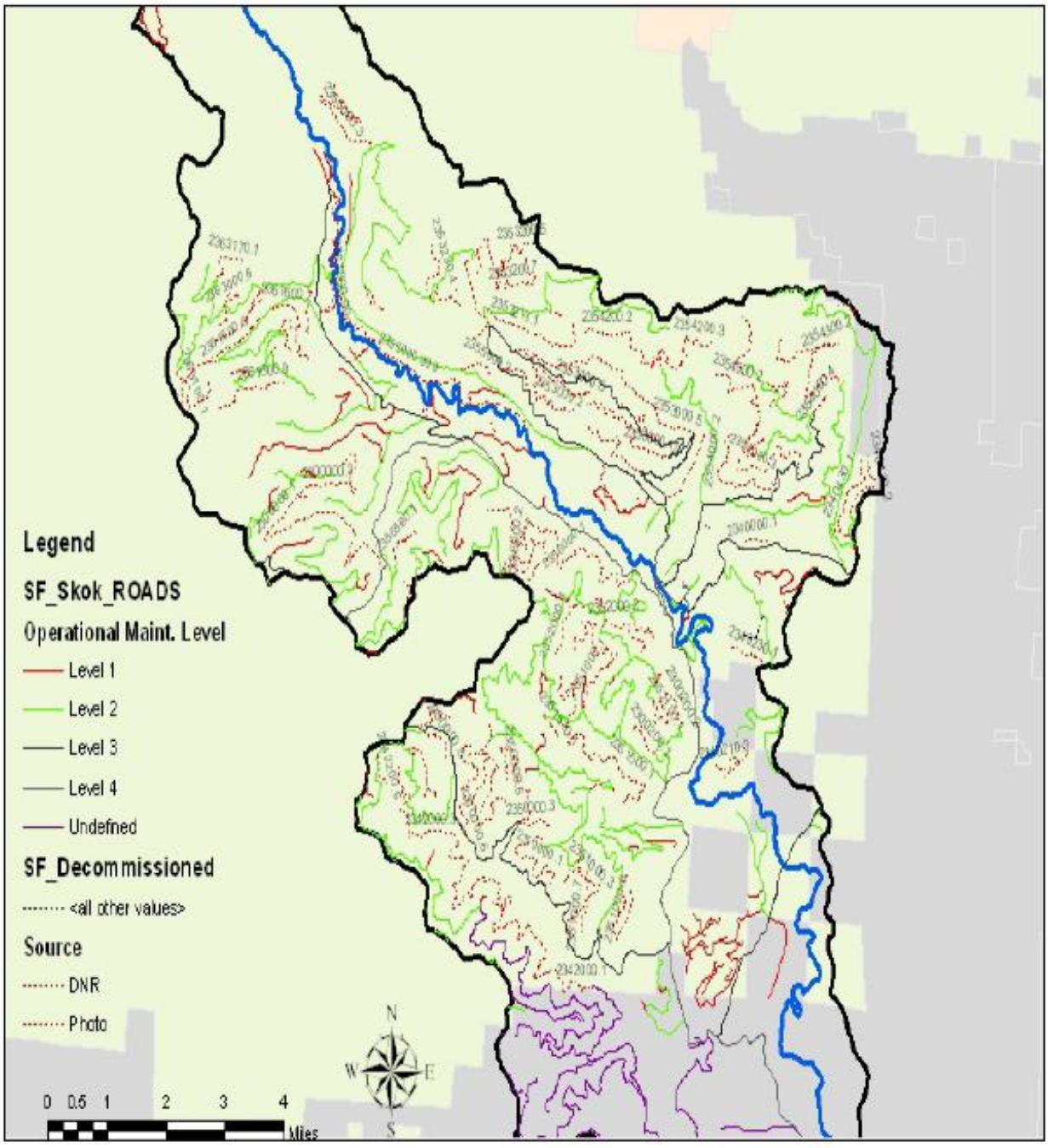


Table 1. Non-system roads prioritized for field surveys based on slope position, proximity to streams, and number of stream crossings (from Haggerty 2010), and current Forest Service planning status. Following this review, road segments in **bold** were prioritized for 2010 surveys. MS = Mid Slope. SAR = Stream Adjacent Road

Road Segment ID	History	Road Position	Length	Number of Stream Crossings	Stream Crossings per Mile	Survey Planning Notes	Sub-basin
2300200.2		MS	0.57	4	7.0	NEPA Done 011510 decomm (pull pipes) approved in Legacy Road package	SF Skokomish (lower)
2342000.2	Older decommission	MS	2.24	12	5.4	Does not appear to intersect a major drainage, next drainage north appears to be larger, but is very steep. Would need to access from 2343 between mp 8 and 9.5. To access Fig. 3 drop down from 23243 between mp 6 and 7.7	Vance Creek
2342000.5 2342000.6	Older decommission	SAR SAR	0.32 0.30	2 0	6.3 0.0	Access would be 2350 to MP 7.7 Go L on to 2342 for 1.7 miles drop down to east and proceed north up road/drainage – parallels Vance Creek	Vance Creek
2350000.4 2350000.5	Older decommission	SAR SAR	0.74 1.17	6 7	8.1 6.0	2350 to MP 5.5. At curve in the road to east then north	Vance Creek
235100.10	Older decommission	MS	2.70	14	5.2	23 road to MP 7, go L to 2351 (west) and proceed 2 miles (NW) to junction with 600 spur road, it is the road to the east but parallel to 600	Flat Creek
2353000.5	Older decommission	MS	3.50	23	6.6	Lots of stream crossings. Decommissioned and converted to a trail but has some unstable portions. It is part NEPA 011510, and stream crossing will be stabilized. Did not funded through Legacy R & T	LeBar Creek
2353140.20		MS	0.30	1	3.4	Access from 23 at MP 9.5 to 2353. Take left onto 140 and park at mp 0.5 at failure. This is in NEPA 011510 as a trail conversion. Is approved for planning in this fiscal year and awaiting funding for trail next year. There is a spur at the north end of 140 about 1 mile from where the 140 begins. This could also be surveyed. Park near junction of 2353 and 140.	SF Skokomish
2354000.2 2354000.3 (Robin – check James notes to see if	Older decommission	MS	2.01 1.90	11 7	5.5 3.7	Failure at 2354000.2 right at junction with 2354 from 2007 storm. Level 1 closure from MP 2.9 to 6.5 on 2354. 500 from 0.0 to 1.6 is closed. The 2354000.2	LeBar Creek Brown Creek

