Project Monitoring Report

October 1, 2004 through September 30, 2005

Prepared by:
Upper Salmon Basin Watershed Project

Monitoring on Lemhi Big Springs Creek

Project Name:
Idaho Model Watershed Administration and Support

BPA Project No. 1992-026-04
Intergovernmental Agreement No.

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Prepared by:
Upper Salmon Basin Watershed Project
31 Highway 93 North, Suite B
Salmon, Idaho 83467

Introduction/Background

The purpose of this report is to summarize the monitoring work completed by the Upper Salmon Basin Watershed Project in 2005. The physical project monitoring was completed with the assistance of a part-time monitoring intern. A primary monitoring task of the intern was to return to fixed photomonitoring sites to take photographs of riparian stream bank habitat and/or habitat and passage structures for comparison with previous photographs of the site. Methods described in this report are based on those described in the Upper Salmon Basin Watershed Project Draft Monitoring Plan for Projects Implemented within the Upper Salmon Basin (2005).

Methods

When monitoring a project the following information and data were collected: photographs, GPS of photopoint site, and site evaluation. Optionally, depending on the nature of the project, greenlines, pebble counts, quadrate, and/or vegetation surveys were conducted. These monitoring practices are most applicable to fencing projects but can be extended to all types of projects. Pebble counts and greenline surveys are more feasible and useful on small streams or side channels. A vegetation survey is an easy monitoring practice for all projects. An appropriate field form is used to record any monitoring practice conducted in the field (see Field Forms).

Photomonitoring

The main objective for using photo point monitoring is to acquire qualitative documentation of visual changes over time, at individual project locations. Standardized photographs are taken at each project site prior to implementation and then re-taken at the established photopoints according to a monitoring schedule after implementation. Two basic types of photographs are used in this monitoring protocol, landscape and close-up or quadrate photographs. Specific protocols have been established for photo point monitoring (see Appendix B of Monitoring Plan). The steps are as follows: 1) Retake past photographs and establish new photopoints if necessary, 2) GPS any new photograph or old photograph location that has not already been marked, 3) Document photographs taken using the Photography Datasheet (see Appendix A: of Monitoring Plan), 4) Document the location of photographs using the Trimble GeoExplorer 3c GPS unit, 5) Document the location of project fences, diversions, bank stability structures, water gaps, and the location of additional monitoring sites and, 6) GPS any problems found, such as eroding banks and unmanaged fences.

Greenlines

Riparian vegetation surveys were completed on selected project sites using greenline survey methods (Winward 2000). The information gathered by these surveys provides quantitative data to support the photo point monitoring efforts. The main objectives of these vegetation surveys are to quantitatively monitor changes in streamside vegetation. Efforts were focused on areas that were most representative and subject to influences of the specific project. Monitoring was done between May and September. In order to reduce the effect of seasonal variability an attempt will be made to monitor each site at the same time each year on a three to five year basis. Protocols were derived from *Monitoring the Vegetation Resources in Riparian Areas* (Winward 2000).

Monitoring Datasheets: Four additional datasheets were used depending on the type of project monitored. The vegetation checklist is a basic survey of plants identified within the immediate monitoring site. The bank stabilization monitoring sheet addresses specific issues concerning

streambank erosion and erosion control structures. The diversion monitoring data sheet addresses structure condition and problems. The riparian area monitoring data sheet addresses fence condition and riparian condition.

Results

Monitoring of BPA funded Projects

East Fork Watershed

On July 21, 2005, two fencing projects in the East Fork watershed were monitored to assess the condition/status of project structures, take photos at established photopoints and conduct vegetation surveys. The condition of project structures at both sites rated good to excellent, with structures meeting habitat objectives. One of the fence structures, which has been in place for six years, did show signs of needing some minor maintenance due to fence being undercut by river. Photos were taken at 10 of the 10 established photo point locations. Vegetation surveys indicated that the projects scored a 75% (good) and 100% (excellent) on a twelve-question vegetation checklist.

Lemhi Watershed

Between June 15 and July 15, 2005, five fencing projects in the Lemhi watershed were monitored to assess the condition/status of project structures, take photos at established photopoints and conduct vegetation surveys. The condition of project structures rated good to excellent, with structures meeting habitat objectives. Photos were taken at 12 of the 12 established photo point locations. Vegetation surveys were conducted on 4 of the 5 fence projects. The projects scored a 67% (fair), 83% (good), 92% (excellent), and a 100% (excellent) on a twelve-question vegetation checklist.

Pahsimeroi Watershed

Between July 20 and August 31, 2005, one fencing and one monolithic barb stream bank stabilization project were monitored to assess the condition/status of project structures, take photos at established photopoints and conduct vegetation surveys. The condition of project structures at all sites rated fair to good, with structures meeting habitat objectives. Photos were taken at 13 of the 13 established photo point locations. A vegetation survey was conducted on the fence project. The surveyed fence project scored a 67% (fair) on a twelve-question vegetation checklist. The surveyed streambank project scored a 64% (fair) on a ten-question streambank checklist.

Middle-Salmon Panther Watershed

On July 14, 2005 one fencing project in the Middle-Salmon Panther watershed was monitored to assess the condition/status of the project structure, take photos at the established photopoints and conduct a vegetation survey. The condition of the project structure is excellent, with the structure meeting habitat objectives. Photos were taken at 5 of the 5 established photo point locations. A vegetation survey was conducted at the project site. The surveyed project scored a 92% (excellent) on a twelve-question vegetation checklist.

Upper Salmon Watershed

Between July 18 and August 17, 2005, three fencing and two in-stream structure projects (one diversion elimination/ sprinkler project and one flume project) were monitored to assess the condition/status of project structures, take photos at established photopoints and conduct vegetation surveys. The condition of project structures at all sites rated excellent, with structures meeting habitat objectives. One of the project pump sites had to be readjusted in order to get enough flow to the pump. Both pumps also had sediment build up, but overall everything is running well. Photos were taken at 13 of the 13 established photo point locations. Vegetation surveys were conducted on all three fence projects. The projects scored a 91% (excellent), 92% (excellent), and 100% (excellent) on a twelve-question vegetation checklist.

Conclusion

In conclusion, of the 19 projects monitored 16 were BPA funded projects and 3 were projects funded by other funding sources (Table 1). Table 2 shows the types of data collected at each site, including the coded monitoring data sheet, photopoint monitoring, vegetation survey, and greenline survey.

Table 1. 2005 Project Monitoring By USBWP

	Number of Projects Monitored			
Watershed	**Total # of Projects**	**BPA Projects**	**Fencing**	**Instream Structure**
East Fork	2	2	2	0
Lemhi	6	5	6	0
Pahsimeroi	3	3	2	1
Middle-Salmon Panther	3	1	3	0
Upper Salmon	5	5	3	2
Total	19	16	16	3

Table 2. 2005 Project Monitoring By USBWP

	Monitoring Data Collected for the 16 BPA Projects			
Watershed	**Monitoring Datasheet**	**Photo Point Monitoring**	**Vegetation Survey**	**Greenline Survey**
East Fork	2	2	2	0
Lemhi	5	5	4	2
Pahsimeroi	2	3	1	0
Middle-Salmon Panther	1	1	3	0
Upper Salmon	5	4	1	0
Total	16	15	11	2

Discussion

The follow discussion concerns a summary of things learned and future direction for improvement. Data collection forms were field tested for usability and effectiveness. The initial data forms proved cumbersome to use and failed to address issues encountered in the field. Some categories on the forms were inadequate to capture the variety of projects, but monitoring staff will continue to modify and improve the usefulness of the forms for the types of data collected. Also, the client interview is extremely important to the success of projects. The client who

observes the effects of the project on a daily basis has much more poignant observations of the daily functionality and effectiveness of the project than the staff member observing the project on a single annual visit. A planned improvement for FY 2006 is to adapt and improve the client interview process. In addition, the monitoring staff plans to add close up photographs of plot frames at project sites (i.e. quadrates) to detail disturbance and ground cover.

REFERENCES

Idaho Soil Conservation Commission (ISCC). 1995. Model Watershed Plan. Lemhi, Pahsimeroi and East Fork of the Salmon River.

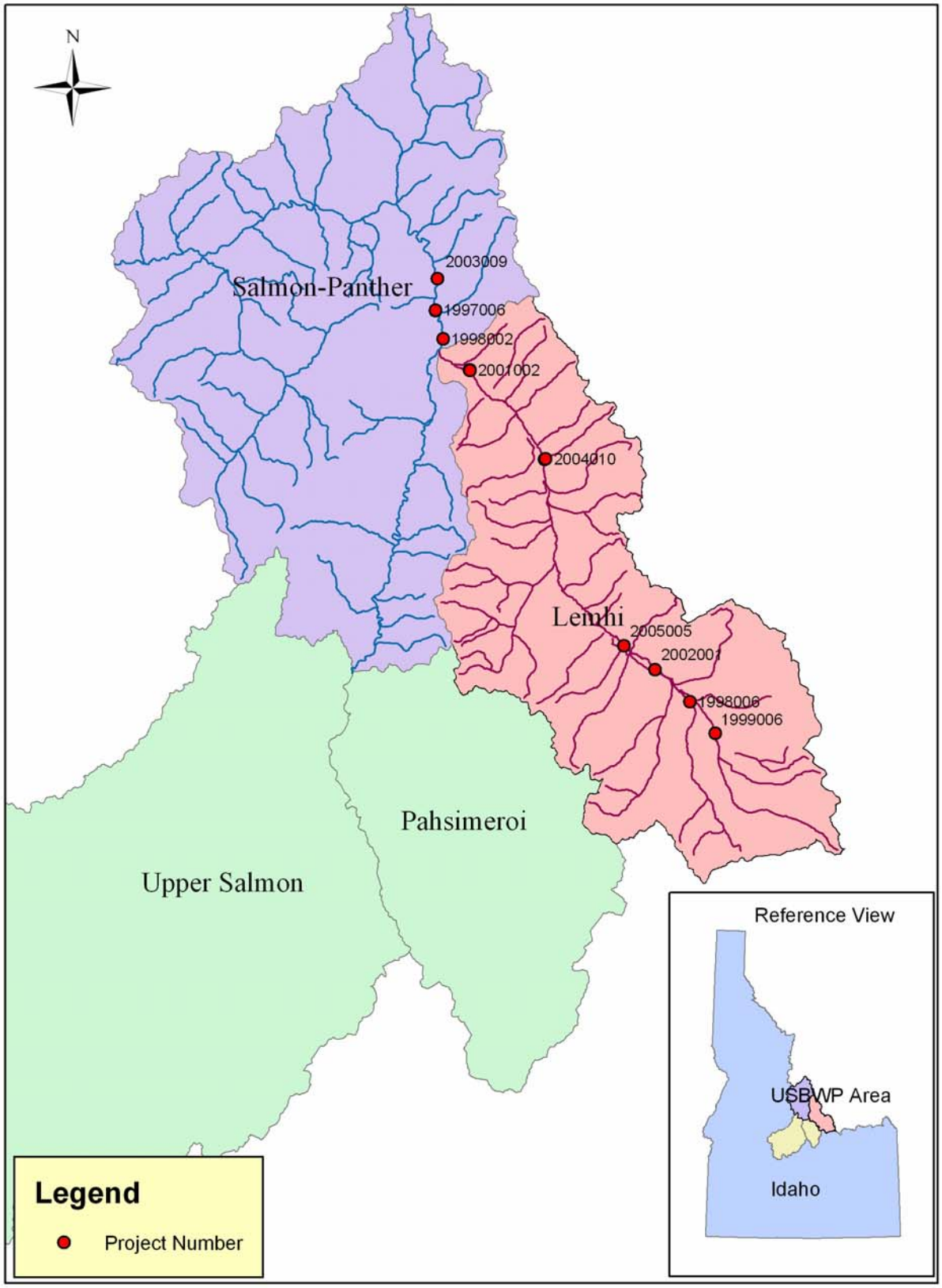
Upper Salmon Basin Watershed Project (USBWP). 2005 Draft Monitoring Plan for Projects within the Upper Salmon Basin.

Winward, Alma H. 2000. Monitoring the vegetation resources in riparian areas. Gen. Tech. Rep. RMRS-GTR-47. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station 49p

Appendices

Maps of project locations monitored
Summary Spreadsheets of projects
Monitoring Codes

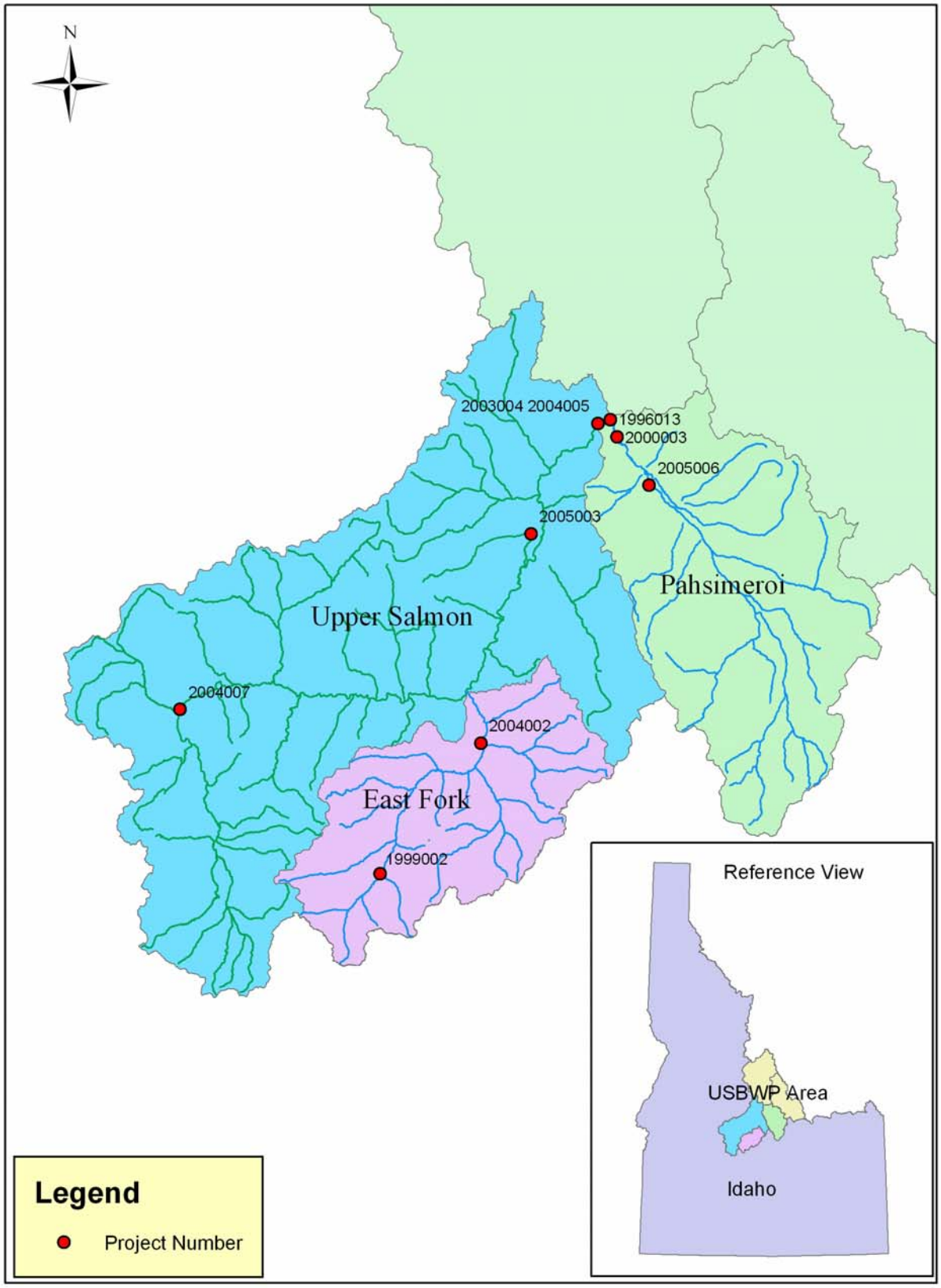
Lemhi Projects
Monitored 2005



1:950,000 1 inch equals 15 miles

0 5 10 20 30 40 50 Miles

Custer Projects
Monitored 2005



1:950,000 1 inch equals 15 miles

0 5 10 20 30 40 50 Miles

CODE DESCRIPTIONS				
Substrate Type		**Maintenance Recommendation (higher number is more desirable)**		
0	Organic debris	1	High	
1	Sand	2	Medium	
2	Gravel	3	Low	
3	Cobble	4	No maintenance needed.	
4	Boulder			
5	Bedrock	**Additional Forms**		
		M	Monitoring Datasheet	
Structure Condition (lower number is more desirable)		**G**	Greenline	
1	Excellent. Structure is intact and structurally sound.	**P**	Photography	
2	Good. Structure is intact and generally sound but some wear is evident, generally appears as designed.	**C**	Pebble Count	
3	Fair. Structure has been altered significantly but is still meeting about 50 % of design criteria.	**V**	Vegetation Survey	
4	Poor. Structure is visible but in a condition that only about 25 % of original design. Significant structural damage.	**S**	Sketch	
5	Not Visible. Complete structural failure. Not in any form of a designed configuration.	**O**	Other	
Structure Meeting Habitat Objective (lower number is more desirable)		**Vegetation Checklist**		**Yes =**
1	100% Excellent. Structure is providing the habitat conditions as expected.	VC 1	Is dead plant material or litter from previous years absent?	Undesirable
2	75% Good. Structure is meeting objectives and providing habitat.	VC 2	Has grazing removed almost all of the palatable vegetation?	Undesirable
3	50% Fair. Structure is providing some habitat benefit that was not present before construction but is achieving only partial expected benefits.	VC 3	Are noxious weeds present?	Undesirable
4	25% Poor. Very little habitat value exists as a result of the structure or prescription. Not being properly used.	VC 4	Do the palatable species shrubs and trees appear to be heavily browsed?	Undesirable
5	0% Failure. Not visible. Structure is not meeting objective.	VC 5	Do willows have a mushroom-like appearance?	Undesirable
		VC 6	Are all the trees old and of poor health (as opposed to being of all sizes and ages)?	Undesirable
Structure Problems (0 means no structural problems)		VC 7	Is stream bank erosion threatening the structural integrity of the fence or other installed structures?	Undesirable
0	None	VC 8	Is there evidence that the fence is not being maintained?	Undesirable
1	Anchor failure	VC 9	Is there evidence of disturbance by rodents, fire, grazing etc.?	Undesirable
2	Cable failure	VC 10	Are young willows re-colonizing the stream bank?	Desirable
3	Channel shift	VC 11	Are previously eroding banks being re-vegetated?	Desirable
4	Boulder/log shift	VC 12	Is there evidence of channel narrowing and/or filling in of deposition areas?	Desirable
5	Undermined			
6	Buried by bedload	**For Bank Stability projects**		
7	Underbuilt	VC 1	Is the barb providing evident fish habitat?	Desirable
8	Inadequate design	VC 2	Is there evidence that the structure has changed from the original construction?	Undesirable
9	Logs/boulders stranded out of channel	VC 3	Are noxious weeds present?	Undesirable
10	Bank erosion at site and/or downstream	VC 4	Are willows growing in barbs?	Desirable
11	Debris trap	VC 5	Do the barbs appear to be causing flow to erode opposite or downstream banks? Which barbs?	Undesirable
12	Poor placement	VC 6	Are barbs filled in with gravel?	Desirable
13	Fence- Inadequate setback	VC 7	Is there evidence of disturbance by rodents, fire, grazing etc.?	Undesirable
14	Fence- Inadequate water gap design	VC 8	Are young willows recolonizing the stream bank?	Desirable
15	Fence failure	VC 9	Are previously eroding banks being revegetated?	Desirable
16	Other	VC 10	Is there evidence of channel narrowing and/or filling in of deposition areas?	Desirable