File Reference: EF.15.0069

Fisheries Monitoring Results 2006-2009

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December 17, 2009.

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WEST ZONE TEMPERATURE MONITORING

MONITORING RESULTS SUMMARY SHEET

Program:
Fisheries

Activity:
Annual Temperature Monitoring

Location:
Various locations on the West Zone of the Payette National Forest (Table 1, Table 2 and Table 3).

Objectives:
Monitor stream temperatures throughout the West Zone of the Payette National Forest to determine compliance with cold water biota temperature standards, document baseline conditions in areas where management activities are planned, monitor effects of ongoing actions and to meet habitat monitoring requirements for bull trout, which is the Forest Management Indicator Species and listed as Threatened under the Endangered Species Act.

Methodology:
Thermographs were placed at specific monitoring sites throughout the West Zone of the Payette National Forest and at Management Indicator Species (MIS) survey sites (Tables 1-3) in May and June and collected in October. Thermographs used for data collection were either Optic Stowaway Temps® or HOBO Water Temp Pro V2® data loggers. Thermographs were set to record stream temperatures at 1 hour 30 minute intervals. In 2009, 4 additional thermographs were installed as part of a cooperative bull trout study with the Rocky Mountain Research Station (RMRS) (Table 4). RMRS provided the thermographs (StowAway Tidbit Temp Loggers) and they were installed using our standard protocol.

Table 1. List of temperature monitoring sites where thermographs were deployed in 2006 and 2007.

Site Code	Stream Name (location)	Site Code	Stream Name (location)
W01340	Anderson Creek (mouth)	W18640	East Fork Weiser River (headwaters)
W19440	Anderson Creek (headwaters)	W09840	Dewey Creek (lower)
W10740	Little Weiser River (Beer Bottle Crossing)	W12140	Beaver Creek (Forest Boundary)
		W22040	Indian Creek (headwaters)
W22240	Little Weiser River Tributary (exclosure)	W01840	Indian Creek (Mann Creek)
		W22140	Little Bear Creek (above falls)
W16740	Sheep Creek (upper)	W23540	West Mill Creek (US of Road 004)
W16840	Sheep Creek (lower)	W21540	Huntley Gulch (Forest Boundary)
W16940	Sheep Creek (middle)	W24940	Anderson Creek (MIS)
W15340	Bear Creek (DS Little Bear Creek)	W26340	Sheep Creek (MIS)
W15540	Bear Creek (headwaters)	W26440	East Fork Weiser River (MIS)
W15840	Crooked River (Lafferty)	W26540	Dewey Creek (MIS)
W19540	Crooked River (headwaters)	W26640	Crooked River (MIS)
W16440	Lick Creek (above exclosure)	W26740	Bear Creek (MIS)
W16640	Mill Creek (DS of West Mill Creek)	W26840	Indian Creek (MIS)
W10940	East Fork Weiser River (lower Bench)	W26940	Camp Creek (MIS)
W11040	East Fork Weiser River (upper Bench)		

Table 2. List of temperature monitoring sites where thermographs were deployed in 2008. MIS site codes were adjusted in 2008 to provide consistency with the Forest database.

Site Code	Stream Name (location)	Purpose	Site Code	Stream Name (location)	Purpose
W01340	Anderson Creek (mouth)	BT, Range	W18640	East Fork Weiser River (headwaters)	BT, Range
W19440	Anderson Creek (headwaters)	BT, Range	W09840	Dewey Creek (lower)	BT, Range
			W12140	Beaver Creek (Forest Boundary)	Veg. Mgt.
W10740	Little Weiser River (Beer Bottle Crossing)	BT, Range	W22040	Indian Creek (headwaters)	BT
W22240	Little Weiser River Tributary (exclosure)	BT, Range	W01840	Indian Creek (Mann Creek)	BT
W16740	Sheep Creek (upper)	BT, Range			
W16840	Sheep Creek (lower)	BT, Range	W22140	Little Bear Creek (above falls)	BT, Veg. Mgt.
W16940	Sheep Creek (middle)	BT, Range			
W15340	Bear Creek (DS Little Bear Creek)	BT	W23540	West Mill Creek (US of Road 004)	Veg. Mgt.
W15540	Bear Creek (headwaters)	BT	W21540	Huntley Gulch (Forest Boundary)	BT, Veg. Mgt
W15840	Crooked River (Lafferty)	BT	W26840	Anderson Creek (MIS)	BT
			W26440	Sheep Creek (MIS)	BT
W19540	Crooked River (headwaters)	BT (MIS)	W27240	East Fork Weiser River (MIS)	BT
W16440	Lick Creek (above exclosure)	Range	W27340	Dewey Creek (MIS)	BT
			W19540	Crooked River (MIS)	BT
W16640	Mill Creek (DS of West Mill Creek)	Veg. Mgt.	W26940	Bear Creek (MIS)	BT
			W26640	Indian Creek (MIS)	BT
W10940	East Fork Weiser River (lower Bench)	BT, East Fork Ditch	W27440	Camp Creek (MIS)	BT
W11040	East Fork Weiser River (upper Bench)	BT, East Fork Ditch			

BT: Bull Trout
Veg. Mgt.: Vegetation Management
Range: Range Management

Table 3. List of temperature monitoring sites where thermographs were deployed in 2009.

Site Code	Stream Name (location)	Purpose	Site Code	Stream Name (location)	Purpose
W01340	Anderson Creek (mouth)	BT, Range	W18640	East Fork Weiser River (headwaters)	BT, Range
W19440	Anderson Creek (headwaters)	BT, Range	W09840	Dewey Creek (lower)	BT, Range
			W12140	Beaver Creek (Forest Boundary)	Veg. Mgt.
W10740	Little Weiser River (Beer Bottle Crossing)	BT, Range	W22040	Indian Creek (headwaters)	BT
W22240	Little Weiser River Tributary (exclosure)	BT, Range	W01840	Indian Creek (Mann Creek)	BT
W16740	Sheep Creek (upper)	BT, Range			
W16840	Sheep Creek (lower)	BT, Range	W24940	Indian Creek (DS of Cuprum	BT, Veg. Mgt.
W16940	Sheep Creek (middle)	BT, Range			
W15340	Bear Creek (DS Little Bear Creek)	BT	W22140	Little Bear Creek (above falls)	BT, Veg. Mgt.
W15540	Bear Creek (headwaters)	BT	W23540	West Mill Creek (US of Road 004)	Veg. Mgt
W15840	Crooked River (Lafferty)	BT	W21540	Huntley Gulch (Forest Boundary)	BT, Veg. Mgt.
W19540	Crooked River (headwaters)	BT (MIS)	*	Dick Ross Creek	Veg. Mgt.
			*	Moonshine Creek	Veg. Mgt.
W16440	Lick Creek (above exclosure)	Range	W26840	Anderson Creek (MIS)	BT
			W26440	Sheep Creek (MIS)	BT
W16640	Mill Creek (DS of West Mill Creek)	Veg. Mgt.	W27240	East Fork Weiser River (MIS)	BT
W10940	East Fork Weiser River (lower Bench)	BT, East Fork Ditch	W27340	Dewey Creek (MIS)	BT
			W19540	Crooked River (MIS)	BT
W11040	East Fork Weiser River (upper Bench)	BT, East Fork Ditch	W26940	Bear Creek (MIS)	BT
			W26640	Indian Creek (MIS)	BT
			W27440	Camp Creek (MIS)	BT

*The Dick Ross and Moonshine Creek sites have yet to be assigned site codes.

BT: Bull Trout
Veg. Mgt.: Vegetation Management
Range: Range Management

Table 4. List of temperature monitoring sites installed for a cooperative bull trout study with RMRS, 2009.

Site Code	Stream Name (location)
W30140	Bisbee Creek (mouth)
W07840	Wildhorse River (Cows Horn Gulch)
W30240	Indian Creek (Degits Creek)
W00740	Crooked River (Junction)

Results:

Data summaries are on file at the Council Ranger District and the Supervisor's Office.

Discussion and Recommendations:

Nelson and Burns (2006) provide an analysis and discussion of temperature trends on the Payette National Forest.

Responsible Individuals:
West Zone Fisheries Biologist and Fisheries Technician.

Responsible Official:
Greg Lesch, Council District Ranger

Prepared by:
J. Greenway, Fisheries Technician

Date:
12/17/2009

GREEN HORNET HAZARDOUS FUELS REDUCTION PROJECT

MONITORING RESULTS SUMMARY SHEET

Program:
Fisheries

Activity:
RCA monitoring, required as a mitigation measure to be implemented as part of the project.

Location:
Hornet Creek Watershed, Mill Creek and West Mill Creek, Council Ranger District. T18N R3W S25, 26, 27, 34 and 35.

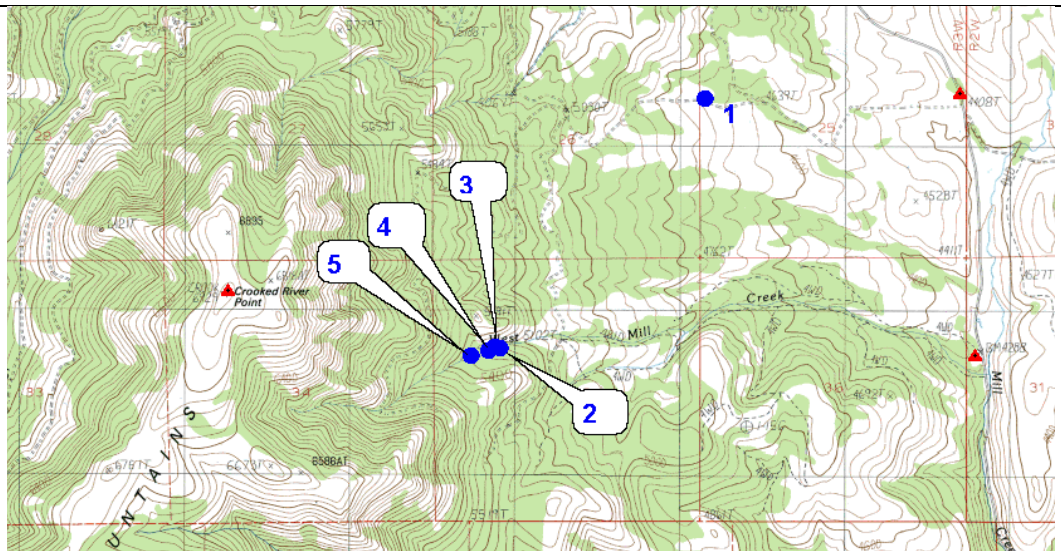
Objectives:

1. Monitor RCAs by establishing transects and photopoints before, during and for two years after treatment as outlined in the EA.
2. Continue monitoring stream temperatures in West Mill Creek and Mill Creek for two years after RCA treatment (Green Hornet Hazardous Fuels Reduction Project EA)

Methodology:
Five photomonitoring sites were created by the Fisheries Biologist in RCAs that were thinned and piled in 2006 (see below). These sites were visited in 2006 through 2009 to document vegetation changes in the RCAs. Site 1 is located along an unnamed intermittent tributary of Mill Creek at T18N R3W S26 NE 1/4. Sites 2-5 are located in the RCA along the north side of West Mill Creek at T18N R3W S35 NW1/4. Four photographs were taken at each site (3 photos at site 1). Sites were located within the RCAs at the thinning boundary and photographs were taken looking parallel, downstream, towards (perpendicular to) the stream and away from the stream.

Green Hornet Photomonitoring Site Locations and Map.

Site	Zone	Easting	Northing
1	11 T	0527085	4968498
2	11 T	0525836	4966964
3	11 T	0525810	4966975
4	11 T	0525769	4966946
5	11 T	0525662	4966919



Thermographs were placed in Mill Creek and West Mill Creek. The thermograph site on West Mill Creek was located approximately 50m upstream of where FS Road 004 crosses West Mill Creek. This site is located between units 4 and 5. The thermograph site on Mill Creek is located approximately 300m downstream of the confluence of West Mill Creek.

Results:

The following series of photographs depicts conditions in the RCAs and slash piles that were created as a result of thinning at each of the 5 sites. Photos depict the areas in 2006 through 2009. Pile burning began in 2006, but due to weather conditions, objectives were not met. Burning continued in 2007 and 2008. Any remaining piles will be burned when the area is broadcast burned when logging operations are completed.

Figures 1-8 display the results of 2006 through 2009 temperature monitoring in Mill Creek and West Mill Creek. Additional stream temperature data from these streams is on file at the Council Ranger District.

Site 1. The following 6 photographs depict slash piles and conditions in the RCA on an unnamed tributary of Mill Creek 2006-2009.

Site 1, photo 1, 2006. Upstream.

Site 1, photo 1, 2007. Upstream.

Site 1, photo 1, 2008. Upstream.

Site 1, photo 1, 2009. Upstream.

Site 1, photo 2, 2006. Away from the stream.

Site 1, photo 2, 2007. Away from the stream.

Site 1, photo 2, 2008. Away from the stream.

Site 1, photo 2, 2009. Away from the stream.

Site 1, photo 3, 2006. Downstream.

Site 1, photo 3, 2007. Downstream.

Site 1, photo 3, 2008. Downstream.

Site 1, photo 3, 2009. Downstream.

Site 1, photo 4, 2008. Towards the stream.

Site 1, photo 4, 2009. Towards the stream.

Site 2. The following 8 photographs depict slash piles and conditions in the RCA on West Mill Creek from 2006-2009.

Site 2, photo 1, 2006. Downstream.

Site 2, photo 1, 2007. Downstream.

Site 2, photo 1, 2008. Downstream.

Site 2, photo 1, 2009. Downstream.

Site 2, photo 2, 2006. Away from the stream.

Site 2, photo 2, 2007. Away from the stream.

Site 2, photo 2, 2008. Away from the stream.

Site 2, photo 2, 2009. Away from the stream.

Site 2, photo 3, 2006. Upstream.

Site 2, photo 3, 2007. Upstream.

Site 2, photo 3, 2008. Upstream.

Site 2, photo 3, 2009. Upstream.

Site 2, photo 4, 2006. Towards stream.

Site 2, photo 4, 2007. Towards stream.

Site 2, photo 4, 2008. Towards stream.

Site 2, photo 4, 2009. Towards stream.

Site 3. The following 8 photographs depict slash piles and conditions in the RCA on West Mill Creek from 2006-2009.

Site 3. photo1, 2006. Downstream.

Site 3. photo1, 2007. Downstream.

Site 3. photo1, 2008. Downstream.

Site 3. photo1, 2009. Downstream.

Site 3, photo 2, 2006. Away from stream.

Site 3, photo 2, 2007. Away from stream.

Site 3, photo 2, 2008. Away from stream.

Site 3, photo 2, 2009. Away from stream.

Site 3, photo 3, 2006. Upstream.

Site 3, photo 3, 2007. Upstream.

Site 3, photo 3, 2008. Upstream.

Site 3, photo 3, 2009. Upstream.

Site 3, photo 4, 2006. Towards the stream.

Site 3, photo 4, 2007. Towards the stream.

Site 3, photo 4, 2008. Towards the stream.

Site 3, photo 4, 2009. Towards the stream.

Site 4. The following 8 photographs depict slash piles and conditions in the RCA on West Mill Creek from 2006-2009.

Site 4, photo1, 2006. Downstream.

Site 4, photo1, 2007. Downstream.

Site 4, photo1, 2008. Downstream.

Site 4, photo1, 2009. Downstream.

Site 4, photo 2, 2006. Away from stream.