stream crossings pulled)						and .3 were previously decommissioned. Debris flow from 500 road could have gone through the formerly decomm. 2354000.3. Since then have reconstructed the stream crossing below the debris flow initiation point. This summer 2354 between mp 1.5 and 2.5 there are deep water bars and from 1.5 to 3 will be closed this summer	
234200.10	Decommissioned in ~2003	MS	0.31	2	6.4	Channel has been reworked	SF Skokomish (upper)
2355000.30	Older decommission	MS	2.60	2	0.8	Previously decommissioned. Is used to access Wonder Mountain Wilderness. Check to see if pipes removed. 2353 to MP 3.3 take 2355 to MP 6.7. Steep terrain	Steel Creek
2356000.10	Older decommission	MS	2.92	13	4.5	2356000 was previously decommissioned. 2356100 is going to be decommissioned and contract awarded this year. Flatter ground. Go 23 to MP 10.4 drive 0.2. to berm. Go to two stream crossings 1+ mile	SF Skokomish (middle)
23456100.10		MS	0.53	4	7.6	Won't have access once 2356100 is decommissioned. Could walk this year. Contracted will be awarded this year and work could begin this summer. Has been reconned.	SF Skokomish (middle)
2361600.2		MS	1.29	4	3.1	Will be reconned this summer for decommission treatments– 2009 NEPA DM	SF Skokomish (upper)
2363000.30	Older decommission	MS	0.70	4	5.7	Included in Church Creek stewardship partial fill removal to be completed. Been reconned and will be treated this year	Church Creek

Training volunteers from the Broadband, as well as two interns from The Evergreen State College, in data collection, GPS use, map and compass reading, and identification of landslide features.

Results

234200.5 (Figure 2, Appendix B)

Volunteers were unable to locate one road, 234200.5 (Figure 2). Bridge reconstruction later in the summer prevented another team of volunteers from attempting to locate the road. Volunteers described the area where the road should have been located according to their map as "just dropping off to the creek below."

2350000.4 (Figure 3, Appendix B)

The berm at the beginning of the road was grown over with vegetation and there was no indication of recent use of the non-system road. At the beginning of the road there was a large cutbank indicating a slope failure that had completely washed away the road bed. The road ran adjacent to the creek and as it got closer to the creek it completely disappeared. It appeared to have been washed away by the creek sometime in the past and there was little current evidence of sediment from the historic washout.

2353140.2 (Figure 4, Appendix B)

The FS 2353000 road was closed about a mile before the junction with the 2353140 road. The 2353140 began as an obvious road bed with numerous young alders growing in it. After about 0.5 miles, the road disappeared at a point where it would have dropped down to a creek. Surveyors continued looking for the road along the creek until they reached a steep waterfall and steep slope. When returning along the creek the surveyors noted evidence of extreme high flows with gravel deposited well above the creek bed.

Road 2355000.3 (Figure 5, Appendix B)

This abandoned road is used by hikers to access the Wonder Mountain Wilderness.

Numerous washed-out or otherwise non-functional culverts were located on this road. At one site there were three culverts that intersected with the main creek and a fourth culvert that paralleled the creek, resulting in active erosion in some areas.

Although there was a small creeklet flowing through this culvert and no active erosion, the downhill section of the culvert was separated from the road portion by a three foot gap.

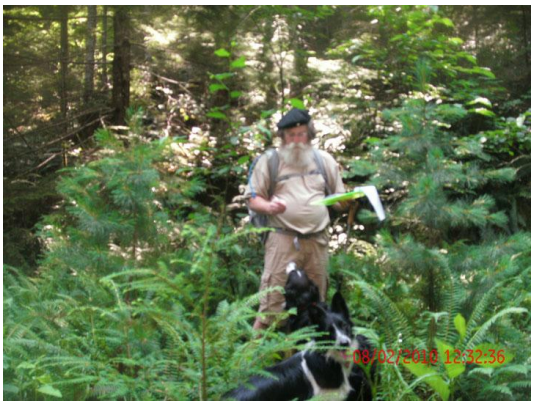
At several locations on this road there was evidence of road sidecast failure or tension cracks.

Seasonally water runs down the road for about 200 yards. The water eventually runs over the edge of the road. Another example of active erosion on this road.

End of the road and end of the survey, with the Wonder Mountain Wilderness in the background

Road 2356000.10 (Figure 6, Appendix B

There was a campfire ring located at the junction of the 2356000 and the 2356100, but the berm at the beginning of this road was well concealed by the vegetation that had grown up over nearly 20 years – mostly young alders and sword ferns. There was no sign of any kind of human use of the decommissioned road.



Western white pine (*Pinus monticola)* and western red cedar (*Thuja plicata)* were planted in sections of the roadbed at the time of decommissioning.

In the approximately one mile of road surveyed there were two stream crossings. Several sizeable slope failures were documented that were no longer active. Ten plus year old alders had colonized the steep ground at several of these sites.

