CASCADE FOREST

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# 2017 Road Survey Report

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During our 2017 citizen science surveys of road and culvert conditions in the Gifford Pinchot National Forest, we collected data on over 13 miles of roads and 31 culverts in the Panther Creek and Trapper Creek-Wind River watersheds. This report aims to outline the findings and recommendations from these surveys. It includes summary information, detailed maps, and tables of the collected field data, all of which highlight information that is intended to be used for stream restoration and roads planning. This on-the-ground information and the restoration initiatives that can be planned from it would not be possible without the hard work of our dedicated volunteers.

# **Select Summaries and Recommendations:**

The full suite of information on roads and culverts can be found in the Appendices at the end of this document. We will highlight several priority areas below.

**NF-6801:** Three of the four culverts that were 100% plugged (6, 19, 30) were found on this road. The parts of NF-6801 that are south of NF-025 lie within a Riparian Reserve. This section of the road had two of the culverts that were completely plugged. These completely plugged culverts (19, 30) are within a half a mile of each other, suggesting this is an area of possible impending road failure if unaddressed. In this segment of road, there were also three noted observations of erosion, one of which was a severe washout that traversed the full width of the road. These blocked culverts are likely contributing to the severe erosion on the road. This road should be a priority restoration site since the impact to streams is double: from fragmentation (blocked culverts) and sedimentation (erosion).

**NF-030:** An area at the beginning of this road was full of garbage/debris (38). All culverts along this road had at least 25% of every inlet or outlet plugged. There were two locations along this road that were used as dispersed camp sites based on the evidence of old fire rings (16, 28). This road crosses Panther Creek, which is a important tributary of Wind River and supports many of the ESA-listed fish populations that are found in the Wind River area. This is a priority road for maintenance and repair.

As it relates to forest health, legacy features, and timber harvest, this road was surrounded by a diverse, multi-story forest that had a partially open canopy with a large number of wide trees. Of note, at least five large trees ranging from 32" to 40" DBH were within a proposed timber sale unit (23, 42, 54). These trees should be marked as 'leave trees' in the Middle Wind timber harvest plan.

**NF-62:** There were multiple locations of trash (4, 8, 22) worthy of note along this road, which would indicate a need to send crews out for cleanup.

**NF-380:** Although only a small segment of this road was surveyed, survey teams found a fully plugged culvert (23) and noted that this segment of road sat within a Riparian Reserve near the Wind River. This road cuts through two side-channels of the Wind River where habitat refugia is already scarce.

## **Culverts summary**

We encountered three culverts with *outlets* that were 100% plugged, two that were 75% plugged, and one that was 50% plugged (percentages were rounded up or down to the nearest quarter). We encountered two culverts with *inlets* that were 100% plugged, two 75% plugged, and five that were 50% plugged. Object IDs listed below can be referenced in the associated maps to identify where each of these culverts are located, and therefore, to prioritize the areas most in need of restoration.

## **Priority Culverts**

1. Object IDs for culverts with an inlet or outlet ~100% blocked

- ♦ 6
- ♦ 19
- ◆ 23
- ♦ 30

2. Object IDs for culverts with an inlet or outlet ~50% or 75% blocked

- ♦ 2
- ♦ 7
- ♦ 12
- ◆ 13
- ♦ 19
- ◆ 23
- ◆ 27
- ♦ 28

### Full list of National Forest roads surveyed in 2017

- 1.6801
- 2.030
- 3.025
- 4.62
- 5.380

### Maps and Tables

Each map is labeled as either "Culverts" or "Notes." On the "Culverts" maps, the blue numbers (Object ID) correspond to a row in the associated culvert table. On the "Notes" maps, the purple numbers (Object ID) correspond to their own logged data in the table.

Instances of erosion can be found in both the "Notes" section as well as with the culvert data. The map icons provide a visual reference for priority culverts with red being fully plugged, yellow being plugged 25% - 75%, and blue being plugged less than 25%. The icons on the maps are layered and therefore some icons are hidden underneath another, which happens when two observations (e.g., culvert *and* trash) are recorded at the same location. In these instances, the number associated with the bottom icon is still displayed on the map, and therefore, the observation is still able to be referenced.

All data recorded and mapped through this work were collected on iPads using the ArcGIS Collector system. We designed the data collection system to match our previously created road survey forms, which were created in collaboration with partners and Forest Service staff.