Site 4, photo 2, 2007. Away from stream.

Site 4, photo 2, 2008. Away from stream.

Site 4, photo 2, 2009. Away from stream.

Site 4, photo 3, 2006. Upstream.

Site 4, photo 3, 2007. Upstream.

Site 4, photo 3, 2008. Upstream.

Site 4, photo 3, 2009. Upstream.

Site 4, photo 4, 2006. Towards the stream.

Site 4, photo 4, 2007. Towards the stream.

Site 4, photo 4, 2008. Towards the stream.

Site 4, photo 4, 2009. Towards the stream.

Site 5. The following 8 photographs depict slash piles and conditions in the RCA on West Mill Creek from 2006-2009.

Site 5, photo 1, 2006. Downstream.

Site 5, photo 1, 2007. Downstream.

Site 5, photo 1, 2008. Downstream.

Site 5, photo 1, 2009. Downstream.

Site 5, photo 2, 2006. Away from the stream.

Site 5, photo 2, 2007. Away from the stream.

Site 5, photo 2, 2008. Away from the stream.

Site 5, photo 2, 2009. Away from the stream.

Site 5, photo 3, 2006. Upstream.

Site 5, photo 3, 2007. Upstream.

Site 5, photo 3, 2008. Upstream

Site 5, photo 3, 2009. Upstream

Site 5, photo 4, 2006. Downstream.

Site 5, photo 4, 2007. Downstream.

Site 5, photo 4, 2008. Downstream.

Site 5, photo 4, 2009. Downstream.

Figure 1. Results of temperature monitoring in Mill Creek, 2006 (figure should be printed in color).

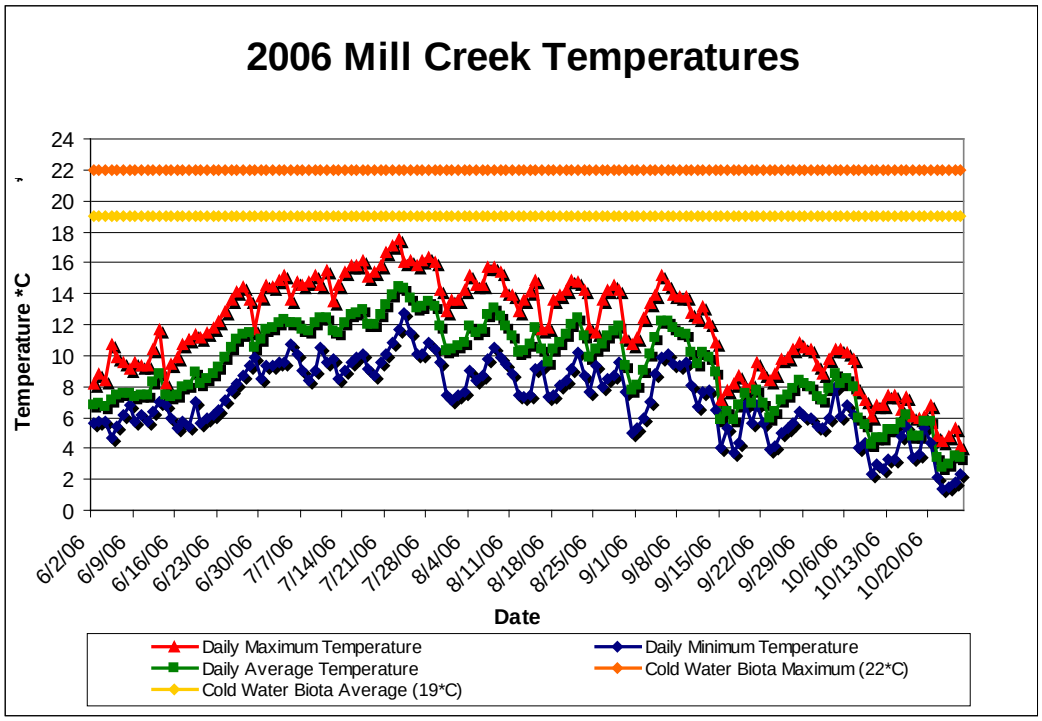


Figure 2. Results of temperature monitoring in Mill Creek, 2007 (figure should be printed in color).

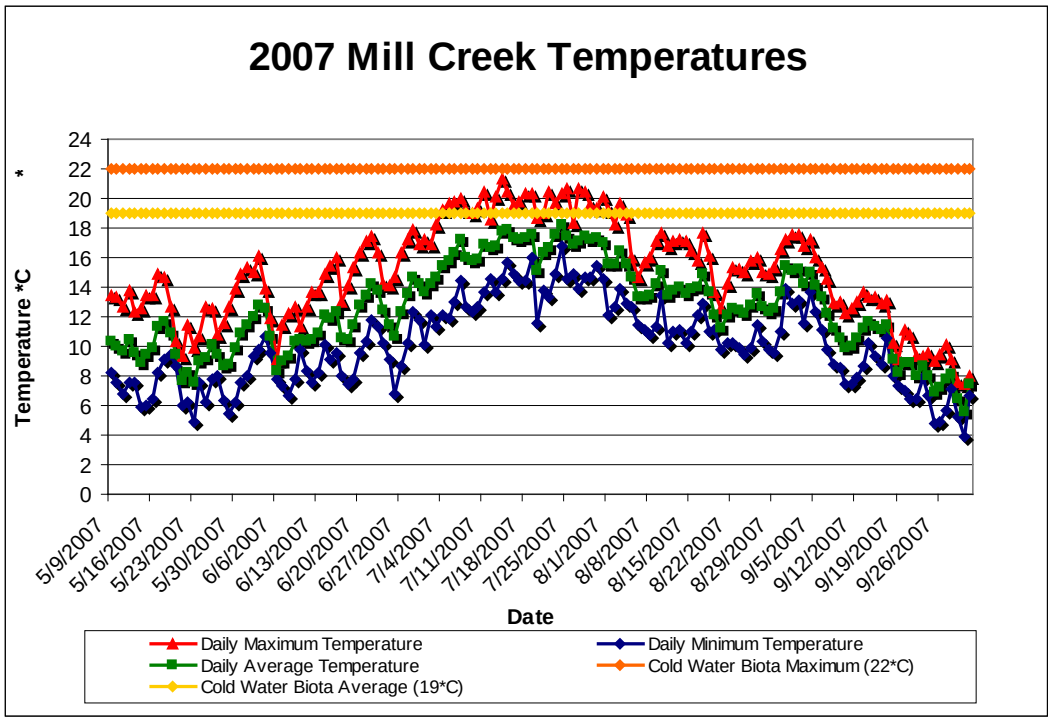


Figure 3. Results of Temperature monitoring in Mill Creek, 2008 (figure should be printed in color).

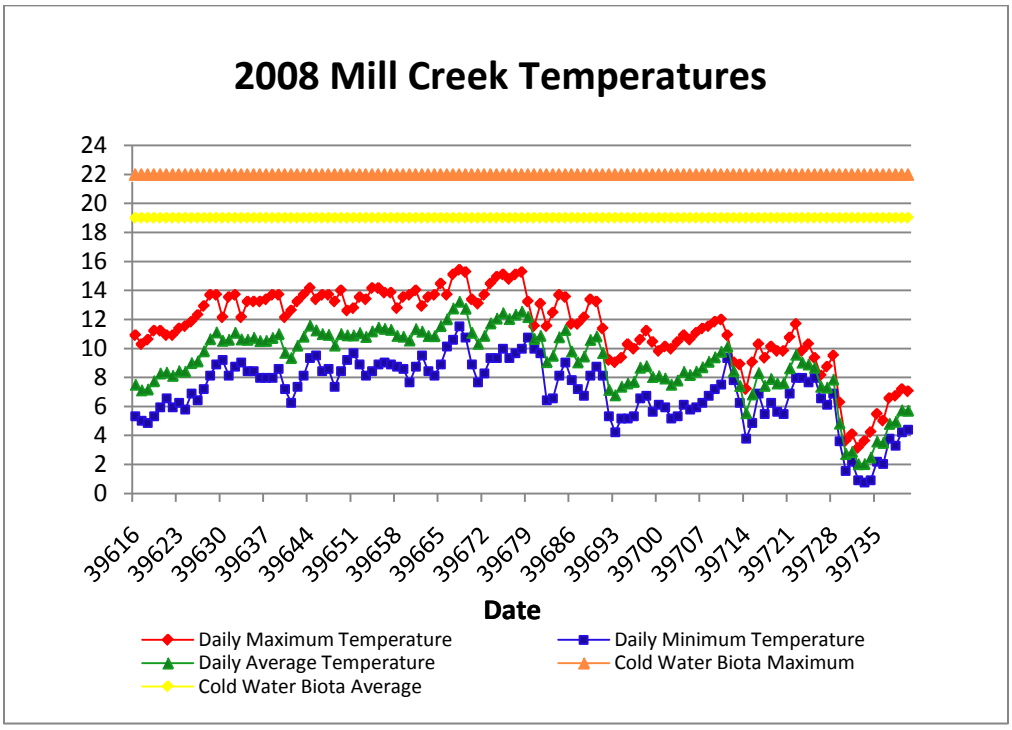


Figure 4. Results of Temperature monitoring in Mill Creek, 2009 (figure should be printed in color).

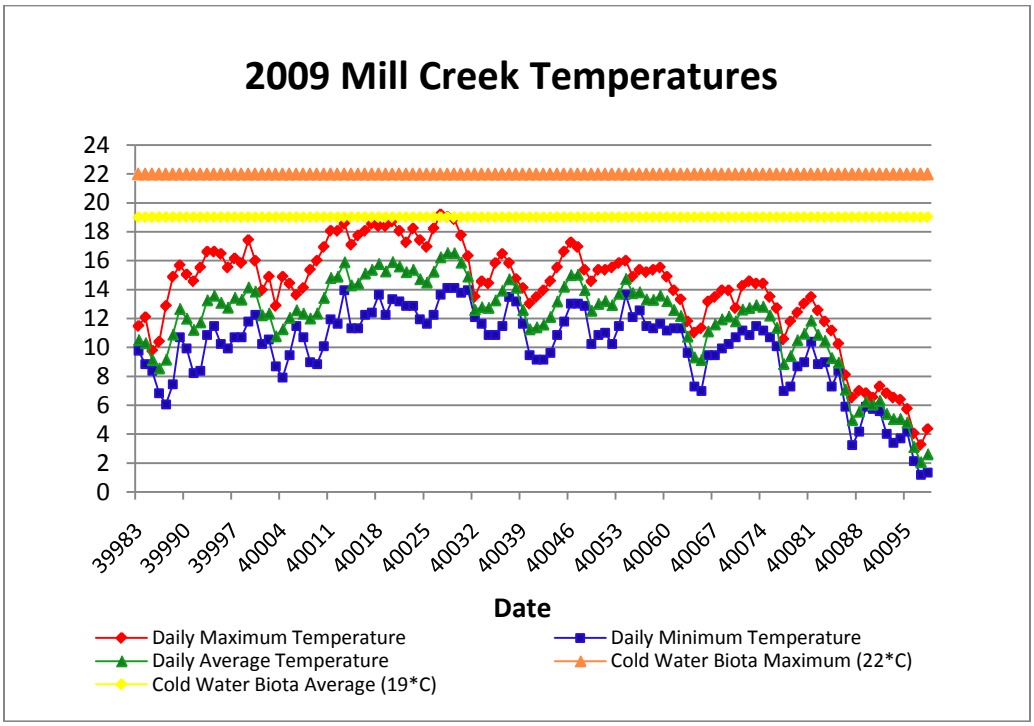


Figure 5. Results of temperature monitoring in West Mill Creek, 2006 (figure should be printed in color).

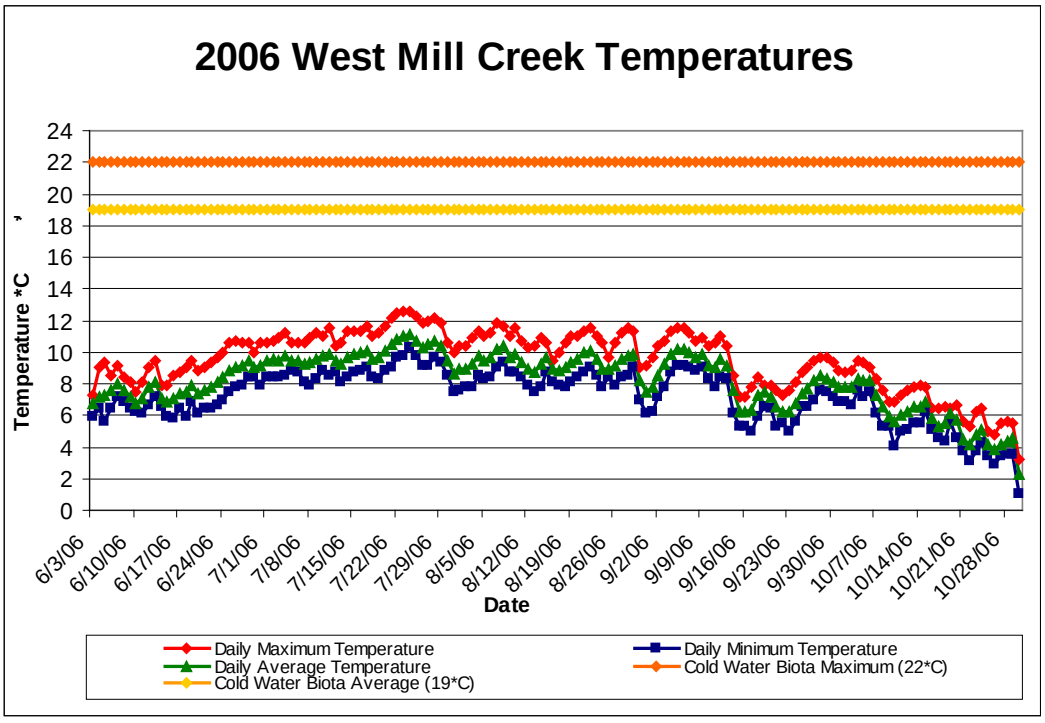


Figure 6. Results of temperature monitoring in West Mill Creek, 2007 (figure should be printed in color).

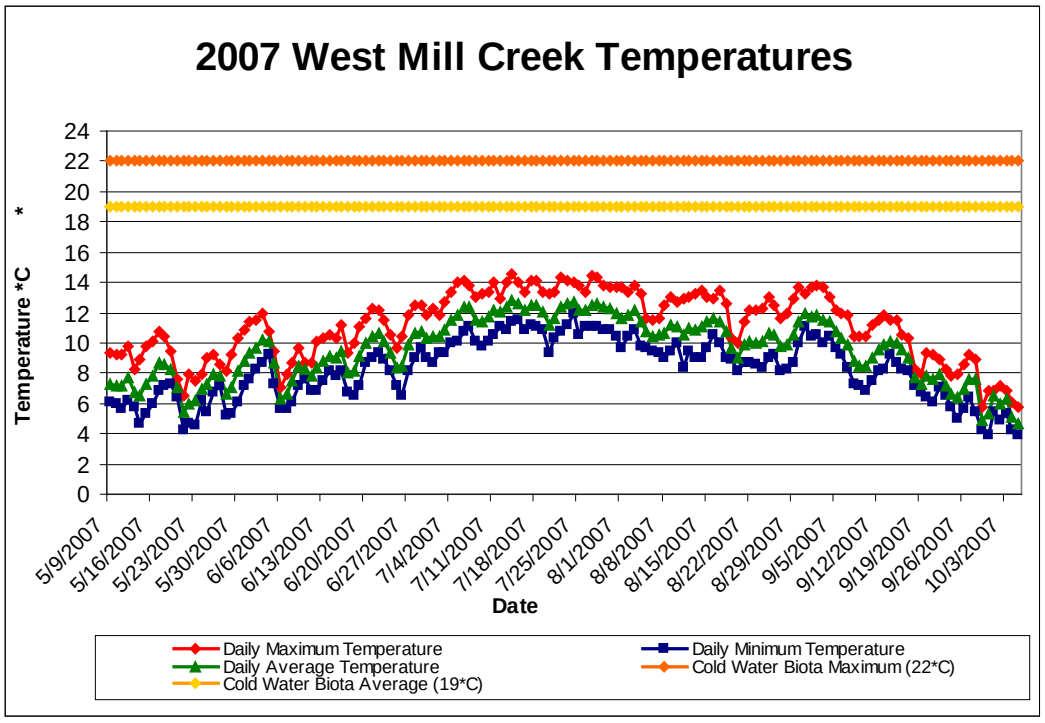


Figure 7. Results of temperature monitoring in West Mill Creek, 2008 (figure should be printed in color).