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There were also several active slope failures between mile 0.5 and 1.0. This very active slope failure was located at the second stream crossing. Note the culvert broken off in fill material

Summary

Of the five roads identified for surveys in 2010, one was not able to be located (FS 2342000), two had little evidence of existing threats to streams and rivers (FS 235000.4 and FS 2353140) and two had numerous failures that continue to actively erode (FS 2355000 and FS 2356000). It is hoped that the information gathered by the Citizen Road Condition Survey and Monitoring Project will assist the ONF and other agencies as they prioritize restoration projects and make decisions that could affect the aquatic health of Olympic Peninsula rivers.

Acknowledgements

Robin Stoddard, ONF Hydrologist, provide her time, knowledge and enthusiasm – all of which helped make these surveys successful

We also want to thank our hardy volunteer road surveyors:

Great Old Broads (and Bros) for Wilderness

John and Nancy Woolley
Sharon Davidoff
Bo McFadden
Jan Strong
Marilyn Evans
Steve Craig
Timm Tripp
Oren Glick

The Evergreen State College/OFCO interns

Nikolai Starzek and Sarah Farlow

OFCO Project lead and Great Old Broad for Wilderness, Shelley Spading

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Wildlands CPR. 2009. Legacy Roads Citizen Monitoring. Updated April 2009.

Appendix A

Road Survey Cover and Data Sheets

Non-System Road Monitoring Cover Sheet[1]

Forest: _____ District: _____
Project name: _____ Road number: _____
Subwatershed: _____ Observer: _____
Survey date: _____
Date decommissioning completed, if applicable:_____

Road approach: What does the entrance of the road look like? Record any noteworthy comments. Take photo of entrance and record photo number and direction of photo. If possible, use a GPS unit to identify your location and record the UTM coordinates for each photo.

Photo number:_____ Direction:_____ UTM:_____

Recontoured? Yes_____ No _____

Is there a barricade, berm, or sign? Yes_____ No _____
If yes, is it effectively blocking access? Yes_____ No _____

Is there dispersed camping at entrance? Yes _____ No _____

Does the road visually disappear? Yes _____ No _____ Partially _____

Notes:_____
_____
_____

Photo #: _____ Direction: _____ UTM Coordinates: N_____ W_____

Road use: What is the type and amount of use on the non-system road?

Foot: None _____ Medium _____ Heavy _____

Motorized: None _____ Medium _____ Heavy _____

Stock: None _____ Medium _____ Heavy _____

Wildlife: None _____ Medium _____ Heavy _____

Notes: (e.g. evidence of motorized use or wildlife tracks/scat): _____
_____
_____

[1] Adapted from Wildlands CPR "Legacy Roads Citizen Monitoring" updated April 2009 and Great Old Broads for Wilderness "Healthy Lands Project" May 20, 2009

Non-System Road Condition Data Sheet[2]

Walk along the length of the road and take photos and make notes about the following conditions. If possible, use a GPS unit to identify your location and record the UTM coordinates for each photo.

- **Revegetation:** Has most of the surface been revegetated? Did they transplant native vegetation from nearby? Have they planted vegetation for erosion control? Is there ample coarse woody debris? Are there any large patches of weeds?

- **Surface erosion:** Are gullies common?

- **Landslides:** Are there any large mass movements?

- **Drainage:** Are waterbars or cross drains (ditches or humps across the road prism to divert water away from road) present and correctly installed? Do areas of ponding or saturation exist?

- **Stream crossings:** Have all culverts been removed? Has enough fill been removed to expose the original streambed? Is there channel down-cutting or bank instability? Are any erosion control blankets present? Have stream channels been recontoured to a stable angle (2:1)?

- **Culverts:** Photograph all culverts that are more than just cross-drain ditch relief culverts (i.e., those which convey a watercourse across the road prism. Culverts that are buried deeply and have big fills are especially important. What would happen if the culvert were blocked? Would it cause a big debris flow? Would the stream be diverted down the inside ditch line? Note if the culvert is perched above the water course at its outflow, appears to be inadequate for high flows, or is in disrepair.

- **Cracks or slumping on the outside of the road (sidecast failures):** "Sidecast" road prism are often partially bench (a notch in the hillside) and partially sidecast (loose fill material deposited on the hillside, typically from the adjacent bench). The loose fill is called "sidecast" and can slide away or crack off, especially when saturated with water.

Photo #: _____ Direction: _____ UTM Coordinates: N_____ W_____
Conditions Observed (enter code) _____
Notes:_____
_____

[2] Adapted from Wildlands CPR "Legacy Roads Citizen Monitoring" updated April 2009

Photo #: _____ Direction: _____ UTM Coordinates: N_____________ W______________
Conditions Observed (enter code) ________________
Notes:____
____

Photo #: _____ Direction: _____ UTM Coordinates: N_____________ W______________
Conditions Observed (enter code) ________________
Notes:____
____

Photo #: _____ Direction: _____ UTM Coordinates: N_____________ W______________
Conditions Observed (enter code) ________________
Notes:____
____

Photo #: _____ Direction: _____ UTM Coordinates: N_____________ W______________
Conditions Observed (enter code) ________________
Notes:____
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Photo #: _____ Direction: _____ UTM Coordinates: N_____________ W______________
Conditions Observed (enter code) ________________
Notes:____
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Photo #: _____ Direction: _____ UTM Coordinates: N_____________ W______________
Conditions Observed (enter code) ________________
Notes:____
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Photo #: _____ Direction: _____ UTM Coordinates: N_____________ W______________
Conditions Observed (enter code) ________________
Notes:____
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Photo #: _____ Direction: _____ UTM Coordinates: N_____________ W______________
Conditions Observed (enter code) ________________
Notes:____
____

Photo #: _____ Direction: _____ UTM Coordinates: N_____ W_____
Conditions Observed (enter code) _____
Notes:_____
_____

Photo #: _____ Direction: _____ UTM Coordinates: N_____ W_____
Conditions Observed (enter code) _____
Notes:_____
_____

Other Comments and Observations:

_____
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Appendix B

Aerial Photo Maps of Roads Surveyed

Figure 2. Road 2342000.5_6- T22N R6W Sec 23

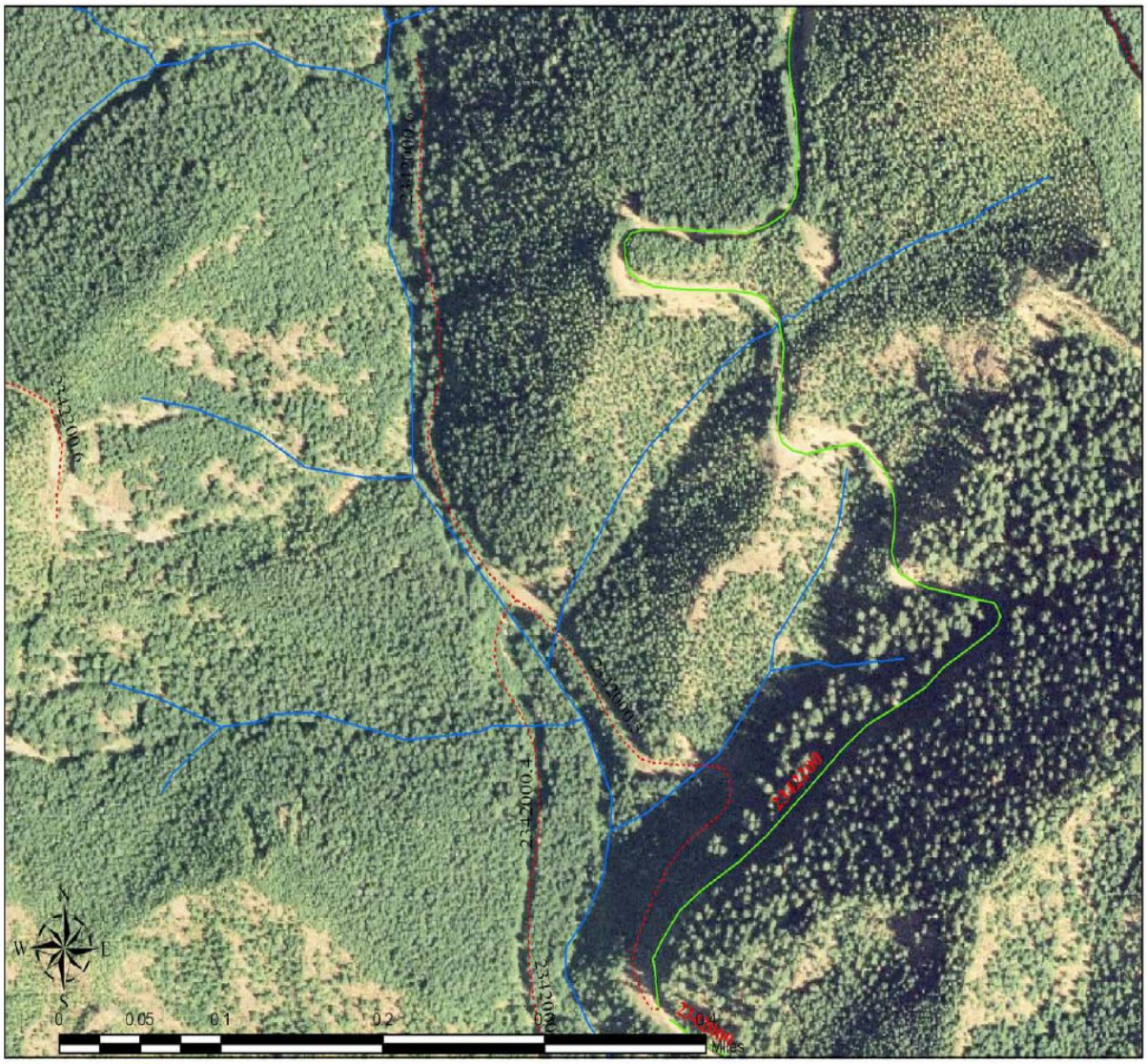


Figure 3. Road 2350000.4_5- T22N R5W Sec 19

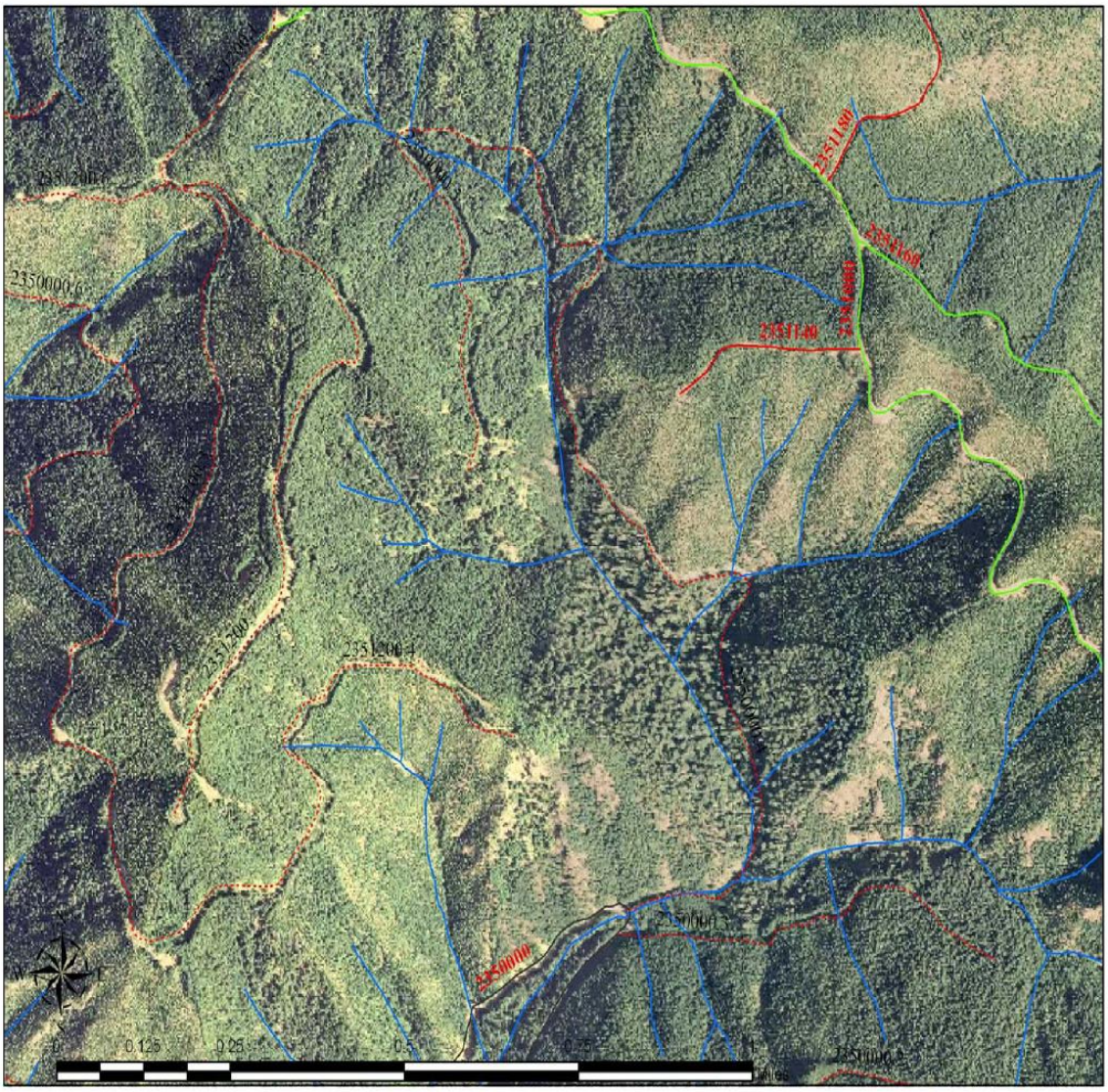


Figure 4. Road 2353140.2- T22N R5W Sec 5