#### Appendix A: CULVERTS

Object ID	Culvert Diameter	Depth to Inlet	Depth to Outlet	% of Inlet Plugged	% of Outlet Plugged	Width of Road	Road Grade	Notes
1	18"	10"	12"	-	25%	0'	-	4 ft from bottom of culvert to stream bed
2	16"	30"	120"	50%	50%	8'	Up	
3	48"	120"	94"	0%	0%	10'	Up	
4	16"	42"	36"	25%	25%	9'	Up	
5	16"	20"	48"	0%	0%	8'	Up	
6	12"	24"	48"	100%	100%	11'	Dow n	
7	24"	24"	36"	50%	0%	11'	Flat	Inlet mashed some
8	Other	360"	0"	0%	-	0'	Up	Culvert 6 feet diameter
9	24"	12"	36"	25%	25%	10'	Up	Possible new culvert, has some vegetation 1.5 in. away. Manmade trail, not recently used. Cut logs 75 ft. into & across the trail
10	18"	96"	144"	0%	0%	10'	Up	
11	24"	12"	40"	25%	0%	11'	Up	
12	Other	24"	60"	25%	75%	0'	Dow n	
13	18"	24"	24"	50%	75%	9'	Up	Short grasses in center of road
14	16"	12"	120"	0%	0%	10'	Up	
15	24"	5"	0"	0%	0%	0'	Up	
16	12"	36"	48"	0%	0%	14'	-	
17	16"	24"	60"	0%	0%	80'	Up	Washed out below culvert outlet
18	18"	52"	8"	25%	25%	9'	Up	Somewhat dented
19	Other	12"	0"	75%	100%	0'	Up	Crosses under side road
20	18"	30"	72"	25%	0%	11'	-	
21	16"	24"	36"	25%	0%	9'	Up	
22	12"	48"	180"	0%	-	8'	Up	3 ft drop from end of culvert
23	18"	54"	0"	75%	100%	0'	Up	
24	18"	30"	36"	0%	25%	13'	Up	
25	24"	36"	0"	0%	0%	60'	Up	
26	18"	18"	36"	25%	0%	9'	Flat	Culvert depth was really 20, 7 in. from bottom of culvert to ground
27	18"	24"	24"	50%	25%	8'	Dow n	
28	24"	80"	240"	50%	0%	9'	Up	Outlet has log on it, significant erosion around.
29	Other	72"	100"	0%	0%	10'	Up	Stream culvert
30	18"	24"	60	100%	25%	10'	Up	
31	Other	-	0"	-	-	-	-	Large culvert about 10 feet down. Too steep to get down.







#### Legend

- Culverts % Plugged > 75%
- Culverts % Plugged > 25% <= 75%
- Culverts % Plugged <= 25%
- Surveyed Roads
  - Streams





#### **Appendix B: NOTES**

Object ID	Observation	Notes				
1	Revegetation	Middle of road and right side of road				
2	Revegetation	Over roadway				
3	Survey Stop					
4	Trash	Stove and toilet over the bank				
5	Road Obstacle	Young tree				
6	Note	Pine leaning over left side				
7	Road Obstacle					
8	Trash	Board on right shoulder used for target practice				
9	Road Obstacle					
10	Erosion	Mild erosion				
11	Erosion	Mild erosion				
12	Note	Diverse multi story partially open canopy stand with wide trees				
13	Road Obstacle					
14	Erosion	Washout severe 2/5 width				
15	Survey Start					
16	Note	Dispersed campsite with old fire ring				
17	Note	Running water hole approx 6 ft from road. Couldn't find an				
10	Deed Obstaals	outlet of a pipe in the noie so couldn't commit as a cuivert				
18	Road Obstacle					
19	Road Obstacle	Deedwideen				
20	Road Obstacle	Rodu Widelis				
21	Trach	48 DBH tree on left of road, outside edge of unit				
22	IIdSII					
23	Revegetation	More grass in center of road, stopped road monitoring especially culverts				
24	Road Obstacle					
25	Road Obstacle	Large pothole				
26	Erosion	Medium erosion				
27	Note	Rotted tree protruding over right side of road. Small pine tree leaning into road right side.				
28	Note	Dispersed campsite with fire ring				
29	Road Obstacle					
30	Road Obstacle	Tree down over left side of road				
31	Road Obstacle					
32	Road Obstacle	Large half tree blocking half road. Young tree leaning to middle of road				
33	Note	Young alder tree left side encroaching road				
34	Erosion	Mild erosion				
35	Note	Water running under road but no visible culvert				
36	Road Obstacle					
37	Road Obstacle					
38	Trash	Area at the beginning of the road was full of garbage				
Table continued on next page						











#### Appendix B: NOTES

Object ID	Observation	Notes				
39	Revegetation	Trees growing in middle				
40	Road Obstacle					
41	Road Obstacle					
42	Note	Tree on south side of road 101 cm DBH edge of proposed tim- ber sale.				
43	Revegetation	Middle and sides of road				
44	Road Obstacle					
45	Note	Campsite on left side. Garbage and gun shells. Picked some up.				
46	Erosion	Severe washout full width road				
47	Note	Large tree in proposed cutting area 81 cm DBH				
48	Survey Start					
49	Erosion	Mild erosion				
50	Road End	Berm and tank trap close road beyond this point, road naturally closing, road has been decommissioned				
51	Trash					
52	Survey Stop					
53	Survey Stop					
54	Note	103 cm DBH, large 81 cm DBH, tree 99 cm DBH trees on edge of timber sale				
55	Erosion	Very mild erosion up this entire stretch of road.				
56	Note	Potholes shallow				
57	Road Obstacle					
58	Note	Weeds growth center of road and encroaching on left shoulder.				
59	Note	Dense young forest				
60	Road Obstacle					
61	Road Obstacle					
62	Note	Open well-spaced healthy forest				
63	Erosion	Mild erosion				