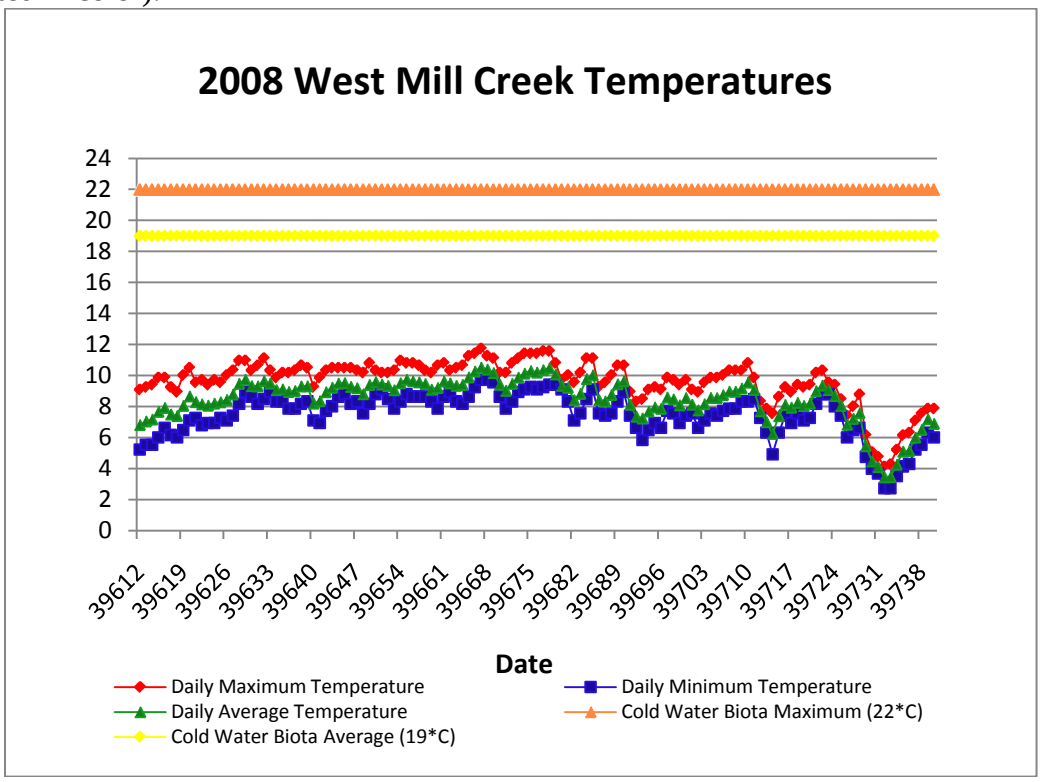
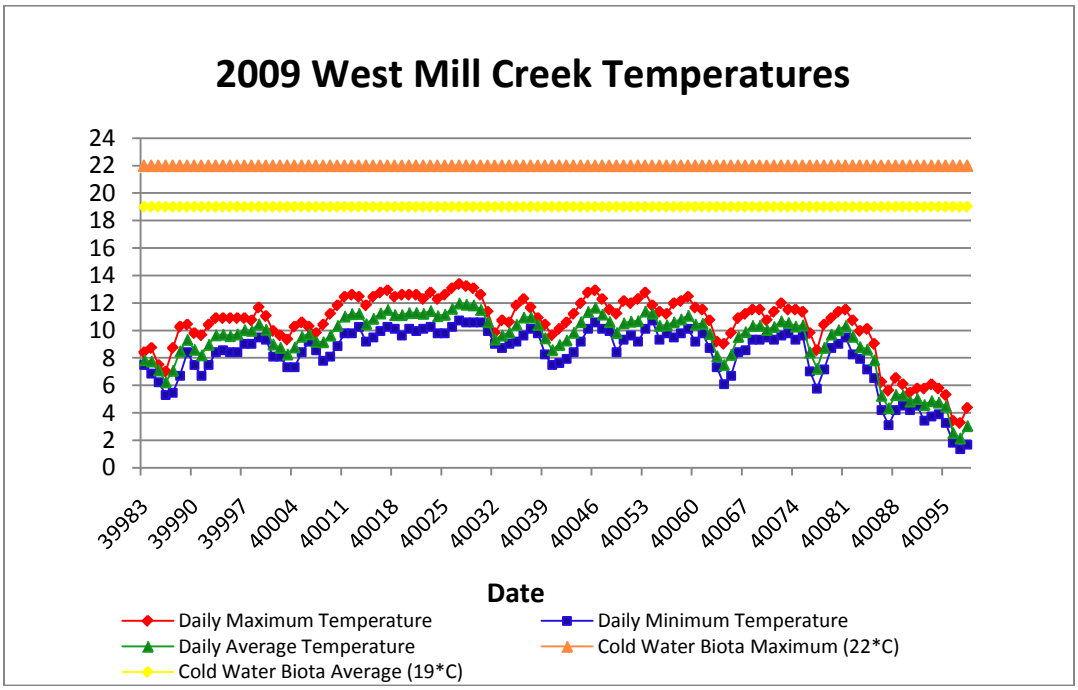


Figure 8. Results of temperature monitoring in West Mill Creek, 2009 (figure should be printed in color).



Discussion:
Slash pile burning did not occur as planned within the Green Hornet Project Area. Many of the slash piles remain unburned as of 2009 (Sites 2-5). The Decision Memo (DM) required snow to be present when piles were burned (to prevent spread). This requirement pushed burning late into the year, creating access problems (snow), difficulty in locating piles and ignition was only marginally effective. Not all of the slash piles have been burned as of 2009, which is evident from the series of photos. Slash piles at site 1 have been burned, others (sites 2-5) remain. Remaining piles will be broadcast burned when logging activities are completed.
Water temperatures did not exceed the cold water biota maximum temperature standard (22º C) at either of the sites in from 2006-2008. Maximum daily temperatures in Mill Creek regularly exceeded the cold water biota average temperature standard (19º C) during the month of July in 2007 and exceeded the cold water biota average temperature standard 2 days in August 2009. The Mill Creek site did not exceed the cold water biota average temperature in 2006 or 2008.
Temperature data were not available for this site prior to the implementation of the project. Based on our results, no conclusions can be drawn regarding stream temperature trends. These data should be considered a baseline and monitoring should continue in the future to determine if there are any long-term temperature trends that may be related to prescribed fire in the RCA.
The West Mill Creek site did not exceed the cold water biota average temperature standard (19º C) from 2006-2009. Bull trout spawning and rearing temperature standards were not included with these analyses. Bull trout have not been documented in Mill Creek or its tributaries.

Recommendations:

- Although the DM outlines monitoring 2 years after treatment is complete, further photos will not likely depict any significant changes to riparian areas until broadcast burning takes place. It is important to continue to monitor the affected areas and complete a final report on this project. It is uncertain if thinning from below, piling and burning is an appropriate method to reduce hazardous fuels without negatively impacting RCAs. A large number of piles were created that, when burned, could cause mortality in overstory trees and detrimental disturbance to the soil. Monitoring is important to determine if this type of RCA management should continue to be implemented.
- If photopoints are established in the future, photos should be taken prior to any activity in the area to better document changes at that site.
- Future temperature monitoring should also be established prior to project implementation.
- Temperature monitoring should also continue in Mill Creek and West Mill Creek to provide stream temperature data for this project and long-term temperature data for the West Zone of the Payette National Forest.

Responsible Individuals:
West Zone Fisheries Biologist and Fisheries Technician

Responsible Official:
Greg Lesch, Council District Ranger

Prepared by:
J. Greenway, Fisheries Technician

Date:
12/17/2009

UPPER BEAR VEGETATION MANAGEMENT PROJECT

MONITORING RESULTS SUMMARY SHEET

Program:
Fisheries

Activity:
Implementation monitoring.

Location:
Upper Bear Creek watershed, Council Ranger District. T21N, R2W, S31, 32, 33, 34 and 35. T20N, R2W S2, 3, 4, 5, 6, 7, 8, 9, 10, 16 and 17.

NOTE: The timber sale portion of the Upper Bear Vegetation Management Project did not occur as planned due to a tornado that moved through the Bear Creek Watershed. The tornado changed the baseline condition of the watershed and created the need for a Modified Upper Bear ROD and the creation and implementation of the Bear Tornado Recovery Project. The timber sale portion of the project was dropped, but 7.7 miles of road decommissioning (1.0 miles in the form of road to livestock trail conversion on Bessie Gulch) and replacement or removal of 5 culverts remained. Two of those culverts were replaced in 2005. Two culverts were removed during road decommissioning in 2007 and one culvert remains near the mouth of Bessie Gulch. Monitoring requirements associated with the Tornado Recovery Project are located in the proceeding section of this document. All new road construction associated with this project was dropped; one-half mile of new road was already completed at the time of the tornado.

Objectives:

1. Determine if and ensure that the project complies with INFISH standards and guidelines (Upper Bear FEIS, page F-10).

2. Ensure culverts replaced provide fish passage (Upper Bear FEIS, page F-10).

Methodology:
Two of five culverts identified in the Upper Bear EIS were replaced in 2005. The two culverts, one on Bessie Gulch (Bear Creek tributary)(FS Road 130) and the other on an unnamed north bank tributary of Bear Creek (FS Road 110) were visited by west zone fisheries personnel on multiple occasions. The Bessie Gulch culvert is located at UTM 0530893 4991965 and the unnamed tributary is located at UTM 0529676 4991815. Culverts were photographed once in November of 2005 after they were installed, in May of 2006 when streams were near bankfull flow and annually since. Photographs were taken at the inlets and outlets of both of the culverts.

In 2007, electrofishing surveys were conducted at both of the aforementioned culverts to determine if fish were using habitat below the culverts or, if any fish were present upstream of the new pipes. One-hundred meters upstream and downstream of each of the

two new culverts were sampled. Sampling was completed again in 2008 in the unnamed north bank tributary of Bear Creek (FS 110).

New road construction was visited in May of 2007 to ensure erosion mitigation measures were implemented and to monitor sediment travel that occurred as spring runoff took place. The area of new road was visited and photographed in 2008 and 2009 as well to document sediment movement after spring runoff each year.

Two culverts on FS Road 983 were removed as part of road decommissioning in 2007. Snorkel surveys were conducted downstream of these two culverts and the fisheries biologist made a post-removal site visit to verify proper erosion mitigation measures were used. Photos were taken at these sites in 2008 and 2009 to document changes in the stream channel and vegetation recovery at the site.

Results:
Photos of the culverts replaced in 2005 are located in Figures 9-39. During spring flows the culverts appeared to provide natural stream simulation. Some down cutting occurred at the inlet of the Bessie Gulch culvert (Figure 25). The stream channel headcut to a grade control created by a LWD jam. The inlet of the culvert has retained a substrate covered bottom, but the depth of substrate was less than when the culvert was placed, especially at the upstream end. The substrate retained in the culvert in 2009 was similar to 2008. All erosion control measures such as straw mats and bales were in place and appeared to be effective. The culvert on the unnamed tributary of Bear Creek (FS 110) appears to provide natural stream simulation under all flow conditions. Under low flow conditions in 2009, the stream channel was split and flowed along the edges of the culvert, but still provided adequate stream simulation. Vegetation has become established at both of the stream crossings.

Electrofishing surveys were conducted upstream and downstream of the two culverts (Bessie Gulch and the unnamed left bank tributary of Bear Creek) in June of 2007. Fish were not captured upstream of either of the culverts. One brook trout was observed downstream of the culvert on the unnamed tributary of Bear Creek. Fish were not observed upstream of or downstream of the new culvert on Bessie Gulch (FS Road 130). Electrofishing surveys were conducted upstream and downstream of the culvert on the unnamed tributary of Bear Creek again in 2008. Fish were not observed during electrofishing surveys in 2008. Electrofishing surveys were not conducted in 2009.

The one-half mile of new road construction (beginning at UTM 0533473 4994142)that occurred as part of the Upper Bear Vegetation Management Project was not visited in 2006, but a site visit was made in May of 2007 after spring runoff had occurred. The new road showed signs of erosion on the northeast end where it connected to an existing road. Water ran down the cut-slope side of the road and then across the road surface and off the downhill side of the road. Sediment was deposited in the riparian area of a small unnamed tributary of Bear Creek. It could not be determined if sediment entered the stream channel. Figure 40 depicts the new road and erosion that took place in the spring of 2007. The new road was visited again in August 2008 and July 2009 (Figures 41 and 42). In 2008, it appeared that less erosion took place during spring runoff than had occurred the previous year. More vehicle traffic had also occurred there. In 2009, there

was little evidence of erosion on the new road surface. Only slight surface erosion took place near the upper end of the road. Runoff appeared to be less than in 2008.

Two culverts on FS Road 983 were removed in 2007 when road decommissioning took place (Figure 43). Approximately 5 meters downstream of each of these culverts was snorkeled to determine if fish were present and may be harassed by culvert removal operations. Fish were not observed at either of these locations. Photos were taken at these 2 locations in 2008 and again in 2009 (Figures 44-49). Both of the reconstructed stream channels provide stream simulation and vegetation has begun to reestablish. One young-of-the-year (YOY) salmonid was observed in the larger of the two streams during the site visit in 2009.

Approximately all of the 7.7 miles of road decommissioning was completed. The road to livestock trail portion in Bessie Gulch was not completed due to the amount of blowdown that was over the road. Extensive chainsaw work will be required to open up a trail along Bessie Gulch. Road decommissioning was visited by the fisheries biologist when culverts were removed on FS Road 983 to ensure that proper channel reconstruction and erosion mitigations were used.

Figure 9. Inlet of the culvert on FS Road 110 (unnamed tributary of Bear Creek), November 18, 2005.

Figure 10. Outlet of the culvert on FS Road 110 (unnamed tributary of Bear Creek), November 18, 2005.

Figure 11. Inlet of the culvert on FS Road 110 (unnamed tributary of Bear Creek) on May 18, 2006.

Figure 12. Outlet of the culvert on FS Road 110 (unnamed tributary of Bear Creek) on May 18, 2006.

Figure 13. Inlet of the culvert on FS Road 110 (unnamed tributary of Bear Creek) on May 8, 2007.

Figure 14. Outlet of the culvert on FS Road 110 (unnamed tributary of Bear Creek) on May 8, 2007.