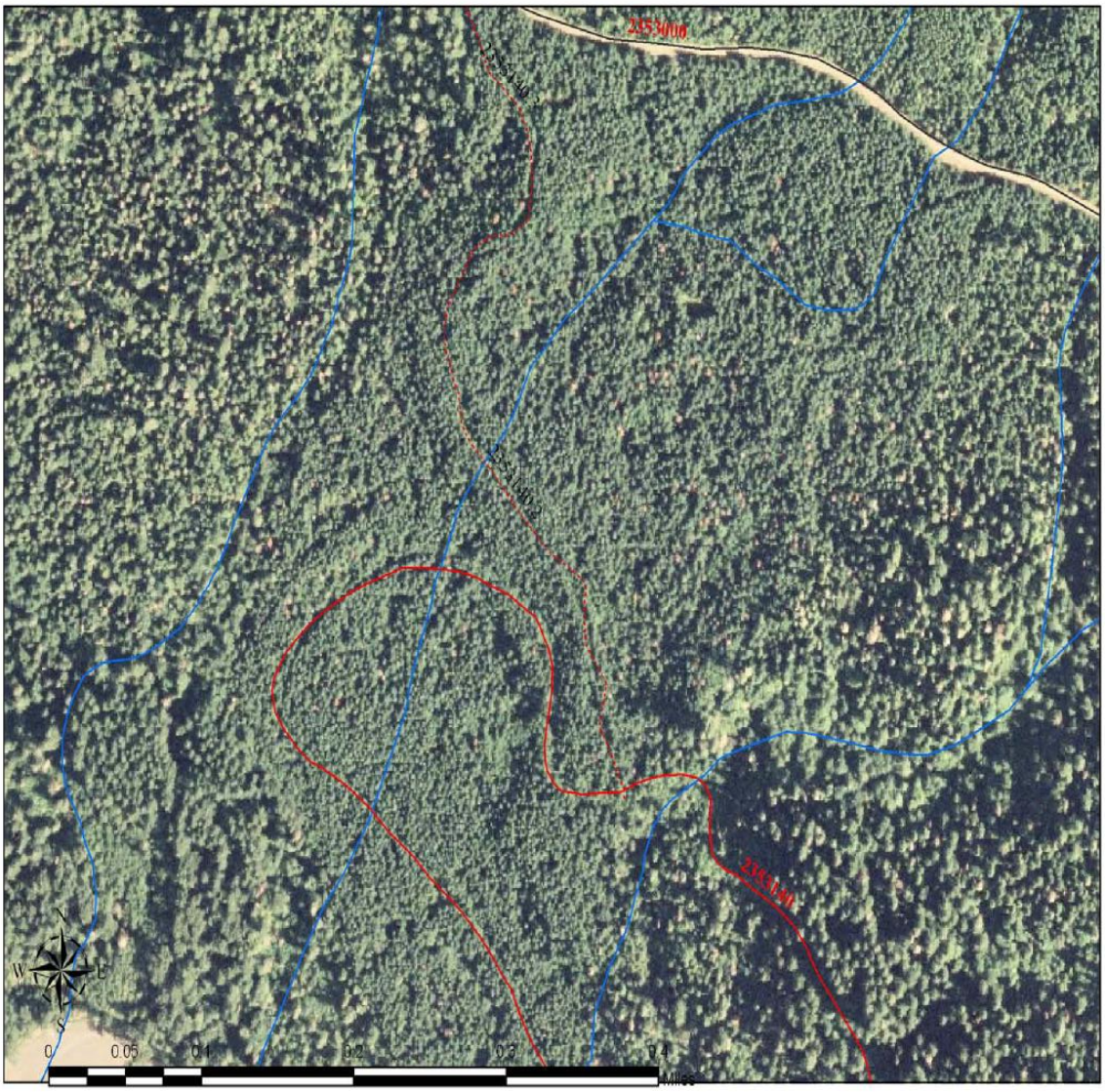


Figure 5. Road 2355000.3- T23N R6W Sec 15, 16, 9

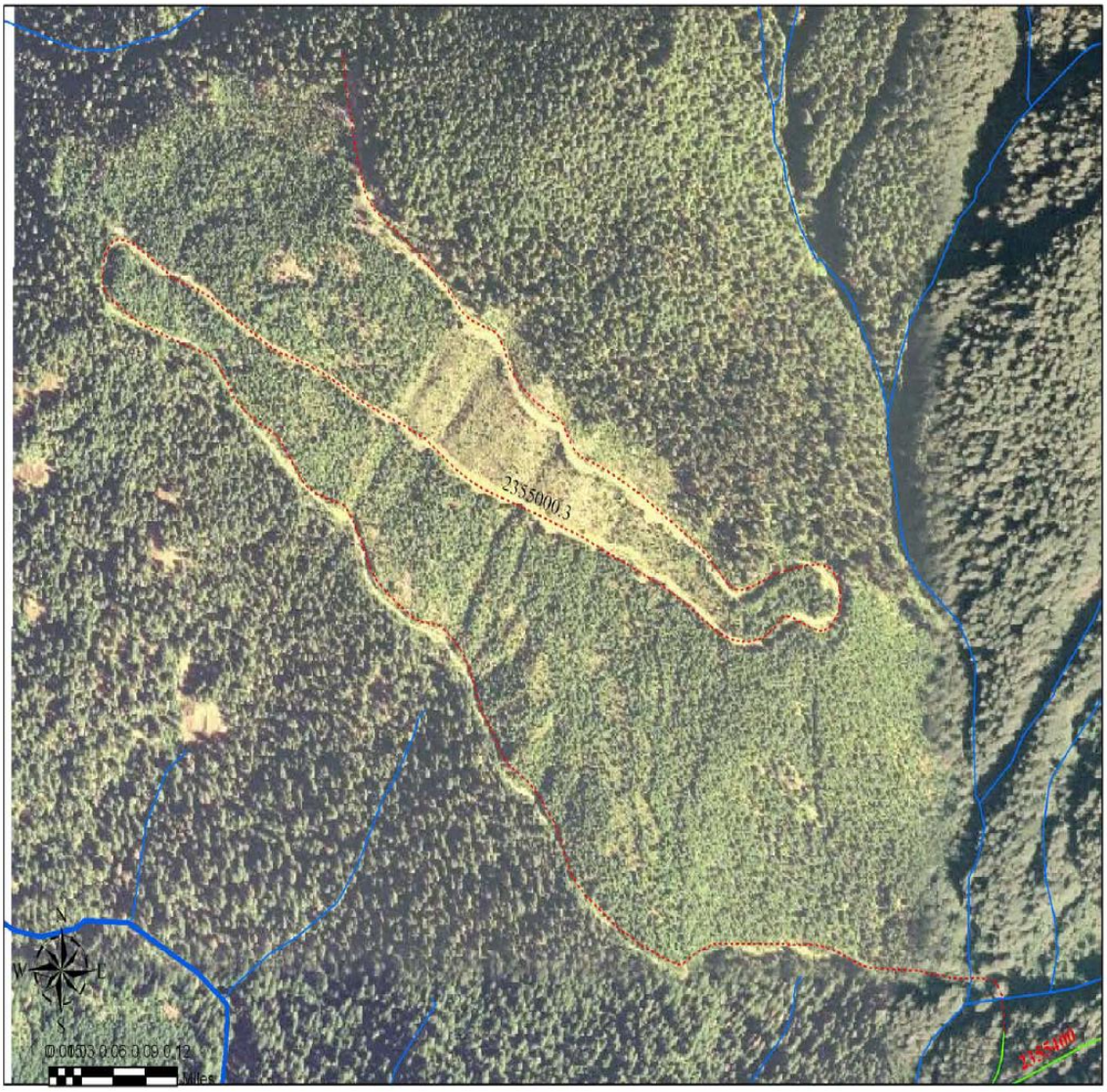
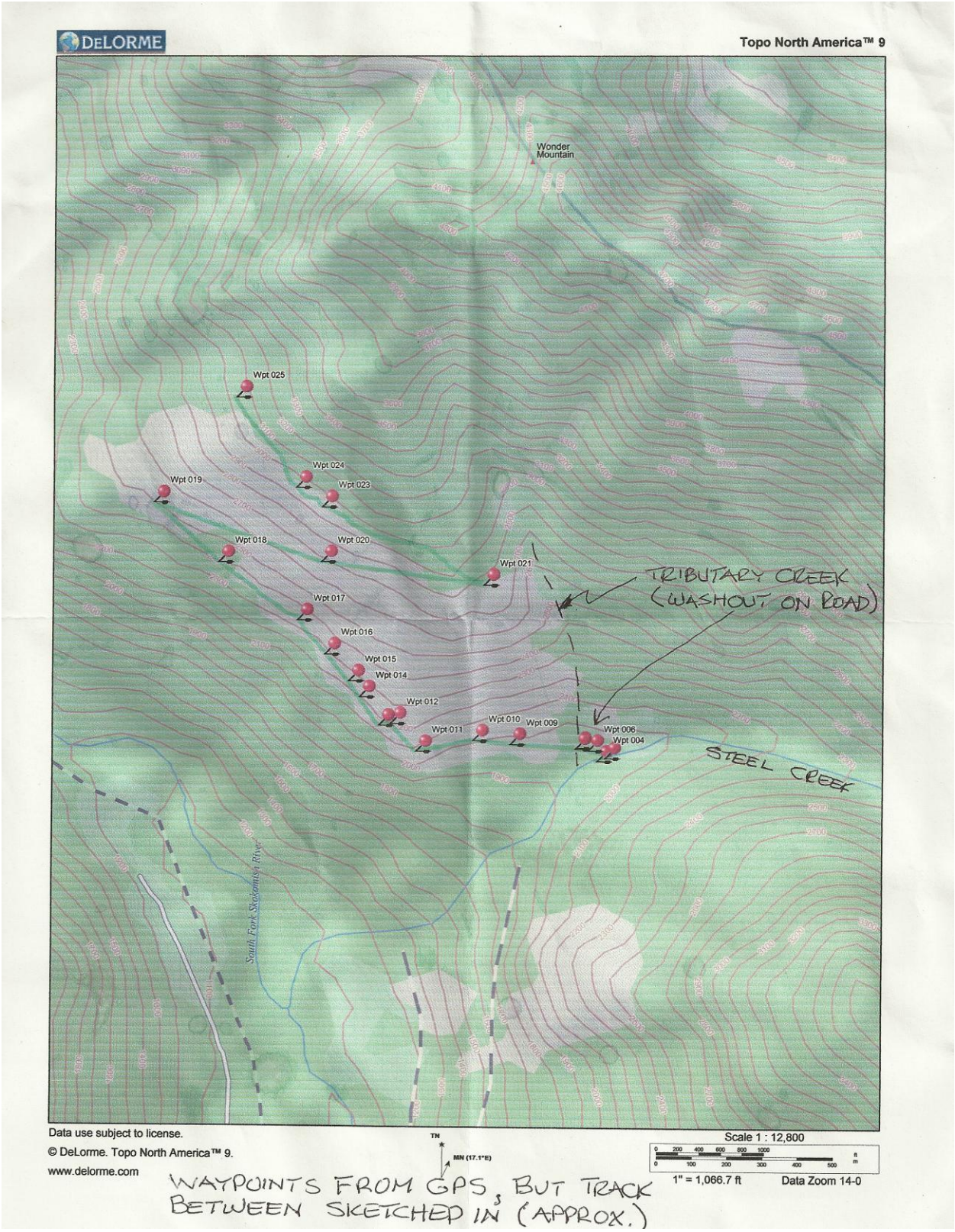


Figure 6. Road 2356000.1- T22N R5W Sec 8, 5, 6

Appendix C

FS Road 2355000

Data Sheets
and
GPS Waypoint Map


DeLORME
Topo North America™ 9
Wonder Mountain
Wpt 025
Wpt 024
Wpt 023
Wpt 019
Wpt 018
Wpt 020
Wpt 021
Wpt 017
Wpt 016
Wpt 015
Wpt 014
Wpt 012
Wpt 011
Wpt 010
Wpt 009
Wpt 006
Wpt 004
TRIBUTARY CREEK (WASHOUT ON ROAD)
STEEL CREEK
South Fork Skokomish River
Data use subject to license.
© DeLorme. Topo North America™ 9.
www.delorme.com
TN
MN (17.1°E)
Scale 1 : 12,800
1" = 1,066.7 ft
Data Zoom 14-0
WAYPOINTS FROM GPS, BUT TRACK BETWEEN SKETCHED IN (APPROX.)

7/5/10

1/5

Non-System Road Monitoring Cover Sheet[1]

Forest: OLYMPIC District: HOODSPORT
Project name: _____ Road number: 2355000.30
Subwatershed: STEEL CREEK Observer: SHARON DAVIDOFF
Survey date: JULY 9, 2010
Date decommissioning completed, if applicable: UNKNOWN- FIG 11 SAYS DECOMMISSIONED

Road approach: What does the entrance of the road look like? Record any noteworthy comments. Take photo of entrance and record photo number and direction of photo. If possible, use a GPS unit to identify your location and record the UTM coordinates for each photo.

Photo numbers: 101-1108, 1109 Direction: N UTM: 467016 E 5259318 N

Recontoured? Yes_____ No ✓

Is there a barricade, berm, or sign? Yes_____ No ✓
If yes, is it effectively blocking access? Yes_____ No _____

Is there dispersed camping at entrance? Yes ✓ No _____

Does the road visually disappear? Yes _____ No ✓ Partially _____

Notes: OBVIOUS Y @ INTERSECTION W/ 2355

Photo #: _____ Direction: _____ UTM Coordinates: N_____
W_____

Road use: What is the type and amount of use on the non-system road?

Foot: None _____ Medium ✓ Heavy _____

Motorized: None ✓ Medium _____ Heavy _____

Stock: None ✓ Medium _____ Heavy _____

Wildlife: None _____ Medium _____ Heavy _____ – COYOTE POOP & GROUSE

Notes: (e.g. evidence of motorized use or wildlife tracks/scat):
NATURAL RE-VEGETATION UNLESS OTHERWISE NOTED

NOTE: LOWER ~1½ MILES WHERE THICK BRUSH PEOPLE HAVE CUT "TRAIL" THROUGH BRUSH

[1] Adapted from Wildlands CPR "Legacy Roads Citizen Monitoring" updated April 2009 and Great Old Broads for Wilderness "Healthy Lands Project" May 20, 2009

12/5

Subwatershed STEEL CREEK **Date** JULY 9, 2010

1111
Photo #: 1110 Direction: S/N UTM Coordinates: N 5259414
W 467029 Conditions Observed (enter code) BERM TO BLOCK ROAD
Notes: FIRE PIT TO CREEK SIDE OF BERM (N)E

1113 & 1115 S
Photo # 114 Direction: N UTM Coordinates: N 5259421
W 467053 Conditions Observed (enter code) Steel Creek crossing
Notes: CULVERT GONE- CREEK IN NATURAL CONDITION
OR BRIDGE?