Figure 15. Inlet of the culvert on FS Road 110 (unnamed tributary of Bear Creek) on May 21, 2008.

Figure 16. Outlet of the culvert on FS Road 110 (unnamed tributary of Bear Creek) on May 21, 2008.

Figure 17. Outlet of the culvert on FS Road 110 (unnamed tributary of Bear Creek) on May 21, 2008.

Figure 18. Inlet of the culvert on FS Road 110 (unnamed tributary of Bear Creek) on August 14, 2008.

Figure 19. Outlet of the culvert on FS Road 110 (unnamed tributary of Bear Creek) on August 14, 2008.

Figure 20. Inlet of the culvert on FS Road 110 (unnamed tributary of Bear Creek) on July 20, 2009.

Figure 21. Outlet of the culvert on FS Road 110 (unnamed tributary of Bear Creek) on July 20, 2009.

Figure 22. Inlet of the Bessie Gulch Culvert on FS Road 130, November 18, 2005.

Figure 23. A view of the inside of the Bessie Gulch Culvert on FS Road 130, November 18, 2005.

Figure 24. Outlet of the Bessie Gulch Culvert on FS Road 130, November 18, 2005.

Figure 25. Inlet of the Bessie Gulch culvert on FS Road 130, May 18, 2006.

Figure 26. Outlet of the Bessie Gulch culvert on FS Road 130, May 18, 2006.

Figure 27. Inlet of the Bessie Gulch Culvert on FS Road 130, May 8, 2007.

Figure 28. Inside of the Bessie Gulch Culvert on FS Road 130, May 8, 2007.

Figure 29. Outlet of the Bessie Gulch Culvert on FS Road 130, May 8, 2007.

Figure 30. Inlet of the Bessie Gulch Culvert on FS Road 130, July 31, 2007.

Figure 31. Inlet of the Bessie Gulch Culvert on FS Road 130, May 21, 2008.

Figure 32. Inlet of the Bessie Gulch Culvert on FS Road 130, May 21, 2008.

Figure 33. Outlet of the Bessie Gulch Culvert on FS Road 130, May 21, 2008.

Figure 34. Outlet of the Bessie Gulch Culvert on FS Road 130, May 21, 2008.

Figure 35. Inlet of the Bessie Gulch Culvert on FS Road 130, August 14, 2008.

Figure 36. Inlet of the Bessie Gulch Culvert on FS Road 130, August 14, 2008.

Figure 37. Outlet of the Bessie Gulch Culvert on FS Road 130, August 14, 2008.

Figure 38. Inlet of the Bessie Gulch Culvert on FS Road 130, July 20, 2009.

Figure 39. Outlet of the Bessie Gulch Culvert on FS Road 130, August 14, 2009.

Figure 40. New road construction in the Upper Bear Vegetation Management Project Area, 2007. Note erosion on left side of picture.

Figure 41. New road construction in the Upper Bear Vegetation Management Project Area, 2008.

Figure 42. New road construction in the Upper Bear Vegetation Management Project Area, 2009.

Figure 43. Culvert removal locations in Upper Bear on FS Road 983.

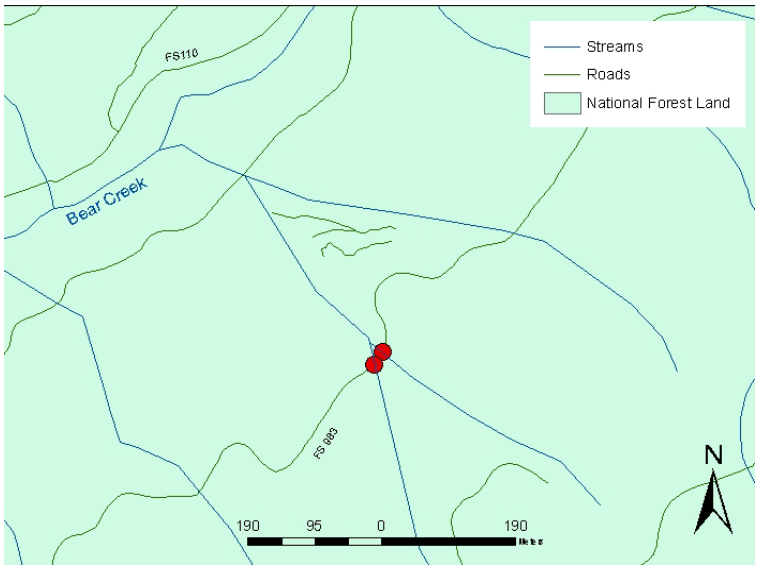


Figure 44. Culvert removal locations in Upper Bear on FS Road 983, 2008. Looking upstream at the northern crossing.

Figure 45. Culvert removal locations in Upper Bear on FS Road 983, 2008. Looking upstream at the southern crossing.

Figure 46. Culvert removal locations in Upper Bear on FS Road 983, 2008. Looking NE on FS 983 at both stream crossings.

Figure 47. Culvert removal locations in Upper Bear on FS Road 983, 2009.

Figure 48. Culvert removal locations in Upper Bear on FS Road 983, 2009.

Figure 49. Culvert removal locations in Upper Bear on FS Road 983, 2009.

Discussion:

Recommendations:

- Visual inspections should continue to ensure that the 2 new culverts retain substrate, are not delivering sediment to streams, and continue to provide fish passage. Photomonitoring may only be necessary if significant changes at one of the stream crossings occur.
- As time and funding allow, Additional fish surveys could also be conducted upstream of the aforementioned culverts to determine if fish are moving into the streams that they were unable to access prior to replacement. Fish surveys should be conducted again on Bessie Gulch

after the lower culvert is replaced. Currently, this culvert is a low priority and funding is not available for replacement.

- As the remaining culvert identified in the Modified Upper Bear ROD is removed or replaced, the fisheries biologist should inspect it to ensure that fish passage and erosion mitigation measures are being met.
- Monitor sediment travel and erosion mitigation measures on decommissioned roads (7.7 mi) identified in the Modified Upper Bear ROD. This should be completed during and for two years after decommission occurs. All road decommissioning was completed in 2009.
- Site visits should be made to the culvert removal locations to document riparian area recovery and ensure that aquatic organism passage is maintained.

Responsible Individuals:
West Zone Fisheries Biologist and Fisheries Technician

Responsible Official:
Greg Lesch, Council District Ranger

Prepared by:
J. Greenway, Fisheries Technician

Date:
12/17/2009

BEAR TORNADO RECOVERY PROJECT
MONITORING RESULTS SUMMARY SHEET

Program:
Fisheries

Activity:
Implementation Monitoring

Location:
Bear Creek Watershed, Council Ranger District. T20N, R3W, S23-28, 34 and 36. T20N, R2W, S1-4, 7-10, 18-21, and 29-30. T21N, R2W, S25, 35 and 36.

Objectives:
1. Provide on-the-ground monitoring of proposed harvest and fuel treatments (Bear Tornado Recovery Project EA, page 2-36)
2. Monitor the effectiveness of RCA treatment design, fish passage at the Wesley Creek and other culvert replacements, and erosion control mitigations.

Methodology:
Qualitative assessments should be made to determine if treatment activities are negatively affecting RCAs and to determine if erosion mitigation measures are implemented and effective. The Bear Recovery Project Decision Notice identifies the use and then decommissioning of 7.6 miles of road. Sediment and erosion monitoring should be completed in the affected areas. Prior to culvert removal, Wesley Creek and multiple unnamed tributaries to Bear Creek on FS Road 130 were snorkeled to determine if bull trout were present and to avoid any adverse effects to bull trout when culvert removal took place. Prior to completion, a site visit by the fisheries biologist will also be scheduled to ensure that the Wesley Creek culvert and additional culverts that are removed provide adequate stream simulation. Snorkel surveys at the Wesley Creek and an unnamed tributary to Bear Creek were conducted in 2008 and 2009 to determine if fish are using stream habitat in and upstream of the culvert removal locations.

Results:
A journey level fish biologist made numerous site visits to the Bear Tornado in 2007 to provide on the ground monitoring of harvest activities and RCA treatments. Due to the short time frame in which the NFMA and NEPA documents were prepared for the timber sale, some RCAs went unmapped and were discovered during harvest activities. Treatment in these areas was determined on a site-specific basis by a journey level fisheries biologist. The results of implementation monitoring were summarized in a separate document by C. Zurstadt, West Zone Fisheries Biologist and are located in Appendix A of this document.

The Wesley Creek culvert proposed for replacement was instead removed, along with nine other culverts on tributaries of Bear Creek along FS Road 130 (Figure 50) (It should be noted that the crossing on Bear Creek is a box culvert with at natural stream bottom; therefore fish passage is not a concern where FS Road 130 crosses Bear Creek). Culvert removal took place in mid-August, 2007. Culvert removal work was approved by the

fisheries biologist after August 15 (approximately the beginning of the bull trout spawning period). Spawning was not observed directly downstream of any of the culverts prior to the beginning of removal work and it was believed that no adverse effects to bull trout spawning would occur as a result of culvert removal. This included Wesley Creek, an unnamed tributary of Wesley Creek and 7 unnamed tributaries of Bear Creek. On July 30 approximately 10 meters downstream of the culverts was snorkeled on Wesley Creek and the 3 largest tributaries of Bear Creek (the ones most likely to contain fish). This was completed prior to culvert removal to determine if bull trout were using stream habitat adjacent to the culverts and to avoid any adverse effects caused by removal. One bull trout was observed in an unnamed tributary of Bear Creek (immediately west of the crossing on mainstem Bear Creek) (Figures 60-64). This fish was using the culvert outlet pool on July 30. A bull trout (assumed to be the same fish observed on July 30), was observed at the outlet of the culvert when work began. Care was taken not to disturb the pool (or the fish) during culvert removal. Fish were not observed near any of the other culverts (including Wesley Creek) that were removed.

Photos were taken of the Wesley Creek and the unnamed tributary crossing in 2008 and 2009 (Figures 51-64). Photos were taken only of the Wesley Creek crossing in 2009. Snorkel surveys were conducted at both of these sites in 2008 and 2009. Fish were not observed either year in Wesley Creek. Bull trout were observed both years in the unnamed tributary of Bear Creek.

Figure 50. Culvert removal locations in Upper Bear on FS Road 130.

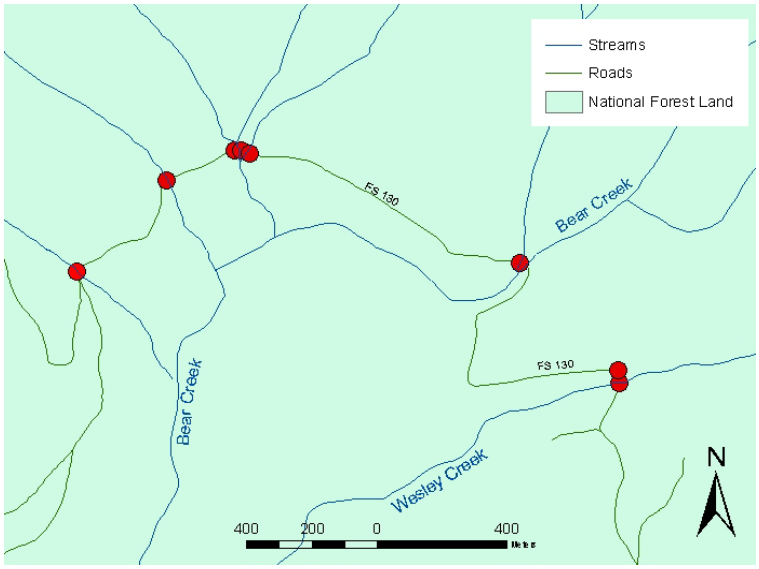


Figure 51. Culvert removal location on Wesley Creek on October 2, 2007. Looking upstream.

Figure 52. Culvert removal location on Wesley Creek on October 2, 2007. Looking downstream.

Figure 53. Culvert removal location on an unnamed tributary of Wesley Creek on October 2, 2007. Looking upstream.

Figure 54. Culvert removal location on Wesley Creek on June 18, 2008. Looking upstream.

Figure 55. Culvert removal location on Wesley Creek on June 18, 2008. Looking downstream.

Figure 56. Culvert removal location on an unnamed tributary of Wesley Creek on June 18, 2008. Looking upstream.

Figure 57. Culvert removal location on Wesley Creek on August 12, 2008. Looking upstream.

Figure 58. Culvert removal location on Wesley Creek on August 12, 2008. Looking downstream.

Figure 59. Culvert removal location on an unnamed tributary of Bear Creek on October 2, 2007. Looking upstream.

Figure 60. Culvert removal location on an unnamed tributary of Bear Creek on October 2, 2007. Looking downstream.

Figure 61. Culvert removal location on an unnamed tributary of Bear Creek on June 18, 2008. Looking downstream.

Figure 62. Culvert removal location on an unnamed tributary of Bear Creek on June 18, 2008. Looking downstream.

Figure 63. Culvert removal location on an unnamed tributary of Bear Creek on August 14 , 2008. Looking downstream.

Figure 64. Culvert removal location on an unnamed tributary of Bear Creek on August 14, 2008. Looking downstream.

Discussion:
The results and discussion of Tornado Recovery implementation monitoring are located in Appendix A. This document describes actions that took place within RCAs in the Tornado area and mitigations for those actions. Photographs also depict areas where treatment activities took place.

Nine culverts were removed on FS Road 130 in 2007 to restore watershed function and aquatic organism passage. Removal of these culverts is covered in the Ongoing BA for road maintenance; therefore separate NEPA documents were not prepared.

Bull trout have been observed in Wesley Creek (2002 data on file at the Council Ranger District), but not within approximately ¼ mile downstream of the culvert. No apparent passage barriers exist between known bull trout distribution and the culvert, making it possible for fish to exist up to the culvert outlet. Removing the culvert, and thus restoring fish passage, should allow fish to access an additional 220 meters of stream habitat upstream of FS Road 130. In 2006 a likely passage barrier was discovered during a stream habitat inventory approximately 220m upstream of FS Road 130. Fish have not been observed upstream of the culvert, but suitable fish habitat exists there. Prior to culvert removal operations, no bull trout (or any other fish) were observed near the outlet of the culvert on Wesley Creek. Fish have not yet been observed near or upstream of the culvert removal location on Wesley Creek.

During a pre-removal snorkel survey, one bull trout was observed in the culvert outlet pool in an unnamed tributary of Bear Creek (immediately west of the 130 Road crossing on Bear Creek). A bull trout (presumably the same fish observed on July 30) was observed by the crew the day culvert removal began. Although this fish was present near the culvert it did not appear to be spawning and there was not a redd present within the culvert outlet pool. Care was taken during culvert removal to not disturb the pool with machinery or other materials placed into the stream. Due to the short duration and intensity of stream turbidity, and lack of physical harm to the fish, it is believed that there were no adverse effects. Bull trout were observed in this stream upstream of the culvert removal location in both 2008 and 2009. It appears that bull trout are using the unnamed tributary both in and upstream of the culvert removal site.

Fish were not observed at any of the other culverts during pre-removal snorkel surveys or at the time removal began in 2007. Fish had not been documented in these streams during previous surveys. These streams are not likely to be fish-bearing based on their size and/or gradient. All of the culverts that were removed along FS Road 130 in 2007 appeared to provide stream simulation and aquatic organism passage. Further surveys have not been completed on these streams.

Recommendations:

- Monitoring should occur as roads are decommissioned to ensure that erosion mitigation measures are implemented and monitoring should occur for three years after implementation.
- Assessments should continue where treatment design may have affected RCAs.
- Fish surveys should be completed in the following years on Wesley Creek and the unnamed tributary of Bear Creek adjacent to Bear Creek to determine if bull trout are using habitat upstream of the former culvert locations. This should be done when the annual MIS surveys are completed.

Responsible Individuals:
West Zone Fisheries Biologist and Fisheries Technician

Responsible Official:
Greg Lesch, Council District Ranger

Prepared by:
J. Greenway, Fisheries Technician

Date:
12/17/2009

LITTLE WEISER LANDSCAPE VEGETATION MANAGEMENT PROJECT

MONITORING RESULTS SUMMARY SHEET

Program:
Fisheries

Activity:
Implementation monitoring.

Location:
Little Weiser River watershed, Council Ranger District.

Objectives:
1. Determine if the project complied with INFISH standards and guidelines.
2. Consultation for bull trout.

Parameters
Buffer widths, fish passage at culverts, road construction mitigation measures, slash disposal, and sediment travel into streams.

Methodology:
At least 20 percent of stream buffers will be measured to ensure compliance with INFISH (Table 5) prior to sale (Little Weiser Landscape Vegetation Management Project FEIS, page F-14). Buffers were measured at their narrowest point using a laser rangefinder or a hip chain. Culvert installations and improvements on fish-bearing streams will be reviewed by a fisheries biologist to verify fish passage and mitigation measures were completed (Little Weiser Landscape Vegetation Management Project FEIS, page F-14). Temporary roads were visited and photographed by a fisheries biologist.

Results:
Data regarding pre-sale buffer measurements were not found in District Files. Buffers on completed units were measured in the Cougar Timber Sale area and the Anderson Creek Timber Sale. The results of buffer monitoring are located in Table 6.

The culvert on Bull Corral Creek, which was identified in the Little Weiser Landscape Vegetation Management Project FEIS was removed when the Sheep Creek Road (FS Road 180) was decommissioned in 2003 (Figure 65 and Figure 66). The culvert on Lost Fork Creek is still in use, and is slated for removal when timber harvest operations are complete. The remaining culverts identified in the FEIS will be removed or replaced as funding becomes available.

Temporary roads in units 207, 214, and 224 were visited and photographed by a fisheries biologist in 2007 (Figures 67-70). These roads have been waterbarred to decrease erosion, but as of 2009, have not yet been decommissioned after timber removal was completed.

Table 5. INFISH Riparian Habitat Conservation Area (RHCA) buffer requirements (Little Weiser Landscape Vegetation Management Project FEIS, 2001).

Stream Classification	RHCA Buffer (feet)
Fishbearing Streams	300’
Non-fishbearing, perennial streams	150’
Non-fishbearing intermittent streams.	100’
Ponds, lakes, reservoirs and wetlands greater than 1 acre.	150’
Seeps, springs, bogs, wetlands and lakes less than 1 acre in size and around landslides and landslide-prone areas	55’

Table 6. Harvest units visited in 2007 to ensure INFISH buffer requirements (table should be printed in color). Measurements highlighted in yellow did not meet the INFISH requirement.

Unit Number	Stream Name	Stream Classification	Measurement In yards* (feet)	INFISH Standard
27	Unnamed tributary of Little Weiser River	Perennial, Non-fishbearing	49 (148)	150’
	Little Weiser River	Perennial, Fishbearing	110 (331’)	300’
34	Little Weiser River	Perennial, Fishbearing	99 (297’)	300’
54	Wolf Creek	Perennial, Fishbearing	103 (309’)	300’
59	Unnamed tributary of Wolf Creek	Perennial, Non-fishbearing	46 (138’)	150’
62	Unnamed tributary of Little Weiser River	Perennial, Non-fishbearing	52 (157’)	150’
156	Anderson Creek	Perennial, Fish-bearing	102 (306’) 110 (330’)	300’
260	Unnamed tributary of Little Weiser River	Perennial, Non-fishbearing	84 (252’)	150’
	Tributary of Unnamed tributary (between units 260 and 541)	Non on map.	44 (132’)	
304	Unnamed tributary of Little Weiser River	Perennial, Non-fishbearing	55 (165’) 60 (180’) 56 (168’)	150’
502	Unnamed tributary of Little Weiser River	Perennial, Non-fishbearing	44 (132’) 46 (138’)	150’
541	Unnamed tributary of Little Weiser River	Perennial, Non-fishbearing	42 (126’)	150’
	Tributary of unnamed tributary (between units 260 and 541)	Not on map.	22 (66’)	

*****Measurements were taken using a Bushnell YARDAGE PRO™ Laser Rangefinder or using a hip chain. The hip chain measured in Meters. Metric measurements were converted to yards and feet for consistency

Figure 65. Culvert removal on Bull Corral Creek. Photograph is looking upstream at the culvert location in October of 2007.

Figure 66. Culvert removal on Bull Corral Creek. Photograph is looking upstream at the culvert location in October of 2007.

Figure 67. Temporary road that accesses Unit 207 in the Anderson Creek Timber Sale.

Figure 68. Channel crossing on a temporary road that accesses Unit 207 in the Anderson Creek Timber Sale.

Figure 69. Temporary road that accesses Unit 214 in the Anderson Creek Timber Sale.

Figure 70. Temporary road within Unit 224 in the Anderson Creek Timber Sale.

Discussion:

Five of the 10 buffers measured in 2007 did not meet the INFISH requirements specified in the Little Weiser Landscape Vegetation Management Project FEIS (Table 8). The buffers on units 27 and 34 were 2' and 3' short of the INFISH requirement respectively. These inconsistencies are small, and may be due to differences in measuring techniques or personnel taking the measurements. The buffer on Unit 59 was measured at 138', which is 12' short of the INFISH requirement of 150'. The buffer on Unit 502 on an unnamed perennial tributary of Little Weiser River was 132' and 138' where measured (INFISH requirement 150'). Although this buffer was narrower than required; the stream was not likely affected by harvest activities or canopy removal. The riparian area was very open with few trees between the unit and the stream. Shading, LWD recruitment and sedimentation were not likely any different than what would have been with the 150' buffer. The buffer on Unit 541 along an unnamed tributary of Little Weiser River was measured at 126'. This is 24' short of the 150' buffer required by INFISH. It was not apparent whether this narrow buffer will have a negative impact on the riparian area. A small stream was discovered between units 260 and 541. This stream was buffered 132' on the north side (Unit 260) and 66' on the south side (Unit 541). The stream was not depicted on the sale maps. It appeared that the stream is perennial, but not fish bearing, which would require a 150' buffer. It is unknown if this buffer was reviewed by a fishery biologist or hydrologist when it was marked during the layout phase of the project.

The culvert removal location on Bull Corral Creek was providing appropriate stream simulation (Figure 66 and Figure 67). Vegetation is re-establishing on the banks and the stream gradient appeared to be consistent with that reach of Bull Corral Creek. The culverts associated with this project have not yet been replaced. When funding becomes available for replacement, a fisheries biologist should ensure that new culverts provide stream simulation.

Temporary roads associated with units 207, 214 and 224 have not yet been decommissioned as part of the timber sale. These roads have been waterbarred, but full decommissioning was required in the contract. The road to unit 207 crosses a small channel (without a culvert), which will likely erode during spring runoff. The fisheries biologist and/or hydrologist should ensure that these roads are decommissioned when funding and/or equipment become available.

Recommendations:

- As culverts are removed or replaced, they should examined by a fisheries biologist to verify fish passage and/or stream simulation.
- More attention should be given to ensuring that RHCA buffers are accurately marked and streams are classified appropriately during the planning stages of a project. Fisheries and/or hydrology personnel should ensure buffers are measured marked appropriately prior to harvest activities.
- Ensure that the temporary roads associated with units 207, 214 and 224 are decommissioned as specified in the contract. This should be completed as soon as funding becomes available.

Responsible Individuals:
West Zone Fisheries Biologist and Fisheries Technician

Responsible Official:
Greg Lesch, Council District Ranger

Prepared by:
J. Greenway, Fisheries Technician

Date:
12/17/2009

LITTLE WEISER LANDSCAPE VEGETATION MANAGEMENT PROJECT

MONITORING RESULTS SUMMARY SHEET

Program:
Fisheries

Activity:
Trend Monitoring.

Location:
Little Weiser River watershed, Council Ranger District.

Objective:
Determine if brook trout (*Salvelinus fontinalis*) are expanding their range into the Anderson Creek watershed (Little Weiser Landscape Vegetation Management Project FEIS, page F-14).

Methodology:
Eleven, 100m sites have been snorkeled annually since 1999 to monitor brook trout distribution in Little Weiser River, Anderson Creek, and Sheep Creek. These sites are snorkeled during the day by one or two divers depending on stream width. Species observed and estimated size class is recorded.

Results:
The results of annual brook trout monitoring are located in Tables 7-10. These data are also reported in Greenway 2009. Detailed yearly brook trout monitoring results are available in annual biological sampling reports on file at the Council Ranger District and the Supervisor Office in McCall.

Table 7. Summary of results for brook trout monitoring sites in Little Weiser River, Anderson Creek, and Sheep Creek 2006.

Stream Name	Site	Date	Bull Trout	Brook Trout	Redband Trout	Hybrid	Other (#)
Little Weiser River	1	7/18	0	1	22	0	D(1)
Little Weiser River	2	7/18	0	0	81	0	B(2)
Little Weiser River	3	7/19	0	0	27	0	0
Little Weiser River	4	7/19	0	0	56	0	0
Anderson Creek	5	7/19	0	0	55	0	0
Anderson Creek	6	7/25	0	0	78	0	0
Anderson Creek	7	7/19	0	0	60	0	0
Anderson Creek	8	7/25	0	0	62	0	A(2)
Anderson Creek	9	7/24	1	0	71	0	A(1)
Sheep Creek	10	7/25	3	0	31	0	A(2)
Sheep Creek	11	7/25	6	0	64	0	0
Totals			10	1	607	0	8

These observations were made in addition to listed data for specified sites:
A: Tailed frog tadpole or adult
B: Sculpin spp.
C: Mountain whitefish (*Prosopium williamsoni*)
D. Unidentified fish
E. YOY

Table 8. Summary of results for brook trout monitoring sites in Little Weiser River, Anderson Creek, and Sheep Creek 2007 (excludes results from PNF MIS monitoring).

Stream Name	Site	Date	Bull Trout	Brook Trout	Redband Trout	Hybrid	Other (#)
Little Weiser River	1	08/07	0	0	15	0	D(1)
Little Weiser River	2	08/07	0	0	26	0	D(1)
Little Weiser River	3	08/07	0	0	4	0	E (1)
Little Weiser River	4	08/07	0	0	13	0	E(10)
Anderson Creek	5	08/07	0	0	7	0	B(1)
Anderson Creek	6	08/08	0	0	54	0	B(1), D(2)
Anderson Creek	7	08/07	2	0	90	0	D(1), E(17)
Anderson Creek	8	08/08	1	0	39	0	0
Anderson Creek	9	08/08	2	0	56	0	E(8)
Sheep Creek	10	08/08	1	0	20	0	E(2)
Sheep Creek	11	08/01	26	1	57	0	D*(1)
Totals			32	1	381	0+	

*Potential brook trout.

These observations were made in addition to listed data for specified sites:

A: Tailed frog tadpole or adult
B: Sculpin spp.
C: Mountain whitefish (*Prosopium williamsoni*)
D. Unidentified fish
E. YOY

Table 9. Summary of results for brook trout monitoring sites in Little Weiser River, Anderson Creek, and Sheep Creek 2008 (excludes results from PNF MIS monitoring).

Stream Name	Site	Date	Bull Trout	Brook Trout	Redband Trout	Hybrid	Other (#)
Little Weiser River	1	07/24	0	1	23	0	0
Little Weiser River	2	07/24	0	0	44	0	0
Little Weiser River	3	07/23	0	2	54	0	B(1)
Little Weiser River	4	07/23	0	0	74	0	0
Anderson Creek	5	07/24	0	0	64	0	0
Anderson Creek	6	07/24	0	0	112	0	B(1)
Anderson Creek	7	07/29	1	0	52	0	B(1)
Anderson Creek	8	07/29	0	0	42	0	0
Anderson Creek	9	07/29	1	0	75	0	B(1)
Sheep Creek	10	07/29	8	0	24	0	A(2), D(1)
Sheep Creek	11	07/30	2	0	24	0	0
Totals			12	3	588	0	

These observations were made in addition to listed data for specified sites:

A: Tailed frog tadpole or adult
B: Sculpin spp.
C: Mountain whitefish (*Prosopium williamsoni*)
D. Unidentified fish
E. YOY

Table 10. Summary of results for brook trout monitoring sites in Little Weiser River, Anderson Creek, and Sheep Creek 2009 (excludes results from PNF MIS monitoring).

Stream Name	Site	Date	Bull Trout	Brook Trout	Redband Trout	Hybrid	Other (#)
Little Weiser River	1	08/18	0	0	11	0	B(2), E(13)
Little Weiser River	2	08/18	0	0	36	0	B(1), E(4)
Little Weiser River	3	08/18	0	1	4	0	0
Little Weiser River	4	08/19	0	0	70	1	E(2)
Anderson Creek	5	08/18	0	1	30	0	B(2)
Anderson Creek	6	08/19	1	0	135	0	E(6)
Anderson Creek	7	08/13	0	0	81	0	B(5), E(1), A(1)
Anderson Creek	8	08/13	1	0	64	0	A(1), B(2), E(9)
Anderson Creek	9	08/14	21	0	163	0	0
Sheep Creek	10	08/13	11	0	41	0	B(1), D(1)
Sheep Creek	11	08/10	12	0	25	0	(A)
Totals			46	2	660	1	

These observations were made in addition to listed data for specified sites:
A: Tailed frog tadpole or adult
B: Sculpin spp.
C: Mountain whitefish (*Prosopium williamsoni*)
D. Unidentified fish
E. YOY

Discussion:

Brook trout have been documented in the Little Weiser River above Wolf Creek. In 2000 and 2003 brook trout were observed in Anderson Creek, upstream of the confluence with the Little Weiser River. In 2007, a brook trout was observed near the mouth of Sheep Creek. In 2008, one brook trout was observed in Little Weiser River downstream of the mouth of Anderson Creek and two additional brook trout were observed in Little Weiser River immediately upstream of the mouth of Anderson Creek. In 2009, one brook trout was observed in Little Weiser River near the mouth of Anderson Creek and one brook trout was observed in Anderson Creek near its mouth.

Results of monitoring at these snorkel sites indicate that brook trout are not expanding their range into Anderson Creek at a rate that is detectable by these surveys. Although brook trout observations since 1999 have been few, brook trout invasion into bull trout habitat in Anderson and Sheep Creeks is a serious concern due to hybridization potential. Additional information regarding these snorkel sites can be referenced in (Greenway and Zurstadt, 2006 and Greenway 2008 and 2009).

An additional site on Sheep Creek was added downstream of Sheep Creek Meadow as recommended in the 2007 Monitoring report. Bull trout was the only species observed there.

Recommendations:

- Although brook trout monitoring was only required through 2006, consideration should be given to provide longer term trend data for brook trout expansion, as well as data for bull trout and redband trout populations and distribution.

Responsible Individuals:

West Zone Fisheries Biologist and Fisheries Technician

Responsible Official:

Greg Lesch Council District Ranger

Prepared by:
J. Greenway, Fisheries Technician

Date:
12/17/2009

LITTLE WEISER LANDSCAPE VEGETATION MANAGEMENT PROJECT

MONITORING RESULTS SUMMARY SHEET

Program:
Fisheries.

Activity:
Effectiveness monitoring.

Location:
Little Weiser River watershed, Council Ranger District.

Objectives:
Determine if groundwater affect stream water temperature and that are within four RHCA widths of timber harvest units, new road construction, or heavy road construction (Little Weiser Landscape Vegetation Management Project FEIS, page F-16)

Methodology:
Thermographs would be deployed set to record at 1 hour, 30 minute intervals at any sites that meet the criteria above, beginning early enough to capture the warmest 7-day period prior to August 15 and extending through September 30 (Little Weiser Landscape Vegetation Management Project FEIS, page F-16).

Results:
Groundwater influenced stream temperature monitoring was not completed in or prior to 2006. This type of monitoring will not be conducted in the future as there is no reasonable methodology to complete this type of monitoring. Temperature monitoring is however, conducted at eight sites throughout the Little Weiser Watershed for grazing and Management Indicator Species (MIS) monitoring. Results of temperature monitoring throughout the Little Weiser Watershed are available on file at the Council Ranger District and in Nelson and Burns 2006.

Discussion and Recommendations:
It was determined by the Zone Fisheries Biologist and Fisheries technician that locating groundwater inflow that satisfies the parameters listed above would be nearly impossible to conduct in the field. It is recommended that this type of monitoring should not be listed as an objective in future documents.

This issue should be discussed with USFWS during project status reporting which will occur in 2010.

Responsible Individuals:
West Zone Fisheries Biologist and Fisheries Technician

Responsible Official:
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Prepared by:
J. Greenway, Fisheries Technician

Date:
12/17/2009

LITTLE WEISER LANDSCAPE VEGETATION MANAGEMENT PROJECT

MONITORING RESULTS SUMMARY SHEET

Program:
Fisheries

Activity:
Effectiveness Monitoring.

Location:
Little Weiser River Watershed, Council Ranger District.

Objectives:
Determine pre and post-activity habitat conditions. These conditions include water temperature, large woody debris, and sediment.

Methodology:
Stream temperatures are to be measured using temperature loggers.

Data regarding large woody debris (LWD) and sediment will be collected using current Payette National Forest stream survey protocol 5 years after ground disturbing activities are complete (at least year 2012) (Little Weiser Landscape Vegetation Management Project FEIS). As of 2009, logging was complete, but road decommissioning was not.

Results:
Stream temperature data is collected at 8 sites in the Little Weiser River Watershed. Three of these are either within or have the potential to be influenced by this project. Previous year's data from these locations is available on file at the Council Ranger District. Thermographs deployed specifically for this project have not been deployed.

Large woody debris and sediment data have not yet been collected. The FEIS directs collection of these data for 5 years after the completion of ground disturbing activities. Data collection will not occur until at least 2012. A Payette National Forest Stream Inventory Monitoring Protocol integrator site was set up in Little Weiser in 2009.

Discussion and Recommendations:

- The temperature data collected at the 8 sites in the Little Weiser River watershed are located on file at the Council Ranger District and the Supervisors Office in McCall. See Nelson and Burns (2006) for a summary of temperature trends on the Forest. These sites are primarily associated with grazing and MIS monitoring, not necessarily this project.
- Install additional thermographs throughout the project area if additional data are required.
- Ensure that LWD and sediment monitoring occurs 5 years after the ground disturbing aspects of the project have been completed.

Responsible Individuals:
West Zone Fisheries Biologist and Fisheries Technician

Responsible Official:
Greg Lesch, Council District Ranger

Prepared by:
J. Greenway, Fisheries Technician

Date:
12/17/2009

MANN CREEK VEGETATION MANAGEMENT AND WATERSHED RESTORATION PROJECT

MONITORING RESULTS SUMMARY SHEET

Program:
Fisheries.

Activity:
Implementation monitoring of timber sale activities that could affect fish habitat.

Location:
Mann Creek watershed, Weiser Ranger District.

Objectives:
Determine if and ensure the project complied with INFISH standards and guidelines.

Methodology:
At least 20 percent of stream buffers should be measured prior to the timber sale being sold (Mann Creek Vegetation Management and Watershed Restoration FEIS). Buffers were measured at their narrowest point using a laser rangefinder.

A fisheries biologist was to review all culvert installations and improvements for fish passage and mitigation measures on fishbearing streams prior to the contractor being released.

Results:
Nine harvest units were visited in 2007 to ensure that the RHCA buffers complied with INFISH standards and guidelines (Table 11). The resulting measurements are located in Table 12.

The culvert replaced on Adams Creek was visited in the fall of 2006 and again in the spring of 2007 (UTM 050005 4929516)(Figures 71-77). This culvert was replaced with an oversized pipe partially filled with substrate to provide fish passage. When visited in 2007, the substrate in the culvert was creating a low gradient riffle throughout. Two fish were (~100mm and ~60mm) observed immediately upstream of the culvert and one fish (~80mm) was observed inside of the inlet of the culvert. The culvert retained substrate in 2008 and 2009. Low gradient riffle remains throughout the culvert providing fish passage at the site. There was no noticeable erosion in the stream channel or in the fill around the culvert.

The culvert on Stacy Creek was visited in the spring of 2007 (UTM 0500816 4930602). Figures 78-83 depict the condition of the culvert. Substrate was present through approximately 95% of the culvert, creating a high gradient riffle throughout. The substrate was washed out of the culvert near the inlet, but should refill as erosion upstream of the culvert takes place. It appeared that the new culvert provides adequate fish passage. Two small fish were observed in Stacey Creek ½ to ¾ of a mile upstream of the culvert. When visited in 2008, the condition of the culvert was similar to that

observed in 2007. There was some scour of substrate in the inlet of the culvert due to the alignment of the stream channel to the culvert. Conditions appeared the same in 2009; approximately 2' at the culvert inlet did not contain substrate due to the alignment of the stream channel with the culvert. The culvert still provides fish passage throughout.

The culvert on Fourth of July Creek was visited in the spring of 2007(UTM 0499317 4935749) (Figures 84-92). The culvert was steep and the flow was fast. The culvert did not contain any substrate and did not appear to provide fish passage. Numerous fish (150-200mm) were observed in the pool at the culvert's outlet (Figure 86), but none were observed upstream. Similar results were observed in 2008 and again in 2009. The lower ½ of the culvert provides pool habitat, but the remainder of the culvert is steep and shallow with no substrate present, providing no stream simulation. This culvert is likely a fish passage barrier and it is not expected that conditions will improve over time. Further monitoring at this culvert is not recommended.

An undersized culvert on Barton Gulch (Fourth of July Creek tributary) was encountered during monitoring in 2007(UTM 0499111 4934368) (Figures 93-100). Although this road was not used in the timber sale and monitoring at this culvert was not required, it was noted due to its bent inlet and inadequate size for high flows. An old road on the left bank had also captured the stream at some time, eroding a deep (>3') gully. This road had since been re-contoured and obliterated. Observations were made at this culvert in 2008 and 2009 as well.

Table 11. INFISH Riparian Habitat Conservation Area (RHCA) buffer requirements (Mann Creek Vegetation Management and Watershed Restoration Project FEIS, 2002)

Stream Classification	RHCA Buffer (feet)
Fishbearing Streams	300'
Non-fishbearing, perennial streams	150'
Non-fishbearing intermittent streams, wetlands less than 1 acre, landslides and landslide prone areas.	50'
Ponds, lakes, reservoirs and wetlands greater than 1 acre.	150'
Seeps, springs, bogs, wetlands and lakes less than 1 acre in size and around landslides and landslide-prone areas	50'

Table 12. Harvest units visited in 2007 to ensure INFISH buffer requirements (table should be printed in color). Buffer measurements that did not meet INFISH standards are highlighted in yellow.

Unit Number	Stream Name	Stream Classification	Measurement In Yards*	INFISH Standard
2	Intermittent tributary of Adams Creek	Intermittent Non-fishbearing	85 (255') 67 (201')	50'
5	Intermittent tributary of Adams Creek	Intermittent Non-fishbearing	88 (264') 50 (150')	50'
10	Adams Creek	Perennial Fishbearing	110 (330') at 2 locations	300'
32	Bear Creek	Perennial Fishbearing	118 (354')	300'
	Unnamed tributary of Bear Creek	Perennial Fishbearing	82 (246') 94 (282')	300'
33	Bear Creek	Perennial Fishbearing	103 (309')	300'
	Unnamed tributary of Bear Creek	Perennial Fishbearing	111 (333')	150'
34	Bear Creek	Perennial Fishbearing	112 (336')	300'
	Unnamed tributary of Bear Creek	Intermittent Non-fishbearing	26 (78')	50'
	Unnamed tributary of Bear Creek	Intermittent Non-fishbearing	26 (78')	50'
35	Fourth of July Creek	Perennial Fishbearing	95 (285')	300'
36	Fourth of July Creek	Perennial Fishbearing	96 (288')	300'
40	Unnamed tributary of Adams Creek	Intermittent Non-fishbearing	18 (54') 22 (66')	50'

*All measurements were taken using a Bushnell YARDAGE PRO™ Laser Rangefinder.

Figure 71. Culvert replaced on Adams Creek to allow fish passage. Photograph is looking downstream at the inlet of the culvert in the fall of 2006.

Figure 72. Culvert replaced on Adams Creek. Photograph is looking downstream at the inlet of the culvert in the spring of 2007.

Figure 73. Culvert replaced on Adams Creek. Photograph is looking upstream at the outlet of the culvert in the spring of 2007.

Figure 74. Culvert replaced on Adams Creek. Photograph is looking downstream at the inlet of the culvert in July 2008.

Figure 75. Culvert replaced on Adams Creek. Photograph is looking upstream at the outlet of the culvert in July 2008.

Figure 76. Culvert replaced on Adams Creek. Photograph is looking downstream at the inlet of the culvert in June 2009.

Figure 77. Culvert replaced on Adams Creek. Photograph is looking upstream at the outlet of the culvert in June 2009.

Figure 78. Culvert replaced on Stacey Creek. Photograph is looking downstream at the inlet of the culvert in the spring of 2007.

Figure 79. Culvert replaced on Stacey Creek. Photograph is looking upstream at the outlet of the culvert in the spring of 2007.

Figure 80. Culvert replaced on Stacey Creek. Photograph is looking downstream at the inlet of the culvert in the spring of 2008.

Figure 81. Culvert replaced on Stacey Creek. Photograph is looking upstream at the outlet of the culvert in the spring of 2008.

Figure 82. Culvert replaced on Stacey Creek. Photograph is looking downstream at the inlet of the culvert in the spring of 2009.

Figure 83. Culvert replaced on Stacey Creek. Photograph is looking upstream at the outlet of the culvert in the spring of 2009.

Figure 84. Culvert replaced on Fourth of July Creek. Photograph is looking downstream at the inlet of the culvert in the spring of 2007.

Figure 85. Culvert replaced on Fourth of July Creek. Photograph is looking upstream at the outlet from the left bank.

Figure 86. Culvert outlet on Fourth of July Creek. Photograph is looking at outlet pool where numerous fish were observed in 2007.

Figure 87. Culvert replaced on Fourth of July Creek. Photograph is looking downstream at the inlet of the culvert in July 2008.

Figure 88. Culvert replaced on Fourth of July Creek. Photograph is looking upstream at the outlet from the left bank in July 2008.

Figure 89. Culvert outlet on Fourth of July Creek. Photograph is looking at outlet pool where numerous fish were observed in July of 2008.

Figure 90. Culvert replaced on Fourth of July Creek. Photograph is looking downstream at the inlet of the culvert in June 2009.

Figure 91. Culvert replaced on Fourth of July Creek. Photograph is looking upstream at the outlet from the left bank in June 2009.

Figure 92. Culvert outlet on Fourth of July Creek. Photograph is looking at outlet pool in June 2009.

Figure 93. Culvert on Barton Gulch, looking downstream at the inlet in the spring of 2007.

Figure 94. Culvert on Barton Gulch, looking at the bent inlet in the spring of 2007.

Figure 95. Culvert on Barton Gulch, looking upstream at the outlet in the spring of 2007.

Figure 96. Culvert on Barton Gulch, looking downstream at the inlet in the spring of 2008.

Figure 97. Culvert on Barton Gulch, looking at the bent inlet in the spring of 2008.

Figure 98. Culvert on Barton Gulch, looking upstream at the outlet in the spring of 2008.

Figure 99. Culvert on Barton Gulch, looking downstream at the inlet in the spring of 2009.

Figure100. Culvert on Barton Gulch, looking upstream at the outlet in the spring of 2009.

Discussion:
Three of the 13 buffers measured in the project area did not meet the INFISH standard for the classification of the stream. Buffers on units 35 and 36 were only 15' and 12' short respectively. This could be explained by differing measurement tools or inconsistencies between personnel measuring the buffer. Buffers were also measured at their narrowest point. The majority of the buffer was likely wider than the distance measured. The stream and riparian areas adjacent to both of these units are not likely to be affected by activities within the unit, regardless of the narrow buffers. The buffers as marked are significantly wider than one site-potential tree height and it appears that the units are of adequate distance from the stream that any reduction in shade, large woody debris recruitment, increased sedimentation or other effects of timber harvest would be undetectable. The buffer in unit 32 along an unnamed tributary of Unit 32 did not meet the INFISH requirements. It was measured 18' and 54' short at the two places where measured. This seems to be too large of a difference to be explained by inconsistencies between rangefinders or other measuring devices. Although the buffers are narrower than the requirements, the unnamed tributary of Bear Creek may not be significantly affected by harvest activities. The buffers (as marked) are wider than a site-potential tree height and large woody debris recruitment and shading would not likely be affected.

The culvert replaced on Adams Creek had retained substrate and was low gradient riffle habitat throughout when photographed. Fish were observed using riffle habitat inside the culvert when visited in 2007. The conditions inside the culvert appeared similar when photos were taken in 2008 and 2009. Unless significant changes take place, further monitoring is not necessary.

Some of the substrate at the inlet of the Stacey Creek culvert had moved downstream in 2008 due to the alignment of the culvert with the stream channel. The alignment has caused some lateral scouring within the pipe, removing some of the substrate. Some sloughing has also occurred on the left bank where the wetted channel approaches the culvert. Conditions within the pipe still provide fish passage and little change was

observed from 2008 to 2009, further monitoring at this site is not necessary unless significant changes take place.

The culvert replaced on Fourth of July Creek did not appear to provide fish passage. Numerous fish were in the outlet pool of the culvert and none were observed in pool upstream of the culvert. The fish appeared to be redband trout and were likely attempting to move upstream to spawn. The gradient of the stream appears to be steep enough that providing fish passage with a closed-bottom culvert would be difficult, but a open-bottom arch may not be feasible in that location. Fish passage has not improved in the culvert on Fourth of July Creek.

Although the culvert at Barton Gulch was not replaced as part of the Mann Creek Vegetation Management and Watershed Restoration Project, consideration should be given to replace this culvert. It appears to be undersized and there is damage to the inlet, further reducing its capacity.

Recommendations:

- Visual inspections should continue to ensure that the new culverts retain substrate, are not delivering sediment to streams, and continue to provide fish passage. Photomonitoring may only be necessary if significant changes at one of the stream crossings occur.

- The culvert at Barton Gulch should be replaced. Although the stream is not likely to be fish bearing, it is not large enough to handle high flows and the road crossing may fail during a high water event.

- Fisheries and/or hydrology personnel should ensure buffers are measured and marked appropriately prior to harvest activities.

Responsible Individuals:
West Zone Fisheries Biologist and Fisheries Technician

Responsible Official:
Weiser District Ranger

Prepared by:
J. Greenway, Fisheries Technician

Date:
12/17/2009

BROWNLEE-SEID CREEK IMPROVEMENT THIN

MONITORING RESULTS SUMMARY SHEET

*****This project was implemented in 2009*****

Program:
Fisheries.

Activity:
Implementation monitoring.

Location:
East Brownlee Creek and Pine Creek Watersheds, Weiser Ranger District.

Objectives:
1. Maintain existing fish habitat.
2. Prevent accidental fuel spills in RCAs.

Methodology:
The fisheries biologist and sale administrator should ensure that fuel storage and refueling is not authorized in RCAs. The biologist should also ensure that large woody debris felled in RCAs outside of units is retained and that new roads and landings are located outside of RCAs whenever possible. This monitoring should be accomplished by site visits to the project area while the project is active (Brownlee-Seid Creek Improvement Thin EA).

Results:
Two culverts have been removed as part of this project in 2006. One was located on Little Pine Creek (Figures 101-106) and one a tributary of Little Pine Creek (Figures107-110). The road connecting the two culverts was also decommissioned. The site was photographed in 2007, 2008 and 2009.

Fish sampling occurred where the barrier culverts were removed by the fishery biologist and the YCC crew in 2007. Nine redband trout, two tailed frog adults and at least 3 tailed frog larvae were captured downstream of the road obliteration on Little Pine Creek. One redband trout was captured upstream of the culvert removal location on Little Pine Creek. It is believed that the fish moved there from downstream after the culvert was removed. One redband trout was captured downstream of the culvert removal location on the unnamed tributary of Little Pine Creek. Fish were not captured upstream of the culvert location on the unnamed tributary. Electrofishing was conducted again in 2008 on Little Pine Creek and the unnamed tributary. Redband trout were captured throughout the obliteration area on both streams. Based on the electrofishing results, it appears that fish are moving through both of the culvert removal locations. Electrofishing was not conducted in 2009.

A livestock exclosure fence was constructed in 2007 around the two culvert removals to prevent livestock from disturbing the streambanks and re-contoured road while vegetation re-establishes. This fence has been put up annually by fisheries personnel.

The Brownlee-Seid Creek Improvement thin was implemented in 2009. Any trees felled within RCA's outside of units were retained within the RCA. There were not any re-fueling or fuel storage problems within RCAs during implementation of this project.

Figure 101. Culvert removal on Little Pine Creek. Photograph is looking upstream at the culvert location in May of 2007.

Figure 102. Culvert removal on Little Pine Creek. Photograph is looking upstream at the culvert location in May of 2007.

Figure 103. Culvert removal on Little Pine Creek. Photograph is looking upstream at the culvert location in May of 2008.

Figure 104. Culvert removal on Little Pine Creek. Photograph is looking upstream at the culvert location in May of 2008.

Figure 105. Culvert removal on Little Pine Creek. Photograph is looking upstream at the culvert location in August of 2009.

Figure 106. Culvert removal on Little Pine Creek. Photograph is looking upstream at the culvert location in August of 2009.

Figure 107. Culvert removal on an unnamed tributary of Little Pine Creek. Photograph is looking upstream at the culvert location in May of 2007.

Figure 108. Culvert removal on an unnamed tributary of Little Pine Creek. Photograph is looking upstream at the culvert location in May of 2007.

Figure 109. Culvert removal on an unnamed tributary of Little Pine Creek. Photograph is looking upstream at the culvert location in May of 2008.

Figure 110. Culvert removal on an unnamed tributary of Little Pine Creek. Photograph is looking upstream at the culvert location in August of 2009.

Discussion:
The culvert removal locations have been visited and photographed annually by fisheries personnel since 2007 (Figures 101-110). The culvert removal locations and the road decommissioning associated with culvert removal were fenced by the YCC crew in June of 2007 to exclude cattle use while vegetation re-establishes. Fish surveys were conducted in 2007 and again in 2008. It appears that fish are moving through both of the culvert removal locations based on fish captures in both of the streams. Additional fish sampling data can be referenced in Greenway (2008).

Recommendations:

- Schedule site visits to photograph the culvert removal locations and ensure that the exclosure fences receive any needed maintenance.

Responsible Individuals:
West Zone Fisheries Biologist and Fisheries Technician

Responsible Official:
Weiser District Ranger

Prepared by:
J. Greenway, Fisheries Technician

Date:
12/17/2009

LICK CREEK VEGETATION MAN AGEMENT PROJECT

MONITORING RESULTS SUMMARY SHEET

*****As of 2009, no harvest activities have occurred*****

Program:
Fisheries

Activity:
Effectiveness Monitoring

Location:
Lick Creek Watershed, Council Ranger District.

Objectives:
Determine if stream buffers were effective in mitigating erosion to stream channels and effectiveness of buffers on landings within RCAs (Lick Creek Vegetation Management Project EA). Monitoring is to be completed before, during and three years after harvest.

*****Ensure that the Fawn Creek culvert replaced in 2009 provides stream simulation and aquatic organism passage.***

Methodology:
Photographs, visual evaluation and professional judgment (EA).

Results:
Pre-harvest monitoring was conducted in 2007. A walk-through of the buffers on units 2, 12, 32, 34, and 36 was completed and photographs were taken in areas that were representative of the area. Surface erosion was observed during monitoring, but was associated with roads within the buffers or around harvest units. Surface erosion within unroaded portions of buffers was not observed. The most evident erosion was on the north side of Unit 12 on the Fawn Creek Road. Investigations of landings will not occur until the project becomes active. Figures 111-116 are representative photos of buffers in the aforementioned units. Additional photos are on file at the Council Ranger District.

Figures 118-121 depict the culvert replacement that occurred on Fawn Creek in 2009. This culvert was inspected by the fisheries biologist during installation to ensure aquatic organism passage concerns were met.

Figure 111. Representative photograph of the RCA buffer on Unit 2, looking downslope.

Figure 112. Representative photograph of the RCA buffer on Unit 12, looking downslope.

Figure 113. Representative photograph of the RCA buffer on Unit 12, looking at evidence of erosion on the Fawn Creek Road.

Figure 114. Representative photograph of the RCA buffer on Unit 32, looking downslope.

Figure 115. Representative photograph of the RCA buffer on Unit 34, looking downslope.

Figure 116. Representative photograph of the RCA buffer on Unit 36, looking downslope.

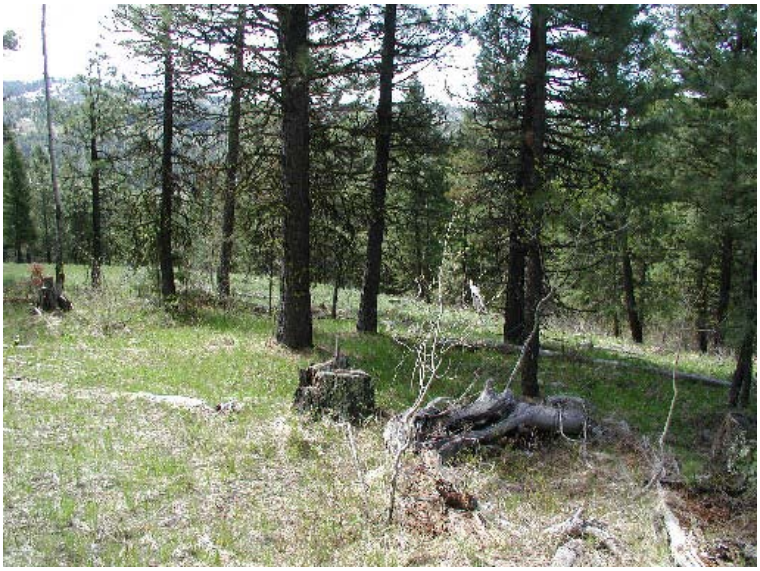

Figure 117. Culvert on FS Road at the Fawn Creek Crossing, looking at the inlet prior to replacement on July 20, 2009.

Figure 118. Culvert on FS Road at the Fawn Creek Crossing, looking at the outlet prior to replacement on July 20, 2009.

Figure 119. Culvert on FS Road 143 at the Fawn Creek crossing, looking at the outlet after replacement.

Discussion and Recommendations:

- During pre-harvest monitoring, surface erosion in buffers was not observed. Surface erosion was however, observed on roads within buffers encountered during monitoring. It may be useful to determine if erosion increases after harvest activities occur in the area.

- Additional site visits should be planned to investigate landings when harvest is initiated and investigate buffers after harvest activities occur in the area.

- If additional culverts are removed or replaced, site visits should be made by the fisheries biologist to ensure aquatic organism passage is provided.

Responsible Individuals:
West Zone Fisheries Biologist and Fisheries Technician

Responsible Official:
Greg Lesch, Council District Ranger

Prepared by:
J. Greenway, Fisheries Technician

Date:
12/17/2009

MIDDLE FORK ROAD BURNED AREA EMERGENCY REHABILITATION CULVERT REPLACEMENTS

MONITORING RESULTS SUMMARY SHEET

Program:
Fisheries

Activity:
Effectiveness Monitoring

Location:
Warm Springs Creek, Bar Creek and Boulder Creek crossings on the Middle Fork Weiser River Road (FS 186)

Background Information:
Three culverts were identified on the Middle Fork Weiser River Road (FS 186) for replacement using Burned Area Emergency Rehabilitation (BAER) funding. The existing culverts on Warm Springs Creek, Bar Creek and Boulder Creek were undersized and would frequently plug with debris during significant runoff events. These culverts were also identified as fish passage barriers. The Grays Creek Fire would likely have increased the potential for culvert and road failure with the increased runoff potential. Funding was obtained to purchase two pre-cast concrete bridge structures and one pipe arch with concrete footings. In an agreement with Adams County, the Forest Service purchased the structures for the County and they were responsible for installation. The Middle Fork Weiser River Road is a county road and Adams County is responsible for any maintenance required. The Forest Service provided guidance during installation to aid in proper installation and stream simulation within the culverts.

Objectives:
The objectives of monitoring are to document the culvert replacements and determine if stream simulation was met.

Methodology:
Photographs, visual evaluation and professional judgment.

Results:
Photos of the culverts are located in Figures 120-128. The bridge at Warm Springs Creek (Figures 120-122) has high gradient riffle habitat throughout. The outlet is steep and shallow where Warm Springs Creek flows into the Middle Fork Weiser River, but it likely provides fish passage.
The culvert at Bar Creek contains a flat, wide channel, but still provides stream simulation Figures 123-125 The outlet of this culvert is steeper than the channel within the culvert and water flows through loose rocks in the channel. Fish were observed immediately upstream of and downstream of the culvert.
The channel within the bridge on Boulder Creek (Figures 126-128) was deeper than those constructed at the other two crossings. The “banks” within the bridge were approximately 18”-24” above the water level (Figure 128). Low and high gradient riffle habitat was present throughout the bridge. The outlet on the Boulder Creek crossing was

steep and rocky, with some of the stream running through loose rock, similar to Bar Creek.

Figure 120. Bridge installed on Warm Springs Creek. Looking downstream at the inlet on September 23, 2009.

Figure 121. Bridge installed on Warm Springs Creek. Looking upstream at the outlet on September 23, 2009.

Figure 122. Bridge installed on Warm Springs Creek. Looking downstream at the channel inside the bridge on September 23, 2009.

Figure 123. Culvert on Bar Creek. Looking downstream at the inlet on September 23. 2009.

Figure 124. Culvert on Bar Creek. Looking upstream at the outlet on September 23, 2009.

Figure 125. Culvert on Bar Creek. Looking downstream at the channel inside the culvert on September 23. 2009.

Figure 126. Bridge installed on Boulder Creek. Looking downstream at the inlet on September 23, 2009.

Figure 127. Bridge installed on Boulder Creek. Looking upstream at the outlet on September 23, 2009.

Figure 128. Bridge installed on Boulder Creek. Looking downstream at the channel inside the bridge on September 23, 2009.

Discussion:
Additional monitoring should be conducted at all 3 of the stream crossings. Initially, a constructed stream channel with higher streambanks (Boulder Creek and Warm Springs Creek) appears to provide better stream simulation than a wide, flat bottom in the crossings (Bar Creek). This may change after high spring flows. Evaluations should be made after spring runoff has occurred in 2010 and the stream channels within the culverts have stabilized. As sediment moves through the culvert, it is likely that interstices will be filled in the outlets where steep, rocky channels exist. This will likely enhance stream simulation and fish passage at the crossing outlets.

The following is an excerpt from a memo by R. Nelson (EM.02.0030) regarding the installation of the culvert upgrades:
"For all three structures the gradient of the thalweg met the plans; however, the footings were not buried to the depth described in the plans. The plans specify a thalweg that is approximately 0.5 feet below the level of streambed material and the streambed material elevation should approximate the natural channel elevation outside of the structure. The streambed material in the photographs is up to the planned height along the edge of the structures, but because the footings were not buried to the correct elevation the thalweg had to be much deeper relative to the substrate at the margins of the structure, than called for in the plans, and the substrate is built up higher than the streambed outside of the structure. Future monitoring should examine how the substrate in the structure is redistributed and how well the footings resist undercutting."

All of the new crossings contained low to high gradient riffle which will allow fish passage. All three of the new crossings did, however, have steep rocky outlets, with some of the streamflow filtering through loose rock. This creates the possibility of fish passage problems under low flow conditions. This may not be the case after spring runoff occurs and sediment and fine material fill in interstices at the outlets. Monitoring should continue in 2010 and 2011 during and after spring runoff to determine if stream simulation is maintained at these sites.

Recommendations:

- Continue to monitor the stream channels within the crossings to determine if stream simulation is maintained.
- Monitor the outlets of the crossings to determine if stream simulation is maintained (or enhanced) after spring runoff occurs.

Responsible Individuals:
West Zone Fisheries Biologist and Fisheries Technician

Prepared by:
J. Greenway, Fisheries Technician

Date:
12/17/2009

NORTH GRAYS CREEK (FS 217) RE-ROUTE AND CULVERT REPLACEMENT

MONITORING RESULTS SUMMARY SHEET

Program:
Fisheries.

Activity:
Effectiveness Monitoring

Location:
North Grays Creek. FS Road 217 in T15N R1E S 28, 33, and 34.

Background Information:
"In the Black" (non-emergency post-fire rehabilitation) funding was used to re-route FS Road 217, replace one culvert with an open bottom arch and decommission 0.6 miles of road, including the removal of 3 culverts (2 on N. Grays Creek and one on an unnamed tributary).
Initial assessments after the Grays Creek Fire identified 3 culverts for replacement on N. Grays Creek that were undersized and potential barriers to fish passage and an additional culvert on an unnamed tributary of North Grays Creek. Instead of replacing the 4 culverts, it was determined that at nearly the same cost and with increased resource benefit, a portion of FS 217 could be re-routed, removing 3 of the culverts and decommissioning 0.6 miles of road within the riparian area. The other culvert could be replaced with an open-bottom arch to facilitate high flows and allow fish passage in North Grays Creek.
The culvert replacement on North Grays Creek and the new road construction was completed in 2008. Road decommissioning, including the removal of 3 culverts, was completed in the spring of 2009.

Objectives:
The objectives of monitoring are to document road decommissioning, culvert removal and culvert replacement.
Ensure stream simulation was met at the new culvert on North Grays Creek.

Methodology:
Photographs, visual evaluation and professional judgment.

Results:
The culvert and road decommission areas were visited and photographed in July and September 2009. Additional photos (not all are included with this report) of the area are on file at the Council Ranger District.

Figures 129-137 depict the new culvert and road decommissioning on North Grays Creek. The new culvert, which is an open-bottom arch, provides good stream simulation (Figure 131). Photos were taken of the decommissioned road and culvert removal locations to document the reconstructed stream channel (Figures 132-137).

Figure 129. Open-bottom arch installed on North Grays Creek. Looking downstream at the inlet on July 15, 2009.

Figure 130. Open-bottom arch installed on North Grays Creek. Looking upstream at the outlet on July 15, 2009.

Figure 131. Open-bottom arch installed on North Grays Creek. Looking upstream at the stream channel inside the culvert.

Figure 132. Upper culvert removal location and road decommissioning on North Grays Creek, July 15, 2009.

Figure 133. Culvert removal location on the unnamed tributary of North Grays Creek (looking upstream), July 15, 2009.

Figure 134. Lower culvert removal location and road decommissioning (looking upstream) on North Grays Creek, July 15, 2009.

Figure 135. Lower culvert removal location and road decommissioning (looking downstream) on North Grays Creek, July 15, 2009.

Figure 136. Road decommissioning where the re-route begins near the Forest Boundary on FS 217.

Figure 137. Road decommissioning where the re-route ends at the upstream end on FS 217.

Discussion
The open-bottom arch provides fish passage and is of adequate size to accommodate high flow conditions in North Grays Creek. The reconstructed stream channels at the culvert removal locations provide stream simulation and are no longer barriers to fish passage. Cattle activity was observed at the upper culvert removal location on North Grays Creek and the culvert removal on the unnamed tributary (which are in close proximity to one another). Bank trampling was evident, especially in the unnamed tributary. Access to water and straw mulch at the crossing may have attracted cattle to that site. Signs of high cattle activity were not evident at other areas in North Grays Creek. If high levels of cattle activity continue at this site, it may be beneficial to place brush, large woody debris or other materials at this site to deter cattle access to the unnamed tributary at the culvert removal location. This should allow vegetation growth and allow the channel to become stable.

Recommendations:

- Continue monitoring the new culvert and road decommissioning to document re-vegetation and any other changes that occur over time.
- If high levels of cattle use remain at the unnamed tributary crossing, natural obstructions (brush, LWD etc.) could be placed in and along the stream channel to discourage cattle from trampling the stream channel.

Responsible Individuals:
West Zone Fisheries Biologist and Fisheries Technician

Prepared by:
J. Greenway, Fisheries Technician
Date:
12/17/2009

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APPENDIX A

Bear Tornado Recovery Project Implementation Monitoring

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Background

The NFMA and NEPA for the Bear Tornado Recovery Project were completed in a very short time frame due to the need to remove the blow down quickly to abate a fire hazard and recover the maximum value of the timber. As a result, unmapped RCAs that normally would have been mapped were discovered during logging. The timber sale contracts did not provide for buffering unmapped RCAs; therefore, blow down trees were removed from some unmapped RCAs following State Forestry Best Management Practices (BMPs). A Forest Service journey level fisheries biologist determined on a site by site basis if removal of trees from RCAs following State BMPs would meet Payette NF Land Resource Management Plan standards, and if adverse affects to Columbia River bull trout would be avoided. Documentation of unmapped RCAs began on May 31, 2007 and continued until logging was complete. Effects to bull trout were negligible because actions in areas upstream of bull trout occurrence did not degrade Watershed Condition Indicators (WCIs) including sediment, Large Woody Debris (LWD), and shade. In addition, actions that occurred upstream of documented bull trout occurrence, were along non-fish bearing streams, and were approximately 1 mile upstream of where bull trout occur; thus, harassment could not occur. Actions that occurred downstream of bull trout occurrence did not degrade watershed condition indicators and were at least one mile from fish bearing water; therefore, adverse affects to bull trout were avoided.

This document discloses other approved and unapproved deviations from the Environmental Assessment (EA) and Biological Assessment (BA) for bull trout, and contains results and photographs from implementation monitoring. Documentation of approved actions within RCAs that is not provided in this document is on file in the Project Record.

Disclosure of Effects

Blow down removal from RCAs upstream of documented bull trout occurrence
Effects to bull trout were negligible because actions in areas upstream of bull trout occurrence did not degrade WCIs including sediment, LWD, and shade. In addition, the actions were approximately 1 mile upstream of where bull trout occur; thus, harassment could not occur. Using an offroad jammer and other cable systems to pull trees from the "unmapped" RCAs along intermittent non-fish bearing streams will not have effects to bull trout different from those described in the BA for the Bear Blow Down Recovery Project. There is a large amount of ground cover including blow down and shrubs that will trap sediment disturbed in RCAs (Figure 1). No mechanical equipment was allowed off of existing roads or designated skid trails within 120 ft of the channels. The area where trees were removed that was upstream of documented bull trout distribution amounts to approximately 2 acres and is close to 1 mile upstream of fish bearing water;

therefore the likelihood of a significant amount of sediment reaching bull trout habitat in Bear Creek is negligible. Very minimal soil disturbance was observed during post-logging site visits (Figures 1 and 2). Stream temperature and quantities of LWD are functioning appropriately in the analysis area. Removal of blow down from the channel did not move the temperature or LWD WCIs to the Functioning at Risk (FR) category. A supply of LWD was observed in stream channels during post-logging site visits (Figures 1 and 2).

Blow down removal from RCAs downstream of documented bull trout occurrence.
The other unmapped streams where blow down was removed from RCAs flow into Bear Creek downstream of documented bull trout occurrence. The amount of RCA soil and ground cover disturbance and the quantity of LWD remaining in RCAs was monitored during post logging site visits. In all cases soil disturbance from removal of trees was minimal and will be buffered by extensive ground cover and slash (Figure 3). A supply of LWD remained in all channels and RCAs (Figure 3). A total of 49 acres of RCA blow down removal occurred in RCAs (Map 1). Actions that occurred downstream of bull trout occurrence did not degrade watershed condition indicators along non-fish bearing streams; therefore, adverse affects to bull trout were avoided.

RCA buffers on mapped streams throughout the project area.
A fisheries biologist monitored implementation of RCA buffers and design features on the majority of mapped streams. At all RCAs monitored the buffers and design features as described in the EA and BA were followed (Figures 3 and 4).

Landing and skid trail within mapped RCA upstream of bull trout occurrence.
A landing location was approved within approximately 160' of Mickey Creek, a perennial stream approximately 1 mile upstream of documented bull trout occurrence. The landing was located in an old plantation. The 160' of RCA between the landing and the channel was well vegetated and covered with organic debris, which would trap and sediment from the landing. A portion of a skid trail leading to the landing was also within 160' of Mickey Creek and any sediment would be trapped by vegetation and organic debris in the RCA (Figure 5). The 160' RCA between the skid trail, landing, and Mickey Creek will insure that no to negligible quantities of sediment will reach the stream; therefore, effects to bull trout will be negligible.

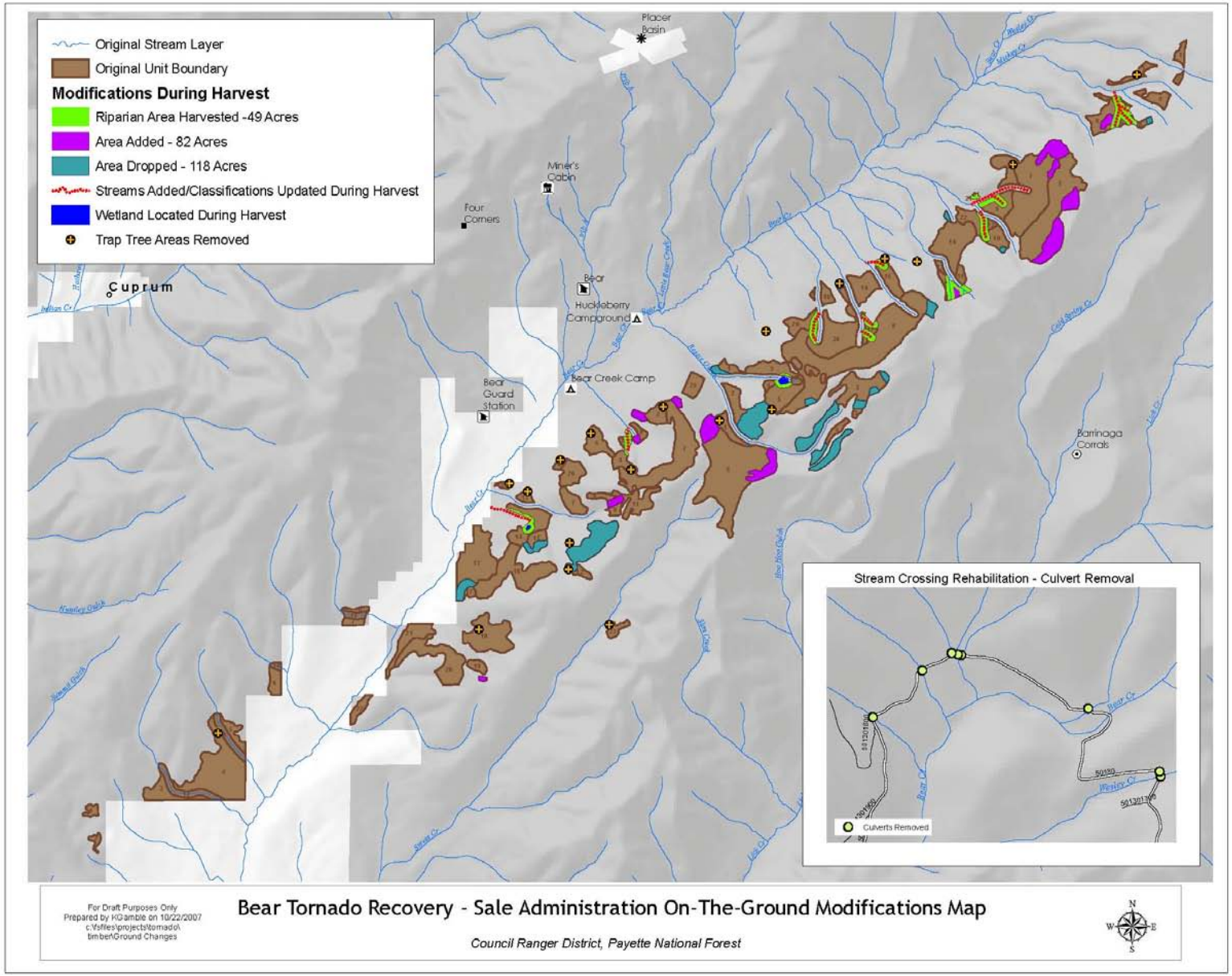
Skid tails within unmapped RCAs downstream of bull trout occurrence.
Within Bear South Unit 3, a skid trail was designated through an RCA of an intermittent channel (Figure 6). The skid trail was rehabilitated after use, but some sediment delivery will occur until vegetation recovers at the site. A fisheries biologist approved two locations where a loader could park and pick up trees lying in an unmapped intermittent channel RCA. Little to no soil disturbance was observed beyond the loader trails and adequate slash and ground cover was present to prevent sediment delivery to the channel (Figure 7). In Unit 15 of Bear North, equipment was driven within approximately 60 feet of a stream channel. Very little soil was disturbed and adequate slash and ground cover was in place to prevent sediment delivery to the channel. Actions that occurred downstream of bull trout occurrence did not degrade WCIs and were at least one mile from fish bearing water; therefore adverse affects to bull trout were avoided.

Road Gravel Mitigation.
As described in the EA and BA, stream crossings within Bear North, Bessie Bear, and Bear South were graveled to reduce long-term sediment delivery (Figure 8).

Culvert removal on Wesley Creek and other tributaries to Bear Creek on Forest Road 130.
The proposed culvert replacement to allow fish passage on Wesley Creek described in the EA and bull trout BA was changed to culvert removal and channel rehabilitation. In addition, 6 other culverts that were plugged, had potential to plug, or were blocking fish passage were removed and the channels were rehabilitated on RD130 (Map 1, Figures 9 and 10). Effects to bull trout by removal of the Wesley Creek culvert are less than if the culvert was replaced because less channel disturbance and turbidity occurred. Removal of other culverts is covered under Road Maintenance in the Biological Assessment for Ongoing Actions.

Bear West over snow RCA logging and snow bridges.
A hydrologist and fisheries biologist approved over snow skidding in Bear West RCAs and several snow bridges across intermittent stream channels. Minimal soil disturbance was observed during monitoring of RCAs after snowmelt and abundant ground cover to capture sediment was observed (Figures 11, 12 and 13). The snow bridges were located at old road fords or otherwise open locations. No streambank damage was observed during post snowmelt monitoring (Figures 14, 15, 16, and 17). Actions that occurred downstream of bull trout occurrence did not degrade WCIs along non-fish bearing streams; therefore, adverse affects to bull trout were avoided.

Helicopter service landing in RCA.
A fisheries biologist approved locating a helicopter service landing within 240 ft of a perennial stream. The landing was located at a trailhead parking area and fuel containment was provided (Figure 18).



Map 1. Bear Tornado Project implementation map showing RCAs that were logged.

Figure 1. Post logging photograph of unmapped RCA in unit 4 where trees were removed.

Figure 2. Post logging photograph of unmapped RCA in unit 4 where trees were removed.

Figure 3. Post logging photograph of unmapped RCA in unit 10 where trees were removed. The pronounced draw in foreground was unmapped and logged. The less pronounced draw in the middle of the photograph was mapped and the 120 ft RCA buffered was not logged.

Figure 4. Bear South unit 1 RCA. Trees were removed from the outer 120 ft of a 240 ft RCA buffer on Bessie Gulch, but machinery remained outside of the 240 ft buffer.

Figure 5. Skid trail within 160 ft of Mickey Creek.

Figure 6. Skid trail across RCA of an unmapped intermittent channel. Channel is in center of the photo.

Figure 7. Approved loader trail within RCA of unmapped intermittent channel that was logged. The end of the loader trail is in the foreground.

Figure 8. Road gravel mitigation implementation on Bessie Bear sale.

Figure 9. Wesley Creek culvert removal and channel rehabilitation.

Figure 10. Tributary to Bear Creek culvert removal and channel rehabilitation.

Figure 11. RCA in Bear West where over snow skidding occurred. Little to no soil disturbance was observed.

Figure 12. Pre logging view of RCA in Bear West where an over snow skid trail was approved due to lack of alternate access.

Figure 13. Post logging view of Bear West over snow skid trail that was approved in an RCA.

Figure 14. Snow bridge over intermittent channel at old ford in unit 12 of Bear West.

Figure 15. Snow bridge on intermittent channel at old road ford in unit 12 after snow melt. See Figure 14 for pre-snow melt.

Figure 16. Measuring snow depth at snow bridge across intermittent channel in unit 5 of Bear West.

Figure 17. Intermittent channel where snow bridge was located in unit 5 of Bear West after snow melt. Pool on right side of photograph is part of the Bear Irrigation Ditch, which captures the channel. See Figure 16 for pre-snow melt photograph.

Figure 18. Helicopter service landing located at a trailhead parking area in an RCA.