Photo #: 1116 Direction: W UTM Coordinates: N 5259441
W 467005 Conditions Observed (enter code) NORTH SIDE OF
Notes: RIVER WHERE ROAD STARTS AGAIN

1117 cross 1120 EAST ACROSS
1118 down stream
Photo #: 1119 Direction: UP stream UTM Coordinates: N 5259439
W 4669968 Conditions Observed (enter code)
Notes: SIDE DRAINAGE CROSSING WASHED OUT W/ 3 CULVERTS IN SECTION W/ MAIN CREEK ~60' OPEN & 24" CULVERT PARALLEL TO CREEK
VERY ACTIVE EROSION

Photo #: 1121 UPCREEK Direction: UTM Coordinates: N 5259460 STL?
W 466784 Conditions Observed (enter code) 24" Ø CULVERT
Notes: STILL CARRYING CREEK/ET ACROSS ROAD
1122 DOWNHILL SIDE OF CULVERTS - NO ACTIVE EROSION

Photo #: 1123 Direction: UTM Coordinates: N 5259470
W 4666677 Conditions Observed (enter code)
Notes: Appears to be planted DFir, cedar ?

1124 & 1125 DOWN 5259436
Photo #: Direction: UTM Coordinates: N 3/4 OF
W 466516 Conditions Observed (enter code) ROAD SIDE FAILURE
Notes: FUTURE ERODED BY SEASONAL WATER CHANNELED BY ROAD - ACTIVELY ERODING

3/5

Subwatershed STEEL CREEK **Date** 7/9/10

Photo #: 1126 **Direction:** parallel w/road **UTM Coordinates:** N 5259519
W 466442
Conditions Observed (enter code) _____
Notes: 50' LONG 8' W/ SIDE CAST FILL FAILING - DOWNSET ONLY (6" / 50 FAR) NO EROSION

1127 — UPHILL
1128 & 1129 — BOTH DOWNHILL
Photo #: _____ **Direction:** _____ **UTM Coordinates:** N 5259514
W 466407
Conditions Observed (enter code) _____
Notes: CULVERT - FUNCTIONING - SMALL CREEKLET NO ACTIVE EROSION - DOWNHILL 35' SECTION SEPARATED FROM ROAD PORTION BY 3' GAP

✓

Photo #: 1130 **Direction:** _____ **UTM Coordinates:** N 5259595
W 466353
Conditions Observed (enter code) _____
Notes: FAILURE OF ½ OF ROADBED - SIDE CAST 40' LONG - ACTIVE EROSION

1131 — UPHILL SIDE
1132 — DOWNHILL
Photo #: _____ **Direction:** _____ **UTM Coordinates:** N 5259638
W 466323
Conditions Observed (enter code) _____
Notes: GOOD SIZED CREEKLET UNDER ROAD IN ~24"ϕ CULVERT - ROAD SUBSIDES ABOVE CULVERT - ON HIS PATH & CULVERT TOP ROTTING ??

NOTE = "ACTIVE" EROSION MEANS NOT VEGETATED

Other Comments and Observations:

Notes: STEEL CREEK JULY 9, 2010 9/5

Photo #: 1133 Direction: ____ UTM Coordinates: N 5259716
W 466756 Conditions Observed (enter code) ____
Notes: 5' SIDE CAST SUBSIDENCE - DOWN ~6"-12" & CRACKING ~40' LONG
↳ 30' UP ROAD TO CULVERT THAT WAS FILLED - CREEK - NO ACTIVE EROSION

Photo #: 1134 Direction: ____ UTM Coordinates: N 5259813
W 466177 Conditions Observed (enter code) ____
Notes: 1/4 ROAD SIDE CAST SUBSIDANCE 24" DOWN 40' LONG

1136 - DOWNHILL SIDE 1137 LOOKING UP ROAD

✓Photo #: 1135, 1136 Direction: ____ UTM Coordinates: N 5259980
W 465953 Conditions Observed (enter code) ____
Notes: WATER RUNS DOWN ROAD & OVER EDGE - ACTIVE EROSION DOWNHILL FOR ABOUT ~100' CREEK IN RUD FOR ~ 200 YDS

1138 - UPHILL
Photo #: 1139 Direction: DOWNHILL UTM Coordinates: N 5260151 24"Ø
W 468769 Conditions Observed (enter code) CULVERT - FROM SMALL
Notes: CREEKLET - FUNCTIONAL

Photo #: 1140 Direction: ____ UTM Coordinates: N 5259980
W 466245 Conditions Observed (enter code) ____
Notes: MINOR SIDECAST ROAD FAILURE

141 = DOWNHILL
Photo #: 142 = UPHILL Direction: ____ UTM Coordinates: N 5259914
W 466710 Conditions Observed (enter code) CULVERT - 18"Ø
Notes: WIDE / - OPEN ROAD - NO EROSION
CULVERT - SEASONAL (NO WATER) (HOTTER THAN HELL!)

143 - UP ROAD
Photo #: 144 - DN ROAD Direction: ____ UTM Coordinates: N 5260135
W 466247 Conditions Observed (enter code) ____
Notes: SIDECAST SUBSIDENCE ~100'
(Great VIEW!) (3.11 MILES)

DRAFT STEELY CREEK 7/9/2010

5/5

Photo #: 145 Down 146 - UP Direction: ____ UTM Coordinates: N 5260191
W 466174 Conditions Observed (enter code) ____
Notes: CULVERT - ROAD FALLING SLIGHTLY
NO INLET EVIDENT

Photo #: 147 - Down road END berm @ 3.4 MILES ADJ. 29821
W 466003 Conditions Observed (enter code) ____
Notes: ROAD END BERM
MOUNTAINS TO WEST & SW -
ROCKY PEAKS & A LITTLE WIND!
STARTING TO CLOUD OVER!
YIPEE!

Other Comments and Observations: