

# FUTURE FISHERIES IMPROVEMENT PROGRAM

REPORT TO THE 2013 LEGISLATURE  
AND  
FISH, WILDLIFE AND PARKS COMMISSION



*Montana Fish,  
Wildlife & Parks*

1420 East 6<sup>th</sup> Avenue  
P.O. Box 200701  
Helena, MT 59620

Prepared by: Habitat Section, Fisheries Bureau

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Upper right - Removal of mine tailings on a reach of St. Louis Creek, a tributary to Ninemile Creek in Missoula County. Photo courtesy of Rob Roberts, Trout Unlimited.

Upper left – Channel reconstruction following removal of a large railroad culvert on Rock Creek, a tributary to the Yellowstone River in Park County. Photo courtesy of Tom Coleman, Oasis Environmental, Inc.

Lower right – Channel reconstruction on a reach of Nevada Creek, a tributary to the Blackfoot River in Powell County.

Lower left – Channel reconstruction and slope stabilization on a reach of the Vermilion River, a tributary to the Clark Fork River in Sanders County. Photo courtesy of Craig Nesvig, Cabinet Ranger District.

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And  
BULL TROUT AND CUTTHROAT TROUT ENHANCEMENT PROGRAM**

**SUMMARY REPORT (2011-2012) TO THE 2013 MONTANA LEGISLATURE  
And  
MONTANA FISH, WILDLIFE AND PARKS COMMISSION**

**MONTANA FISH, WILDLIFE AND PARKS  
Fisheries Bureau – Habitat Section**

**INTRODUCTION**

The Future Fisheries Improvement Program (MCA 87-1-272, enacted in 1995) provides funds for *“the long term enhancement of streams and stream banks, in-stream flows, water leasing, lease or purchase of stored water, and other voluntary programs that deal with wild fish and aquatic habitats”*. The Future Fisheries Improvement Program was supplemented and amended in 1999 when the legislature enacted the Bull Trout and Cutthroat Trout Enhancement Program (MCA 87-1-283), which *“provides for the enhancement of spawning areas and other habitat for the natural reproduction of bull trout and cutthroat trout”*.

The enabling legislation for the Future Fisheries Improvement Program calls for Montana Fish, Wildlife and Parks to *“present a detailed report to each regular session of the legislature on the progress of the future fisheries improvement program. The legislative report must include the department’s program activities and expenses since the last report and the project schedules and anticipated expenses for the ensuing 10 years’ implementation of the future fisheries improvement program”*.

This report summarizes program activities since last report period; including the appointments of future fisheries review panel members, program staffing, program appropriations, projects approved for funding, program expenditures and a description of anticipated expenses for the ensuing 10 years. Additionally, examples of successfully completed projects funded or partially funded through the Future Fisheries Improvement Program and the Bull Trout and Cutthroat Trout Enhancement Program are displayed using before and after photographs. Also included in this report, as **Appendix A**, is a report summarizing monitoring results obtained from the establishment of a series of long-term photo points for a selected series of completed projects.

This report is electronically posted on Montana Fish, Wildlife and Parks (FWP) website at:

<http://fwp.mt.gov/fishAndWildlife/habitat/fish/futureFisheries/legislative/>

## **PROGRAM GOALS**

The overall goal for the program is identified in the enabling legislation (MCA 87-1-272) as “*Providing for the protection and enhancement of Montana fisheries through voluntary enhancement of spawning streams and other habitats for the natural reproduction of fish and growth of populations of wild fish*”. The Future Fisheries Review Panel developed more detailed goals in 1995 stating that potential projects must accomplish one or more of the following goals in order to be considered for funding: 1) Improve or maintain fish passage; 2) Restore or protect naturally functioning stream channels or banks; 3) Restore or protect naturally functioning riparian areas; 4) Prevent loss of fish into water diversions; 5) Restore or protect essential habitats for spawning; 6) Enhance stream flow in dewatered stream reaches to improve fisheries; 7) Improve or protect genetically pure native fish populations; or 8) Improve fishing in a lake or reservoir.

## **APPOINTED FUTURE FISHERIES REVIEW PANEL MEMBERS**

The enabling legislation (MCA 87-1-272 and modified by MCA 87-1-283) calls for the establishment of a Future Fisheries Review Panel and identifies specific categories of representation, including but not limited to the following:

- One member who is a representative of conservation districts;
- One member with expertise in commercial agriculture;
- One member with expertise in irrigated agriculture;
- One member from the private sector who is a fisheries restoration professional;
- Two members who are licensed Montana anglers;
- One member of the House of Representatives, chosen by the Speaker of the House;
- One member of the Senate, chosen by the Committee on Committees;
- One member with expertise in silviculture;
- One member who is a Montana high school student;
- One member with an expertise in mine reclamation techniques;
- One member with expertise in fisheries; and
- One ex-officio member from the Montana Department of Transportation who has experience in highway impacts mitigation.

Panel members are selected by the Governor or a Governor’s designee. Members serve a two-year term on the panel and may be re-appointed for additional terms. Montana Fish, Wildlife and Parks added an additional appointee to the panel as a member with expertise in hydrology/geomorphology. Members of the Review Panel serving during this report period are shown in **Table 1**.

**TABLE 1.** Future Fisheries Review Panel members serving for the period 2010 through 2012.

<b>Category</b>	12/2010	4/2011- 11/2012
Conservation District	A. Schwend / Sheridan	Same
Commercial Agriculture	A. Johnstone / Wilsall	Same
Irrigated Agriculture	J. Stone / Ovando	Same
Restoration Professional	W. Gavin / Bozeman	Same
Licensed Angler	R. Arnold / Bozeman	Same
Licensed Angler	C. Fisher / Missoula	Same
House of Representatives	K. Van Dyke / Billings	No one appointed
Senate	S. Gallus / Butte	E. Walker / Billings
Silviculture/Forestry	G. Frank / Missoula	Same
High School Student	E. Evensen / Choteau	L. Luoma / Red Lodge
Mine Reclamation	M. Miller / Butte	Same
Fisheries	G. Munther / Missoula	Same
MDT ex-officio	B. Gundrum / Helena	Same
Hydrologist <sup>1</sup>	C. Dalby / Helena	Same

<sup>1</sup>additional panel member not mandated by enabling legislation

## **PROCESSES FOR APPLICATION SUBMITTAL AND FUNDING DECISIONS**

Any entity with a good habitat project that benefits wild fish in Montana will be considered for funding under the two programs. Opportunities to submit project applications to FWP are available twice each year – applications during the winter funding cycle are due on December 1 and applications during the summer funding cycle are due June 1. Project applications are due December 1 and June 1 of each year to be considered for the subsequent funding period.

The Future Fisheries Review Panel met to review project proposals four times since the last report period – December 2010, June 2011, December 2011, and June 2012. Funding recommendations formulated by the Future Fisheries Review Panel were then forwarded to the Montana Fish, Wildlife and Parks Commission (FWP Commission) for final action during their regularly scheduled public meetings held in March for the winter funding cycle and August/September for the summer funding cycle.

All project applications submitted to Fish, Wildlife and Parks during each funding cycle are posted on FWP’s website to provide further opportunity for public review and comment prior to the FWP Commission taking final action. Additionally, environmental assessments (EA’s) are prepared for all projects approved for funding by the Future Fisheries Review Panel and ARE released for public comment prior to FWP Commission action, except for those projects that fall under categorical exclusion under ARM Rule 12.2.454 or for those projects falling under the National Environmental Policy Act. Also, EA’s occasionally are prepared after FWP Commission action if the project is a sub-segment of a larger proposed action. Opportunities for public involvement and comment include attending public meetings of the Future Fisheries Review Panel, attending public meetings of the FWP Commission, reviewing and submitting

comments to FWP for project applications posted on FWP's website and/or submitting comments on draft environmental assessments prepared for individual projects.

### **PROGRAM STAFFING (MCA 87-1-272) *Future Fisheries Improvement Program***

The enabling legislation for the Future Fisheries Improvement Program authorized the use of Program funds for up to two additional full-time employees. MCA 87-1-272 states, "*In order to implement (the program) the department may expend revenue from the future fisheries improvement program for up to two additional full-time employees*". Subsequently, FWP allocated two full time equivalents (FTE's) to the Program. However, base license dollars have been utilized to fund these two FTE's and their operations rather than using funds allocated to the Program. Saved Program funds have been used to fund additional restoration projects.

Mark Lere and Linnaea Schroeer were employed as Program staff during the report period. Mark has been the Future Fisheries Program Officer since November 1997. He is responsible for reviewing project applications; visiting the sites of proposed projects; acting as staff for the Future Fisheries Review Panel; developing and communicating FWP recommendations to the Review Panel; developing project proposals; coordinating with consultants and contractors who design and perform restoration projects; working with landowners and other citizens who need help in developing project proposals; developing project agreements; processing and approving all Program payments associated with completed restoration work; monitoring project implementation, project effectiveness and project compliance (with individual project agreements); and maintaining a comprehensive Program database.

Linnaea was employed as Program staff beginning in early 2008 and worked through July 2011. She was responsible for gathering and compiling monitoring data associated with measuring the effectiveness and land use compliance of completed projects. She also was responsible for developing and overseeing new restoration projects that were focused within the Smith River drainage.

### **PROGRAM STAFFING (MCA 87-1-283) *Bull Trout and Cutthroat Trout Enhancement Program***

MCA 87-1-283 states, "*In order to implement (the program), the department may expend revenue from the bull trout and cutthroat trout enhancement program for one additional FTE and one contractor to assist the review panel*". The single FTE was split among three individuals who, as part of their positions, were required to organize, complete or maintain projects that were eligible for funding under the Bull Trout and Cutthroat Trout Enhancement Program. Base license dollars have been used to fund this split FTE, rather than using funds allocated to the Program. Only the operations costs of these three individuals were funded under the Bull Trout and Cutthroat Trout Enhancement Program. Additionally, operations of Mark Lere and Linnaea Schroeer directly associated with bull trout and cutthroat trout projects were funded under the Program.

Individuals employed under the Bull Trout and Cutthroat Trout Enhancement Program for fiscal year 2012 included Lee Nelson (0.50 FTE through December 2011), who was responsible for

westslope cutthroat trout restoration efforts in FWP's Region 3, David Moser (0.25 FTE), who was responsible to westslope cutthroat trout restoration in FWP's Region 4 and Carol Endicott, who was responsible for Yellowstone cutthroat trout restoration in the upper and mid-Yellowstone drainages located in FWP's Regions 3 and 5. For fiscal year 2013, employed individuals include David Moser (0.5 FTE) and Carol Endicott (0.5 FTE), who are continuing their responsibilities as stated above. Expenditures for operations associated with the Bull Trout and Cutthroat Trout Enhancement Program since the last report period (covering from November 1, 2010 though 10/31/2012) totaled \$32,178.99.

## **PROGRAM APPROPRIATIONS**

**Table 2** provides a summary of appropriations made to the Future Fisheries Improvement Program and to the Bull Trout and Cutthroat Trout Enhancement Program since their inception. This summary includes \$510,000.00 specifically earmarked by the 1995 legislature (26306, EI25) for the purpose of constructing a fish screen on the T&Y Diversion located on the Tongue River to prevent the loss of fish down the irrigation canal. Funds for the Future Fisheries Improvement Program come from the re-direction of River Restoration Program dollars (MCA 87-1-257-258) that are derived from a \$0.50 earmark on resident fishing licenses and a \$1.00 earmark on non-resident fishing licenses. Funds for the Bull Trout and Cutthroat Trout Enhancement Program are derived from appropriations to the Resource Indemnity Trust Fund (RIT) (MCA 15-38-202).

Since inception of the two Programs, appropriations have totaled \$7,268,000.00 to the Future Fisheries Improvement Program and \$6,271,993.00 to the Bull Trout and Cutthroat Trout Enhancement Program, averaging \$807,556.00 per biennium (9 biennia) and \$895,999.00 per biennium (7 biennia), respectively.

## **PROGRAM SUMMARY**

As of October 31, 2012, the Future Fisheries Review Panel and the FWP Commission have approved funding requests (full or partial) for 638 restoration projects since the inception of the two Programs (**Table 3**). Of these, 487 have been completed, 6 are ongoing, 45 are pending and 100 have been cancelled. All Program funds previously committed to cancelled projects were subsequently reallocated to become available for new habitat projects. The reasons for cancellations vary greatly, but five of the most common reasons are:

- The applicant ended up using other funding sources to complete the project;
- The landowner was unwilling to sign a Future Fisheries project agreement. These projects agreements apply to all funded projects and are put in place to ensure that there is protection for the investment in restoration (typically 20 years);
- The applicant was unable to secure the matching funds that were identified in the application;
- The landowner was never fully on board with the proposed project and backed out after funds were approved;
- The scope of the project significantly changed after funding was secured, requiring the applicant to re-apply to the Program or seek other sources of funding.

Since implementation of the overall Program in 1996, the FWP Commission has approved \$13.69 million for restoration projects which, in turn, generated an additional \$36.86 million in matching funds. Matching funds come from a wide array of sources, including federal, state, sportsman groups, conservation groups, watershed groups, private foundations, private companies and landowners. Overall, approximately \$50 million in habitat restoration has been undertaken in Montana since 1996 as a result of the Future Fisheries Improvement Program.

**TABLE 2.** A summary of legislative appropriations by Fund and Subclass made to the Future Fisheries Improvement Program and to the Bull Trout and Cutthroat Trout Enhancement Program (BT/CT). RIT=Resource Indemnity Trust Fund.

<b>LEGISLATIVE SESSION</b>	<b>FUND AND SUBCLASS</b>	<b>AMOUNT</b>
1995	General License, 26306, E125	\$510,000.00
	River Restoration, 26301	\$290,000.00
	General License, 02409, ET30	\$220,000.00
	General License, 02409, ET2	\$1,250,000.00
1997	River Restoration, 02149, 28466	\$70,000.00
	General License, 02409, E131	\$1,310,000.00
1999	River Restoration, 02149, E190	\$300,000.00
	General License, 02409, E131	\$1,170,000.00
	General License, 02409, 38011 (BT/CT)	\$750,000.00
2001	River Restoration, 02149, EI115	\$260,000.00
	General License, 02409, EI115	\$750,000.00
	RIT, 02022, EI115 (BT/CT)	\$850,000.00
2003	River Restoration, 02149, EI131	\$210,000.00
	RIT, 02022, EI131 (BT/CT)	\$700,000.00
2005	River Restoration, 02149, EI150	\$190,000.00
	RIT, 02022, EI150 (BT/CT)	\$1,000,000.00
2007	River Restoration, 02149, EI170	\$314,000.00
	RIT, 02022, EI170 (BT/CT)	\$1,000,000.00
2009	River Restoration, 02149, EI109	\$150,000.00
	RIT, 02022, EI109 (BT/CT)	\$999,655.00
2011	River Restoration, 02149, EI001	\$274,000.00
	RIT, 02022, EI001 (BT/CT)	\$972,338.00

**TABLE 3.** The status of projects funded by the Future Fisheries Improvement Program and the Bull Trout and Cutthroat Trout Enhancement Program, by year, from 1996 (beginning of Program implementation) through October 31, 2012.

<b>YEAR</b>	<b># COMPLETE</b>	<b># ONGOING</b>	<b># PENDING</b>	<b># CANCELLED</b>	<b>TOTAL</b>
1996	41			7	48
1997	39			6	45
1998	39			10	49
1999	43			7	50
2000	36			8	44
2001	27			8	35
2002	34			7	41
2003	32			9	41
2004	32			7	39
2005	27			4	31
2006	27			13	40
2007	33	1	1	1	36
2008	18		2	7	27
2009	26	1	2	2	31
2010	22	2	7	2	33
2011	10	1	17	2	30
2012	1	1	16		18
<b>TOTALS</b>	<b>487</b>	<b>6</b>	<b>45</b>	<b>100</b>	<b>638</b>

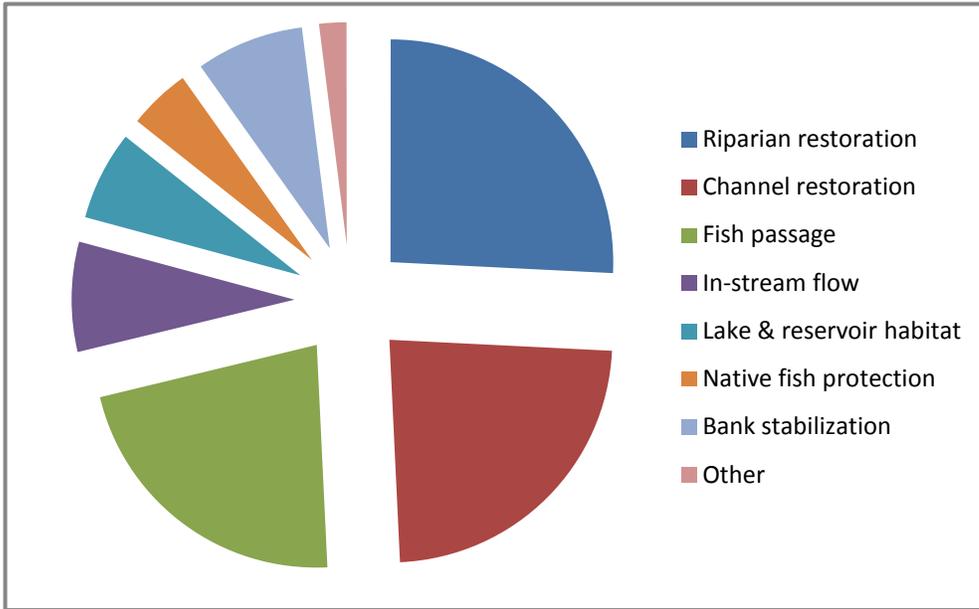
**Figure 1** displays the general types of restoration projects that have been completed using Program funds since 1996. Approximately three quarters of completed projects have been equally composed among the categories of riparian restoration and protection (plantings, stock water, fencing), channel restoration and fish passage (fish screens, upstream passage through road crossings and passage through irrigation diversions). The remaining quarter of completed projects primarily is composed of bank stabilization projects, in-stream flow enhancement projects, lake and reservoir habitat enhancement projects, and native fish protection projects (fish barriers and non-native fish removal).

Over the history of the Program, Future Fisheries projects have:

- Installed approximately 174 miles of riparian fencing;
- Restored or enhanced approximately 169 miles of stream or river channel;
- Provided for upstream fish passage at 64 road crossings;
- Enhanced upstream fish passage at 60 irrigation diversions;
- Installed 41 fish screens to prevent entrainment losses;
- Enhanced in-stream flow on numerous streams and rivers by about 163 cubic feet per second;

- Secured and protected native fish species of special concern on 28 waters and;
- Enhanced spawning and rearing habitat on lakes and reservoirs at 48 locations.

**FIGURE 1.** General types of restoration projects that have been completed using Future Fisheries Improvement Program and Bull Trout and Cutthroat Trout Enhancement funds since Program implementation began in 1996.



**PROGRAM PROJECTS AND EXPENDITURES (11/1/10 – 10/31/12)**

**Table 4** details all of the projects that have been approved for funding by the FWP Commission since the last report period. During the report period, the FWP Commission approved funding or partial funding for 48 restoration projects in 17 Montana counties totaling \$1,255,026.00. These projects derived an additional \$2,984,828.00 in matching funds and in-kind services from outside sources. Of the 48 restoration projects, 18 were funded under the Future Fisheries Improvement Program and 30 were funded under the Bull Trout and Cutthroat Trout Enhancement Program. Narrative descriptions of individual projects begin on page 14.

**TABLE 4.** A listing of Future Fisheries Improvement Projects and their status for projects approved by the Montana Fish, Wildlife and Parks Commission for the report period 11/1/10 through 10/31/12. Projects highlighted in bold and italicized were funded under the Bull Trout and Cutthroat Trout Enhancement Program.

PROJECT NAME AND YEAR	APPLICANT	PROGRAM FUNDS COMMITTED BY FWP COMMISSION (\$)	MATCHING FUNDS (\$)	TOTAL FUNDS COMMITTED (\$)	EXPECTED YEAR OF COMPLETION
<b>2011 WINTER FUNDING CYCLE</b>					
<i>Bean Creek channel restoration</i>	<i>Watershed group</i>	<i>18,000</i>	<i>18,835</i>	<i>36,835</i>	<i>Cancelled</i>
Big Hole River riparian fencing	Watershed group	4,200	13,300	17,500	2012
<i>Blackfoot River fish screen</i>	<i>TU</i>	<i>15,612</i>	<i>30,423</i>	<i>46,035</i>	<i>Complete</i>
<i>Cherry Creek fish barrier</i>	<i>FWP</i>	<i>30,000</i>	<i>87,000</i>	<i>117,000</i>	<i>Complete</i>
<i>Crawford Creek fish barrier</i>	<i>FWP</i>	<i>26,000</i>	<i>75,860</i>	<i>101,860</i>	<i>2012</i>
Deep Creek bank stabilization repair	FWP	1,200	1,515	2,715	Cancelled
<i>Little Boulder Creek culvert to bridge</i>	<i>USFS</i>	<i>10,000</i>	<i>63,350</i>	<i>73,350</i>	<i>2012</i>
<i>McVey Creek fish barrier</i>	<i>FWP</i>	<i>14,000</i>	<i>5,500</i>	<i>19,500</i>	<i>Complete</i>
<i>MF &amp; SF Horse Creeks channel stabilization</i>	<i>Landowner/FWP</i>	<i>40,000</i>	<i>19,155</i>	<i>59,155</i>	<i>Complete</i>
<i>Mill Creek instream flow enhancement</i>	<i>TU</i>	<i>30,000</i>	<i>98,890</i>	<i>128,890</i>	<i>2012</i>
<i>Murphy Spring Cr instream flow enhance</i>	<i>TU</i>	<i>30,000</i>	<i>51,200</i>	<i>81,200</i>	<i>Complete</i>
<i>Narrows Creek spawning habitat enhance</i>	<i>FWP</i>	<i>15,200</i>	<i>46,822</i>	<i>62,022</i>	<i>Complete</i>
<i>Rock Creek culvert removal</i>	<i>FWP</i>	<i>105,866</i>	<i>78,675</i>	<i>184,541</i>	<i>2012</i>
<i>Sixmile Creek fish screen</i>	<i>TU</i>	<i>11,000</i>	<i>68,960</i>	<i>79,960</i>	<i>Complete</i>
<i>Skelly Gulch fish barrier</i>	<i>FWP</i>	<i>8,700</i>	<i>19,580</i>	<i>28,280</i>	<i>Complete</i>
<i>Tin Cup Creek fish screen</i>	<i>Landowner</i>	<i>53,869</i>	<i>100,000</i>	<i>153,869</i>	<i>2012</i>
<i>Willow Creek channel restoration</i>	<i>FWP</i>	<i>40,551</i>	<i>8,000</i>	<i>48,551</i>	<i>2012</i>
Willow Springs Creek off site water	FWP	2,828	4,000	6,828	2012
<b>SUBTOTAL 2011 winter funding cycle</b>		<b>457,026</b>	<b>791,065</b>	<b>1,248,091</b>	
<b>2011 SUMMER FUNDING CYCLE</b>					
Big Hole River drainage 9 fish ladders	FWP	28,250	12,250	40,500	2012
Big Spring Creek Machler supplement	FWP	105,000	3,791	108,791	2013 (supplement to 028-10)
Boulder River fish passage and ditch side channel	FWP	33,513	45,000	78,513	2012
<i>Chaffin Creek fish screen</i>	<i>Water user</i>	<i>11,779</i>	<i>4,729</i>	<i>16,508</i>	<i>2012</i>
Darnutzer Slough channel restoration	Landowner	9,175	9,175	18,350	Complete
<i>Frazier Creek fish passage</i>	<i>TU</i>	<i>12,000</i>	<i>94,150</i>	<i>106,150</i>	<i>2012</i>
NF Smith River riparian fencing	FWP	11,066	7,140	18,206	2012
Red Rock River drainage culvert replacements	TNC	34,025	73,620	107,645	2012
<i>Shields River Chadbourne fish barrier</i>	<i>FWP</i>	<i>100,004</i>	<i>262,444</i>	<i>362,448</i>	<i>2013</i>
Smith Lake dam repair	DNRC	22,680	122,769	145,449	2012
<i>SF Nemote Creek</i>	<i>Water user</i>	<i>1,350</i>	<i>2,784</i>	<i>4,134</i>	<i>2012</i>

PROJECT NAME AND YEAR	APPLICANT	PROGRAM FUNDS COMMITTED BY FWP COMMISSION (\$)	MATCHING FUNDS (\$)	TOTAL FUNDS COMMITTED (\$)	EXPECTED YEAR OF COMPLETION
Wegner/Missouri River riparian fencing	FWP	24,204	100,500	124,704	2012
<b>SUBTOTAL 2011 summer funding cycle</b>		<b>393,046</b>	<b>738,352</b>	<b>1,131,398</b>	
<b>2012 WINTER FUNDING CYCLE</b>					
<i>Cottonwood Creek channel stabilization</i>	<i>Watershed group</i>	<b>53,733</b>	<b>79,505</b>	<b>133,238</b>	<b>2012</b>
<i>Greenhorn Creek fish barrier</i>	<i>FWP</i>	<b>81,983</b>	<b>92,000</b>	<b>173,983</b>	<b>2012</b>
Haskill Creek channel stabilization	Flathead CD	10,910	63,692	74,602	2012
Little Otter Creek corral relocation	Landowner	6,020	30,614	36,634	2012
Racetrack Creek channel stabilization	Clark Fork Coalition	26,389	8,920	35,309	2012
Ruby River Channel Stabilization	Ruby CD	40,661	382,190	422,851	2012
<i>Skalkaho Creek culvert to bridge</i>	<i>USFS</i>	<b>5,000</b>	<b>155,000</b>	<b>160,000</b>	<b>2013</b>
<i>SF of NF Divide Creek culvert fish passage</i>	<i>Big Hole Foundation</i>	<b>2,000</b>	<b>21,400</b>	<b>23,400</b>	<b>2012</b>
<i>Twin Creek mine reclamation</i>	<i>TU</i>	<b>41,000</b>	<b>118,950</b>	<b>159,950</b>	<b>2012</b>
<i>Willow Creek culvert to bridge</i>	<i>TU</i>	<b>11,000</b>	<b>16,520</b>	<b>27,520</b>	<b>Complete</b>
<b>SUBTOTAL 2012 winter funding cycle</b>		<b>278,696</b>	<b>968,791</b>	<b>1,247,487</b>	
<b>2012 SUMMER FUNDING CYCLE</b>					
<i>Browns Gulch fish passage/channel stabilization</i>	<i>Watershed group</i>	<b>28,140</b>	<b>14,500</b>	<b>42,640</b>	<b>2013</b>
<i>Cottonwood Creek riparian fencing</i>	<i>FWP</i>	<b>6,448</b>	<b>2,000</b>	<b>8,448</b>	<b>2013</b>
Madison River riparian fencing	Madison Foundation	2,177	3,200	5,377	2013
<i>Miner Creek riparian enhancement</i>	<i>FWP</i>	<b>36,663</b>	<b>5,000</b>	<b>41,663</b>	<b>2013</b>
<i>Sauerkraut Creek fish screen &amp; instream flow</i>	<i>TU</i>	<b>11,630</b>	<b>60,400</b>	<b>72,030</b>	<b>2013</b>
<i>Sixmile Creek fish barrier</i>	<i>FWP</i>	<b>1,200</b>	<b>1,000</b>	<b>2,200</b>	<b>2013</b>
Smith River riparian fencing	FWP	10,000	44,964	54,964	2013
Swamp Creek siphon	USFWS	30,000	355,556	385,556	2013
<b>SUBTOTAL 2012 summer funding cycle</b>		<b>126,258</b>	<b>486,620</b>	<b>612,878</b>	

**Table 5** details all of the restoration projects funded by the Program that remain active (Program funding has been committed), as well as all of the expenditures associated with the Program, since the last report period (11/1/10 – 10/31/10). A total of \$1,689,380.76 was expended on 59 restoration projects and a total of \$32,178.99 was expended on Program operations (operations associated with the Bull Trout and Cutthroat Trout Enhancement Program).

**TABLE 5.** Future Fisheries Improvement Program and Bull Trout and Cutthroat Trout Enhancement Program expenditures and balances by project and funding source for the report period November 1, 2010 through October 31, 2012. Projects highlighted in bold were eligible for funding under the Bull Trout and Cutthroat Trout Enhancement Program because they restore habitat for bull trout and cutthroat trout.

PROJ ID	STATUS	PROJECT NAME	2022					2409	2149					EXPENDITURES FOR REPORT PERIOD	BALANCE OF COMMITTED FUNDS	
			EI131	EI150	EI170	EI109	EI001	EI115	EI131	EI150	EI170	EI029	EI001			
			2003	2005	2007	2009	2011	2001	2003	2005	2007	2009	2011			
027-1998	Complete	Big Creek water lease													\$8,563.00	\$0.00
<b>033-2002</b>	<b>Ongoing</b>	<b>Republican Ditch fish screen</b>													<b>\$0.00</b>	<b>\$12,249.48</b>
<b>048-2002</b>	<b>Ongoing</b>	<b>Skalkaho Creek fish screens</b>													<b>\$0.00</b>	<b>\$43,094.18</b>
<b>024-2003</b>	<b>Complete</b>	<b>Hedge Canal siphon</b>			<b>\$3,300.00</b>	<b>\$6,600.00</b>									<b>\$9,900.00</b>	<b>\$0.00</b>
021-2006	Complete	Beavertail and Frenchtown pond habitat													\$1,900.00	\$0.00
<b>039-2006</b>	<b>Ongoing</b>	<b>Hedge Canal siphon supplement</b>						<b>\$3,300.00</b>							<b>\$3,300.00</b>	<b>\$65,860.96</b>
<b>040-2006</b>	<b>Ongoing</b>	<b>Republican Canal siphon supplement</b>			<b>\$3,300.00</b>	<b>\$3,300.00</b>									<b>\$6,600.00</b>	<b>\$67,422.00</b>
<b>011-2007</b>	<b>Complete</b>	<b>Lake Creek fish barrier</b>			<b>\$23,746.00</b>										<b>\$23,746.00</b>	<b>\$0.00</b>
<b>023-2007</b>	<b>Pending</b>	<b>Yellowstone Trib. Fish screen</b>													<b>\$0.00</b>	<b>\$28,277.00</b>
<b>029-2007</b>	<b>Ongoing</b>	<b>Cottonwood Creek riparian fence</b>													<b>\$0.00</b>	<b>\$4,460.37</b>
<b>008-2008</b>	<b>Pending</b>	<b>Elk Creek riparian fence</b>													<b>\$0.00</b>	<b>\$14,435.00</b>
<b>016-2008</b>	<b>Complete</b>	<b>NF Highwood Creek fish barrier</b>		<b>\$1,200.00</b>	<b>\$61,641.94</b>										<b>\$62,841.94</b>	<b>\$0.00</b>
020-2008	Complete	Beaver Creek culvert fish passage													\$8,548.66	\$0.00
<b>023-2008</b>	<b>Pending</b>	<b>Deer Creek culvert replacement</b>													<b>\$0.00</b>	<b>\$24,885.00</b>
<b>001-2009</b>	<b>Ongoing</b>	<b>Big Creek water lease extension</b>			<b>\$6,937.00</b>	<b>\$15,500.00</b>									<b>\$22,437.00</b>	<b>\$93,063.00</b>
<b>003-2009</b>	<b>Complete</b>	<b>Cameron Ceek channel restoration</b>		<b>\$16,490.00</b>											<b>\$16,490.00</b>	<b>\$0.00</b>
<b>004-2009</b>	<b>Pending</b>	<b>Dick Creek riparian fence</b>													<b>\$0.00</b>	<b>\$7,500.00</b>
008-2009	Complete	Jack Creek channel restoration													\$20,000.00	\$0.00
<b>012-2009</b>	<b>Complete</b>	<b>Leverich Creek fish barrier</b>			<b>\$30,007.00</b>										<b>\$30,007.00</b>	<b>\$0.00</b>
<b>014-2009</b>	<b>Complete</b>	<b>Little McCormick Creek mine reclamation</b>			<b>\$8,256.63</b>										<b>\$8,256.63</b>	<b>\$0.00</b>
<b>017-2009</b>	<b>Complete</b>	<b>St. Louis Creek mine reclamation</b>				<b>\$65,064.67</b>									<b>\$65,064.67</b>	<b>\$385.33</b>
<b>019-2009</b>	<b>Complete</b>	<b>Sauerkraut Creek mine reclamation</b>	<b>\$11,049.41</b>		<b>-\$11,049.41</b>										<b>\$0.00</b>	<b>\$0.00</b>
<b>022-2009</b>	<b>Complete</b>	<b>Wigwam Creek riparian fence</b>			<b>\$2,177.80</b>										<b>\$2,177.80</b>	<b>\$0.00</b>
<b>023-2009</b>	<b>Complete</b>	<b>Hedge Canal fish screen</b>			<b>\$80,551.20</b>	<b>\$14,524.84</b>									<b>\$95,076.04</b>	<b>\$0.00</b>
<b>026-2009</b>	<b>Complete</b>	<b>Chamberlain Creek road decommissioning</b>		<b>\$27,619.82</b>	<b>\$82,380.18</b>										<b>\$110,000.00</b>	<b>\$0.00</b>
<b>027-2009</b>	<b>Complete</b>	<b>Elkhorn Creek fish barrier</b>			<b>\$999.96</b>	<b>\$59,057.04</b>									<b>\$60,057.00</b>	<b>\$0.00</b>
<b>032-2009</b>	<b>Pending</b>	<b>NF Fridley Creek in-stream water lease</b>													<b>\$0.00</b>	<b>\$38,160.00</b>
<b>034-2009</b>	<b>Complete</b>	<b>Piney Creek diversion and fish screen</b>			<b>\$53,939.00</b>										<b>\$53,939.00</b>	<b>\$0.00</b>
035-2009	Complete	Prickly Pear Creek fish ladder													\$4,275.97	\$0.00
036-2009	Ongoing	Racetrack Creek riparian fence													\$0.00	\$3,675.71
<b>040-2009</b>	<b>Complete</b>	<b>Warm Springs Creek culvert fish passage</b>			<b>\$20,000.00</b>										<b>\$20,000.00</b>	<b>\$0.00</b>
001-2010	Complete	Big Hole River off-stream stockwater													\$3,693.97	\$0.00
<b>002-2010</b>	<b>Complete</b>	<b>Braziel Creek channel restoration</b>		<b>\$12,867.92</b>		<b>\$6,162.08</b>									<b>\$19,030.00</b>	<b>\$0.00</b>
<b>004-2010</b>	<b>Complete</b>	<b>Dry Cottonwood Creek riparian fencing</b>				<b>\$20,769.00</b>									<b>\$20,769.00</b>	<b>\$2,413.00</b>
005-2010	Ongoing	Fleshman creek flood control													\$4,500.00	\$93,600.00
007-2010	Complete	Hellroaring Creek channel stabilization													\$24,803.44	\$0.00
009-2010	Complete	Lincoln Spring Creek culvert fish passage													\$8,717.50	\$0.00
<b>011-2010</b>	<b>Complete</b>	<b>Lower Deer Creek fish barrier</b>				<b>\$141,697.00</b>									<b>\$141,697.00</b>	<b>\$0.00</b>
012-2010	Pending	Mandeville Creek channel restoration													\$0.00	\$25,000.00
<b>013-2010</b>	<b>Complete</b>	<b>Mattie V Creek mine reclamation</b>				<b>\$27,752.39</b>									<b>\$27,752.39</b>	<b>\$1,757.61</b>
<b>014-2010</b>	<b>Complete</b>	<b>Smith Creek fish barrier</b>			<b>\$78,277.00</b>	<b>\$3,276.00</b>									<b>\$81,553.00</b>	<b>\$0.00</b>
<b>019-2010</b>	<b>Complete</b>	<b>Peterson Creek riparian fencing</b>			<b>\$11,491.52</b>	<b>\$4,585.04</b>									<b>\$16,076.56</b>	<b>\$0.00</b>
021-2010	Complete	Rocky Reef Spring Creek restoration													\$70,530.00	\$0.00
<b>022-2010</b>	<b>Complete</b>	<b>Sauerkraut Creek culverts to bridges</b>			<b>\$14,990.20</b>										<b>\$14,990.20</b>	<b>\$0.00</b>
023-2010	Complete	Skalkaho Creek channel stabilization													\$9,804.15	\$1,421.85
024-2010	Complete	SF Smith River riparian fencing													<b>-\$285.88</b>	<b>\$0.00</b>
<b>025-2010</b>	<b>Complete</b>	<b>Tin Cup Creek in-stream flow enhancement</b>			<b>\$95,881.00</b>	<b>\$1,200.00</b>									<b>\$97,081.00</b>	<b>\$0.00</b>
<b>026-2010</b>	<b>Complete</b>	<b>Vermilion River channel stabilization</b>				<b>\$25,000.00</b>									<b>\$25,000.00</b>	<b>\$0.00</b>
027-2010	Complete	Bear Creek culvert fish passage													\$21,224.60	\$0.00
028-2010	Pending	Big Spring Creek channel restoration													\$0.00	\$50,000.00

PROJ ID	STATUS	PROJECT NAME	2022					2409	2149					EXPENDITURES FOR REPORT PERIOD	BALANCE OF COMMITTED FUNDS
			EI131	EI150	EI170	EI109	EI001	EI115	EI131	EI150	EI170	EI029	EI001		
			2003	2005	2007	2009	2011	2001	2003	2005	2007	2009	2011		
031-2010	Pending	Cow Creek dam and flow enhancement												\$0.00	\$73,705.00
033-2010	Ongoing	Harvey Creek riparian fencing			\$6,000.00									\$6,000.00	\$4,025.00
034-2010	Ongoing	Maggie Creek culvert fish passage								\$2,050.00				\$2,050.00	\$2,950.00
037-2010	Pending	Nevada Creek fish screen												\$0.00	\$10,000.00
038-2010	Complete	Nevada Creek channel restoration							\$23,392.77	\$12,407.23				\$35,800.00	\$0.00
039-2010	Pending	NF Frazier Creek culvert fish passage												\$0.00	\$4,420.00
040-2010	Pending	Poindexter Slough restoration and flow												\$0.00	\$25,000.00
041-2010	Complete	Trout Creek woody debris enhancement				\$10,550.00								\$10,550.00	\$0.00
043-2010	Complete	Wyman Gulch culvert fish passage			\$38,070.00									\$38,070.00	\$0.00
003-2011	Pending	Big Hole River riparian fencing												\$0.00	\$4,200.00
004-2011	Complete	Blackfoot River fish screen				\$15,612.25								\$15,612.25	\$0.00
005-2011	Complete	Cherry Creek fish barrier			\$33,000.00									\$33,000.00	\$0.00
006-2011	Pending	Crawford Creek fish barrier												\$0.00	\$26,000.00
009-2011	Pending	Little Boulder Creek culvert to bridge												\$0.00	\$10,000.00
011-2011	Complete	McVey Creek fish barrier			\$14,000.00									\$14,000.00	\$0.00
012-2011	Complete	NF & SF Horse Creek channel stabilization			\$25,355.51									\$25,355.51	\$14,644.49
013-2011	Pending	Mill Creek instream flow enhancement												\$0.00	\$30,000.00
014-2011	Complete	Murphy Spring Creek water lease			\$30,000.00									\$30,000.00	\$0.00
015-2011	Complete	Narrows Creek spawning enhancement			\$15,200.00									\$15,200.00	\$0.00
016-2011	Complete	Rock Creek culvert removal			\$52,717.11	\$7,023.18								\$59,740.29	\$46,125.71
017-2011	Complete	Sixmile Creek fish screen				\$11,000.00								\$11,000.00	\$0.00
018-2011	Complete	Skelly Gulch fish barrier			\$8,700.00									\$8,700.00	\$0.00
022-2011	Pending	Tin Cup Creek fish screen												\$0.00	\$53,869.00
024-2011	Ongoing	Willow Creek channel restoration				\$52.87								\$52.87	\$40,498.13
025-2011	Pending	Willow Springs Creek offsite water												\$0.00	\$2,828.00
026-2011	Pending	Big Hole River fish ladders												\$0.00	\$28,250.00
027-2011	Pending	Big Spring Creek restoration supplement												\$0.00	\$105,000.00
028-2011	Pending	Boulder River ditch fish passage												\$0.00	\$33,513.00
029-2011	Pending	Chaffin Creek fish screen												\$0.00	\$11,779.00
030-2011	Complete	Darnutzer Slough channel restoration								\$9,175.00				\$9,175.00	\$0.00
031-2011	Pending	Frazier Creek fish passage												\$0.00	\$12,000.00
032-2011	Pending	NF Smith River riparian fencing												\$0.00	\$11,066.20
033-2011	Pending	Red Rock River drainage culvert replacements												\$0.00	\$34,025.00
034-2011	Pending	Shields River Chadbourne fish barrier												\$0.00	\$100,004.00
035-2011	Complete	Smith Lake Dam rehabilitation								\$20,427.75				\$20,427.75	\$2,252.25
036-2011	Pending	SF Nemote Creek fish screen												\$0.00	\$1,350.00
037-2011	Pending	Missouri River riparian fencing												\$0.00	\$24,204.00
002-2012	Pending	Cottonwood Creek channel stabilization												\$0.00	\$53,733.00
003-2012	Ongoing	Greenhorn Creek fish barrier				\$5,602.40								\$5,602.40	\$76,380.60
004-2012	Pending	Haskill Creek channel stabilization												\$0.00	\$10,909.54
006-2012	Pending	Little Otter Creek corral relocation												\$0.00	\$6,020.00
007-2012	Pending	Racetrack Creek channel stabilization												\$0.00	\$26,389.00
008-2012	Pending	Ruby River chanel stabilization												\$0.00	\$40,661.00
009-2012	Pending	Skalkaho Creek culvert fish passage												\$0.00	\$5,000.00
010-2012	Pending	SF of NF Divide Creek culvert fish passage												\$0.00	\$2,000.00
011-2012	Pending	Twin Creek mine reclamation												\$0.00	\$41,000.00
012-2012	Complete	Willow Creek culvert fish passage				\$12,100.00								\$12,100.00	\$0.00
013-2012	Pending	Browns Gulch fish passage and stabilization												\$0.00	\$28,140.00
014-2012	Pending	Cottonwood Creek riparian fencing												\$0.00	\$6,448.00
015-2012	Complete	Madison River riparian fencing										\$2,177.00		\$2,177.00	\$0.00
016-2012	Pending	Miner Creek riparian enhancement												\$0.00	\$36,663.00
018-2012	Pending	Sauerkraut Creek fish screen & instream flow												\$0.00	\$11,630.00

PROJ ID	STATUS	PROJECT NAME	2022					2409	2149					EXPENDITURES FOR REPORT PERIOD	BALANCE OF COMMITTED FUNDS
			EI131	EI150	EI170	EI109	EI001	EI115	EI131	EI150	EI170	EI029	EI001		
			2003	2005	2007	2009	2011	2001	2003	2005	2007	2009	2011		
019-2012	Ongoing	Sixmile Creek fish barrier				\$266.00								\$266.00	\$934.00
020-2012	Pending	Smith River riparian fencing												\$0.00	\$10,000.00
021-2012	Pending	Swamp Creek siphon fish passage												\$0.00	\$30,000.00
<b>SUBTOTAL</b>			\$11,049.41	\$58,177.74	\$789,869.64	\$456,694.76	\$3,300.00	\$20,000.00	\$104,475.40	\$60,144.61	\$70,530.00	\$0.00	\$2,177.00	\$1,576,418.56	\$1,673,855.56
	Complete	Clearwater River fish barrier <sup>1</sup>										\$112,961.80		\$112,961.80	\$0.00
<b>SUBTOTAL</b>			\$11,049.41	\$58,177.74	\$789,869.64	\$456,694.76	\$3,300.00	\$20,000.00	\$104,475.40	\$60,144.61	\$70,530.00	\$112,961.80	\$2,177.00	\$1,689,380.36	\$1,673,855.56
		<b>OPERATIONS</b>													
73642		Endicott		\$1,400.94	\$8,700.00									\$10,100.94	
73643		Lere, Schroeer			\$2,077.83	\$216.03								\$2,293.86	
73644**		Moser	-\$2,545.01	\$3,395.27	\$8,700.00									\$9,550.26	
73645		Nelson	\$1,849.80	\$4,772.36	\$3,611.77									\$10,233.93	
		<b>Operation Totals</b>	-\$695.21	\$9,568.57	\$23,089.60	\$216.03								\$32,178.99	
		<b>GRAND TOTAL</b>	\$10,354.20	\$67,746.31	\$812,959.24	\$456,910.79	\$3,300.00	\$20,000.00	\$104,475.00	\$60,144.61	\$70,530.00	\$112,961.80	\$2,177.00	\$1,721,558.95	\$1,673,855.56
		Nov - FYE 11	\$10,354.20	\$38,926.49	\$166,986.25	\$184,185.12		\$20,000.00	\$22,679.80	\$3,664.12	\$70,530.00	\$84,697.86		\$602,023.84	
		FY 12		\$28,819.82	\$645,972.99	\$49,841.53			\$81,795.60	\$51,980.49		\$28,263.94		\$886,674.37	
		FY 13 - Oct.				\$222,884.14	\$3,300.00			\$4,500.00			\$2,177.00	\$232,861.14	
		Totals	\$10,354.20	\$67,746.31	\$812,959.24	\$456,910.79	\$3,300.00	\$20,000.00	\$104,475.40	\$60,144.61	\$70,530.00	\$112,961.80	\$2,177.00	\$1,721,559.35	
		*Charges in these orgs were moved to expend oldest first													
		**Charges were moved to base license dollars													
		<sup>1</sup> Project funded outside of normal Program process													

## NARRATIVE DESCRIPTION OF PROGRAM PROJECTS FUNDED SINCE LAST REPORT PERIOD (2011 THROUGH 2012)

### Project Descriptions – 2011

*(Italicized projects were funded under the Bull Trout and Cutthroat Trout Enhancement Program because they restored habitat for bull trout and cutthroat trout). Project status is as of 10-31-12.*

**1. *Bean Creek channel restoration.*** Bean Creek (Beaverhead County) is a tributary to the Red Rock River located in the Centennial Valley that supports genetically pure westslope cutthroat trout. A reach of the stream, located on property owned by Mr. Dan Dennis, has been straightened and overgrazed, resulting in a shallow and over-widened channel with little suitable fish habitat. This project calls for restoring 1,800 feet of Bean Creek by reactivating a series of historic meanders, re-grading an existing berm, constructing pool habitat, re-vegetating the riparian corridor and installing riparian fencing. Approximately 900 feet of channel would be re-constructed and 2,000 feet of riparian fencing installed. The landowner decided not to pursue the project. **Cancelled.**

**2. *Big Hole River riparian fencing.*** The Big Hole River (Silver Bow County) supports a very popular recreational fishery for rainbow trout, brown trout and mountain whitefish. A one mile reach of the riparian corridor, located on the Carpenter Ranch near the community of Melrose, has been degraded in the past from intense livestock grazing. This project proposes to install 5,000 feet of riparian fencing along the east side of the river. The fencing would reduce grazing pressure and promote recovery of the riparian vegetative community. **Pending.**

**3. *Blackfoot River fish screen.*** The Blackfoot River (Lewis and Clark County) supports a popular recreational fishery for rainbow trout, brown trout, westslope cutthroat trout and mountain whitefish. The upper Blackfoot River also acts as a migratory corridor for fluvial bull trout. An unscreened irrigation diversion, located at river mile 112 near Lincoln on DNRC property, has been documented to entrain juvenile westslope cutthroat trout, brown trout, mountain whitefish, sculpin and suckers. This project sought program funding to install a self-cleaning fish screen with a bypass back to the river. **Completed.**

**4. *Cherry Creek fish barrier.*** Cherry Creek (Beaverhead County) is a tributary to the Big Hole River located near the community of Melrose that currently supports a hybridized population of cutthroat trout, as well as a population of brook trout. The stream flows through a mix of ownership, including the US Forest Service, Bureau of Land Management and 4 private landowners. This project calls for installing a fish migration barrier approximately 1.5 miles upstream from the mouth, removing hybridized fish and non-native fish, and re-establishing the drainage with genetically pure westslope cutthroat trout. **Completed.**

**5. *Crawford Creek fish barrier.*** Crawford Creek (Cascade County), a tributary to Belt Creek, located about 7 miles south of the community of Monarch, was the site of a past effort for restoring a pure population of westslope cutthroat trout by installing a migration barrier and removing non-native fish species. This past effort apparently failed when it was discovered that hybridized fish and non-native rainbow trout had passed the constructed barrier. This project

calls for replacing a culvert located on US Forest Service Lands about 0.1 miles downstream from the existing barrier with a “stepped” box culvert barrier. Following installation of the new barrier, hybridized fish would be removed from the upstream section. **Pending.**

**6. Deep Creek bank stabilization repair.** Deep Creek (Broadwater County); a tributary to the Missouri River located near Townsend that supports rainbow trout, brown trout and brook trout; is a site of a large scale TMDL project first implemented beginning in 1996. The intent of this past TMDL project was to stabilize the channel and reduce sediment loading into the stream. A high water event in 2010 has lead to further erosion of some formerly treated stream sections. To provide a demonstration as an alternative to rock rip-rap for bank stabilization, this project calls for treating 200 feet of actively eroding stream bank using fabric-wrapped soil lifts and extensive willow re-vegetation. The project is located on property owned by Joe Jepson and Chase Ragen. The applicant found other sources of funding to complete the project. **Cancelled.**

**7. Little Boulder Creek culvert fish passage.** Little Boulder Creek (Ravalli County) is a tributary to Painted Rocks Reservoir that supports bull trout and westslope cutthroat trout. An existing US Forest Service road culvert has been determined to be, at least, a partial barrier for upstream fish passage. This project proposes to replace the existing undersized culvert with an open bottom arch bridge that would span the bankfull channel width. **Pending.**

**8. McVey Creek fish barrier.** McVey Creek (Beaverhead County) is a tributary to the Big Hole River located near the town of Wisdom that supports a population of genetically pure westslope cutthroat trout – one of only a few non-hybridized populations in the drainage. The stream also supports an abundant brook trout population. This project proposes to secure the westslope cutthroat trout population by constructing a temporary fish passage barrier at the existing Highway 43 culvert, followed by removal of the brook trout population using a chemical piscicide. The project also calls for installing a fish ladder on an existing irrigation diversion located approximately 1 mile upstream from the highway culvert to enhance fish passage and help ensure in-stream flows are maintained. **Completed.**

**9. Middle and South Forks Horse creeks channel stabilization.** The Middle and South forks of Horse Creek (Park County), tributaries to Horse Creek and ultimately the Shields River located east of the town of Wilsall, support populations of genetically pure Yellowstone cutthroat trout. Past livestock grazing on both streams and the construction of an in-channel pond on the Middle Fork have degraded the overall aquatic habitat on property owned by Peter Ward. This project calls for stabilizing eroding terraces and stream banks on the two streams by constructing floodplain benches along the toe of the unstable banks, constructing a new channel around the in-stream pond located on the Middle Fork and installing riparian fencing and off-channel water for livestock. **Completed.**

**10. Mill Creek in-stream flow enhancement.** Mill Creek (Park County) is a tributary to the Yellowstone River located north of the town of Emigrant that supports fluvial Yellowstone cutthroat trout. Lower Mill Creek is known to be chronically dewatered and has been the site of a water right lease for in-stream flow purposes. This lease proved to be unworkable due to conflicts between junior and senior water rights holders and was ultimately allowed to expire. Currently the stream becomes annually dewatered except during the wettest of years. This

project proposes to pay water users a forbearance fee to ensure a minimum of 12 cfs would remain in-stream at the East River Road Bridge. This project would be for two years and act as a pilot project for a potential future continued effort. **Pending.**

**11. *Murphy Spring Creek in-stream flow enhancement.*** Murphy Spring Creek (Powell County) is a site of several previous restoration efforts funded by Future Fisheries including enhanced fish passage and installation of a fish screen on an irrigation diversion. Murphy Spring Creek supports populations of westslope cutthroat trout and brook trout, and some juvenile bull trout have been found rearing near the mouth of the stream. The stream has been chronically dewatered in the past due to irrigation withdrawals. For the last six years, Trout Unlimited and the water users have entered into single season agreements to ensure up to a 2.2 cfs minimum in-stream flow. This project is seeking funding to enter into a 10-year lease agreement with the water users to ensure this same amount of in-stream flow. **Completed.**

**12. *Narrows Creek spawning habitat enhancement.*** Narrows Creek (Madison County) is a tributary to Elk Lake located in the Centennial Valley that historically supported adfluvial populations of westslope cutthroat trout and arctic grayling. Changing climatic conditions and seismic activity in the area in the mid-1990's resulted in stream flow along the lower 0.6 miles of the stream to become sub-surface. As a result, the self-sustaining cutthroat trout and arctic grayling populations became extinct. This project calls for enhancing in-stream flow and creating spawning habitat in an adjacent spring creek in an effort to restore these self-sustaining populations by piping water from Narrows Creek. **Completed.**

**13. *Rock Creek culvert fish passage.*** Rock Creek (Park County) is a tributary to the Yellowstone River located near Tom Miner Basin that historically supported a fluvial population of Yellowstone cutthroat trout. An abandoned railroad culvert, located near the stream mouth, is now acting as a fish passage barrier. As a result, the fluvial population of cutthroat trout associated with this tributary has been lost. This project calls for removing the old railroad culvert and placing a series of rock weirs within the culvert footprint to provide for upstream fish passage. **Completed.**

**14. *Sixmile Creek fish screen.*** Sixmile Creek (Missoula County), a tributary to the Clark Fork River located near Frenchtown, supports populations of westslope cutthroat trout (slightly hybridized), brook trout and brown trout. An irrigation diversion located about 4.5 miles upstream from the mouth has been documented to entrain substantial numbers of trout, including westslope cutthroat trout. This project calls for installing a self-cleaning fish screen at the head of the irrigation canal to eliminate entrainment. The project also calls for removing a road culvert on the stream that currently provides access to the canal headgate and acts as a partial fish passage barrier. **Completed.**

**15. *Skelly Gulch fish barrier.*** Skelly Gulch (Lewis and Clark County) is a tributary to Sevenmile Creek and ultimately Tenmile Creek located near Helena that supports a genetically pure population of westslope cutthroat trout in the headwaters. An existing road crossing on the stream currently acts as a partial barrier to upstream migration of non-native brook trout. This road culvert is undersized and is under threat of being breached during a high water event. This project calls for replacing the existing culvert with a larger, much longer culvert set on a steeper

slope. The outlet would have a two-foot outfall drop to a concrete splash pad. The configuration of this new culvert would create conditions that prevent brook trout from further invading the headwaters and the pure westslope cutthroat trout population found there. **Completed.**

**16. Tin Cup Creek fish screen.** Tin Cup Creek (Ravalli county), a tributary to the Bitterroot River located near Darby, has been a site of past restoration efforts for improving in-stream flow. The stream supports a mixed assemblage of trout, including hybridized westslope cutthroat trout and bull trout. An irrigation diversion owned and operated by the Tin Cup County Water and/or Sewer District has been documented to be the diversion that entrains the most fish from the stream. As part of an agreement with the US Forest Service to re-habilitate Tin Cup Dam, the water users have been required to install a fish screen on this ditch. This project calls for installing a passive cleaning fish screen at the head of the irrigation canal. **Pending.**

**17. Willow Creek channel restoration.** Willow Creek (Park County) historically supported strong runs of spawning Yellowstone cutthroat trout. The stream, as it flows through a series of residential properties to its confluence with Soda Butte Creek located near Silver Gate, has become degraded as a result of the 1988 fire, a number of improperly placed culvert crossings and channelization due to highway construction. This project calls for restoring about 1,300 feet of the channel by replacing and resetting 6 existing culvert crossings and narrowing and deepening the existing channel using staked coir logs back-filled with soil. **Ongoing.**

**18. Willow Springs Creek off-stream stock water.** Willow Springs Creek (Madison County) has been the site of a past substantial restoration effort that has created a very significant spawning run of rainbow trout and, in part, brown trout. The stream, as it flows through the Willow Springs Ranch before entering the Jefferson River near Waterloo, is being degraded by a livestock feedlot facility. This project calls for installing an off-channel livestock watering system and the elimination of the feedlot water gap to prevent livestock from adversely impacting the stream. **Pending.**

**19. Big Hole River fish ladders.** The upper Big Hole River and its associated tributaries (Beaverhead County) support Montana's last remaining fluvial Arctic grayling population. As part of the Big Hole Arctic Grayling Candidate Conservation Program with Assurances, a plan has been developed to remove migration barriers on enrolled property for the benefit of the grayling, as well as other native and non-native sport fish. Nine existing pin-and-plank irrigation diversion structures, including one on the main-stem Big Hole River and eight located on three tributaries (Rock Creek, Warm Springs Creek and Swamp Creek), have been identified as limiting upstream fish passage for Arctic grayling and other species of fish. Enhancing passage at these diversion structures with the installation of fish ladders will provide additional access to spawning and juvenile rearing habitat. **Pending.**

**20. Big Spring Creek channel restoration.** Big Spring Creek (Fergus County) supports a very popular blue-ribbon rainbow trout and brown trout fishery. A reach of Big Spring Creek, located on property owned by Mark Machler immediately downstream of Lewistown, was channelized in the 1960's, resulting in a straight and entrenched channel with degraded habitat characteristics. In part, this channelization project created the impetus for the ultimate passage of the Montana Natural Streambed and Land Preservation Act (310 law). The project calls for returning meanders to the straightened channel and for creating a functional floodplain for 4,000

feet of the stream, resulting in the addition of about 1,400 feet of new channel. The project is located on a new FWP fishing access site that has a permanent walk-in public easement. This application was for supplemental funding to complete the project. **Pending.**

**21. Boulder River spawning habitat and fish passage.** The Boulder River (Sweet Grass County) supports a popular recreational fishery for rainbow trout, Yellowstone cutthroat trout, brown trout and mountain whitefish. The Dry Creek Canal is one of the largest diversions in the Boulder Drainage, diverting up to 100 cubic feet per second during the irrigation season. The Dry Creek diversion has been documented to entrain thousands of fish during the irrigation season, with FWP personnel periodically visiting the ditch each fall to rescue fish and return them to the river. The diversion headgate is located about 8 miles upstream from the mouth of the river, with the canal paralleling the river for a distance of about 2,000 feet before heading out to lands in the Dry Creek valley. This project calls for installing a new waste-way gate 2000 feet downstream of the headgate and constructing a return channel to the Boulder River. Approximately 10 cubic feet per second of water would be maintained year-round in this 2,000-foot canal reach, thereby preserving the existing high-quality spawning habitat found there. Without this guaranteed canal flow and new wasteway structure, brown trout redds would be completely dewatered once the headgate was closed, and fish entrained into the canal would be lost. **Pending.**

**22. Chaffin Creek fish screen.** Chaffin Creek (Ravalli County) is a tributary to the Bitterroot River located near Darby that supports a mixed salmonid fishery, including bull trout, westslope cutthroat trout and brook trout. Water users on the Trapper Peak Ranch have been directed by the U.S. Forest Service to install a screen on an irrigation diversion to prevent entrainment of fish. The ditch head gate is located on forest service lands, and a fish screen has become a requirement as part of an easement agreement. Only a few miles of the stream maintain adequate flow during the irrigation season to support bull trout and westslope cutthroat trout, and the point of diversion for this ditch is situated within this inhabited reach, making the diversion a likely source of entrainment. This project called for installing a fish screen. **Pending.**

**23. Darnutzer Slough channel restoration.** Darnutzer Slough (Madison County), a spring-creek tributary to the Beaverhead River that flows through the John Osborne ranch, has the potential of providing spawning and rearing habitat to fish residing in the river. In 2006, the Program provided funding to restore approximately 18,000 feet of the stream in an effort to enhance recruitment of fish to the Beaverhead River. Unfortunately, the lower portion of the restored stream now has filled in with sediment due to channel conveyance issues and the management of an adjacent irrigation system. Spawning and rearing habitat within the lower 4,500 feet of channel has been degraded as a result. The issues with the irrigation system contributing excessive sediment were addressed in 2010 by converting to a center pivot sprinkler. This project calls for resizing the lower 4,500 feet of the channel to enhance conveyance of fine sediment, placing additional spawning gravel and installing 160 mature willow transplants. **Completed.**

**24. Frazier Creek fish passage.** Frazier Creek (Powell County) is a tributary to the Blackfoot River that supports a genetically pure, disjunct population of westslope cutthroat trout. Upstream fish passage in the stream, as it flows through the Mannix Ranch, currently is hindered

by an undersized road culvert and is blocked in its upper reaches by an in-channel reservoir. This project calls for restoring the migration corridor for westslope cutthroat trout by constructing a step-pool channel on the front side of the reservoir and replacing the existing undersized culvert with a new, appropriately-sized culvert using stream simulation methodology for design. The project also would enhance in-stream flow by allowing overflow water to pass down the newly created step-pool channel instead of continuing to have it pass to a ditch located on the backside of the reservoir. **Pending.**

**25. North Fork Smith River riparian fencing.** The North Fork Smith River (Meagher County), as it flows through the Lind Ranch located near White Sulphur Springs, was the site of a recently completed Program project involving the installation of electric fencing on a series of three short segments of the channel. The intent of this former project was to provide a demonstration to the landowner for future riparian management. As a result of this past project, the Lind Ranch now is interested in installing permanent electric fencing on both sides of a 0.8 mile section of the North Fork. The newly created riparian pastures would remain un-grazed by livestock for a three- or four-year period to allow for the recovery of vegetation, including willows that are proposed to be planted. **Pending.**

**26. Red Rock River drainage fish passage.** Tributaries to the Red Rock River (Beaverhead County), including Hellroaring, Long, Elk Springs, Bear and Fish creeks, are currently adversely impacted by a series of undersized county road culverts. These undersized culverts hinder migration patterns of native fish within the drainage, including Arctic grayling, westslope cutthroat trout, mountain whitefish, burbot and mottled sculpin. The culverts also have had a propensity for washing out during spring run-off events. This project calls for replacing six undersized culverts with adequately-sized, open-arch pipes or with small bridges. Replacement of the culverts would increase available spawning habitat for Arctic grayling and burbot in four of the stream channels, improve connectivity for an isolated population of westslope cutthroat trout in one of the streams, and prepare one stream for the re-colonization by Arctic grayling. **Pending.**

**27. Shields River fish barrier.** The Shields River drainage (Park County), upstream of the Chadbourne diversion, supports significant un-hybridized to slightly hybridized Yellowstone cutthroat trout populations. The Chadbourne diversion is an irrigation structure that spans the Shields River south of Clyde Park. This diversion structure historically has acted as a passage barrier to the upstream invasion of non-native rainbow trout into the upper two thirds of the drainage. Although the diversion is largely impassable to upstream movement by both native and non-native species of fish, some rainbow trout have been able to ascend the structure under certain flow conditions, creating a threat to Yellowstone cutthroat trout populations located upstream. The diversion is currently in disrepair and is subject to potential failure. The loss of this structure would greatly threaten Yellowstone cutthroat trout populations in the drainage, as well as create a significant hardship for the water users associated with the diversion. This project calls for making repairs to the diversion to ensure structural soundness, making retrofits to ensure that the structure acts as a complete barrier to upstream fish passage, and installing a fish ladder with an associated holding facility to allow FWP personnel to selectively pass native fish that migrate upstream. **Pending.**

**28. Smith Lake dam repair.** Smith Lake (Flathead County), located above Whitefish Lake near the town of Whitefish, historically supported a popular recreational fishery for cutthroat trout. In 2000, the DNRC classified the dam on the lake as high hazard, resulting in the lowering of the lake by about 3 feet in order to meet safety standards. The lower lake levels have adversely affected the recreational fishery, with brook trout now dominating the lake. This project proposes to rehabilitate the dam to meet safety standards, thus allowing lake levels to return to full pool. **Complete.**

**29. South Fork Nemote Creek fish screen.** South Fork Nemote Creek (Mineral County), a tributary to Nemote Creek and ultimately the Clark Fork River near Tarkio, supports a genetically pure population of westslope cutthroat trout. Water users are seeking to re-establish a historic ditch head gate about 0.5 miles upstream of a point of diversion used in the recent past. The new ditch construction involves obtaining an easement across property owned by FWP. As part of the easement agreement, FWP is requiring the water users to install a fish screen into the diversion to prevent entrainment, as well as to maintain a minimum in-stream flow. The applicant is proposing to install a coanda-style screen at the new point of diversion. **Pending.**

**30. Missouri River/Wegner Creek riparian fencing.** Wegener Creek (Lewis and Clark County) is a tributary to the Missouri River located near the town of Craig. This portion of the Missouri River supports an extremely popular recreational fishery for rainbow and brown trout. The Sterling Ranch owns the majority of the property located on the east side of the river from Holter Dam to Rocky Point Road (10 miles) and has a long standing history of balancing public use of the river and maintaining a viable cattle ranch. The ranch is instituting major changes to their cattle management by converting 5 existing hay fields adjacent to the river to an intensive five-pasture grazing system. These new pastures will total 5.59 miles of river frontage and 0.14 miles of Wegner Creek. Wegner Creek provides spawning and rearing habitat for rainbow trout residing in the Missouri River. The intent of this project is to protect 5.73 miles of riparian habitat on the Missouri River and Wegner Creek currently being placed under this new livestock management plan. Pasture perimeters would be fenced with single strand electric fence, with some fencing tying into segments of existing barb wire fence located along the Craig frontage road. **Pending.**

## **Project Descriptions – 2012**

*(Italicized projects were funded under the Bull Trout and Cutthroat Trout Enhancement Program because they restored habitat for bull trout and cutthroat trout).* **Project status is as of 10-31-12.**

**1. Cottonwood Creek channel stabilization.** Cottonwood Creek (Powell County), a tributary to the Clark Fork River at Deer Lodge, recently has been documented to support fluvial cutthroat trout, as well as brown trout. Portions of Cottonwood Creek historically were channelized and over-grazed by livestock. This project calls for restoring stream channel habitat on about 2,200 feet of stream located on the Johnson Ranch. Project activities would include reconstructing about 940 feet of new channel alignment, constructing 1,400 feet of inset floodplain benches, installing several rock weirs and vanes and installing 5,000 feet of electric fencing to protect the riparian corridor. **Pending.**

**2. Greenhorn Creek fish barrier.** Greenhorn Creek (Madison County) is a tributary to the Ruby River that supports non-hybridized westslope cutthroat trout. This population of westslope cutthroat trout is unlikely to persist without conservation efforts that reduce or eliminate competition and potential hybridization from non-native brook trout and rainbow trout. This project calls for constructing a migration barrier near the confluence of the North and South forks to help protect about 12 miles of cutthroat habitat. The barrier would be located on state lands currently leased by Turner Enterprises, Inc. Since 2007, state and federal agencies have removed brook trout from this reach of stream using multiple pass electrofishing techniques. Removal efforts would continue after barrier construction. **Ongoing.**

**3. Haskill Creek bank stabilization.** Haskill Creek (Flathead County) is a tributary to the Whitefish River located near the town of Whitefish that supports a brook trout fishery. A few westslope cutthroat trout also are found in the stream. Past channel straightening and riparian vegetation clearing have impaired stream conditions and increased sediment supply to the stream. This project, located on property owned by Kurt Reimer, calls for stabilizing 1,222 feet of channel by constructing floodplain benches using two different techniques. The intent of the project is to improve water quality and provide a demonstration site for potential future channel stabilization projects. **Pending.**

**4. Little Otter Creek corral relocation.** Little Otter Creek (Judith Basin County) is a tributary to Big Otter Creek located near the community of Raynesford that supports brook trout, brown trout and rainbow trout. An existing corral system located on the Vaskey Ranch is encroaching into the stream, causing excessive sedimentation and degraded water quality. The proposal calls for relocating the corral away from the stream corridor, re-vegetating the disturbed area with trees, shrubs and seed and fencing the riparian corridor to create a vegetative buffer. The project would restore between 100 and 300 yards of riparian corridor. **Pending.**

**5. Racetrack Creek channel stabilization.** Racetrack Creek (Powell County), as it flows through three separate properties owned by Evan Johnson, Jules Waber and Rick Duncan near the community of Galen, has been degraded in the past by removal of riparian vegetation and trampling of stream banks by livestock. Also, an existing irrigation diversion is creating a partial fish migration barrier. Lower Racetrack Creek primarily supports brook trout and brown trout.

This project calls for removing an existing riparian fence damaged by past flooding located on the Waber property and replacing it with 2,000 feet of new fence set back between 100 and 150 feet from the stream. Approximately 600 feet of old riparian fence would be removed on the Johnston property and replaced with 400 feet of new fenced installed on an adjacent terrace. In association, an off-site well would be drilled and two winterized stock tanks would be installed. Additionally, an existing rustic irrigation diversion would be rebuilt with a new pin and plank structure and a denil-style fish ladder installed to provide for upstream fish migration. On the Duncan property, 250 feet of new riparian fencing would be installed. **Pending.**

**6. Ruby River channel stabilization.** The Ruby River (Madison County) located downstream from Ruby Reservoir, supports a mixed trout fishery. Portions of the river located on the Miller Ranch historically were straightened and the riparian vegetation removed to make more room for farming. This project calls for reconstructing the straightened channel to increase sinuosity by lengthening the channel from approximately 2,000 feet to 3,500 feet. The project also would relocate an existing feedlot away from the river channel, install about 7,000 feet of riparian fencing and construct a bridge. **Pending.**

**7. Skalkaho Creek fish passage.** Skalkaho Creek (Ravalli County) supports populations of westslope cutthroat trout and bull trout in its upper drainage. An existing culvert on the Bitterroot National Forest located approximately 20.5 stream miles upstream from the confluence with the Bitterroot River acts as a partial barrier to upstream migrating fish. The width of the culvert only accounts for 44% of the streams bank full width and is perched approximately 1 foot above the outlet. During higher stream flow, typically a time when westslope cutthroat trout and bull trout tend to move upstream, excessive velocities within the culvert make upstream fish passage very unlikely. This project calls for replacing the undersized culvert with a free span bridge. **Pending.**

**8. SF of NF Divide Creek fish passage.** The tributaries of Divide Creek (Silver Bow County) support conservation populations of westslope cutthroat trout. The South Fork of the North Fork of Divide Creek is the only tributary in the drainage that supports non-hybridized westslope cutthroat trout. Presently, the South Fork of the North Fork Divide Creek enters a 0.6 acre settling basin before flowing into the 4.1 acre South Fork Reservoir through a perched culvert. South Fork Reservoir provides municipal water to the city of Butte. The function of the settling basin is no longer needed due to some new water treatment facilities and the perched culvert currently blocks upstream migration of trout residing in the reservoir. This project calls for replacing the perched culvert located between the settling basin and the reservoir with a series of rock step-pools. The step-pools would allow for upstream fish migration from the reservoir. **Pending.**

**9. Twin Creek mine reclamation.** Twin Creek (Missoula County) is a tributary to Ninemile Creek that supports a mixed fish assemblage. Due to past placer mining activity, Twin Creek has been greatly altered, especially within its lower reaches near the confluence with Ninemile Creek. Altered conditions include ditching of the channel, dewatering, and loss of connection with Ninemile Creek. At the proposed project site, the stream is diverted into a series of man-made ditches for about 200 feet before cascading down into an old dredge pond. This project calls for moving and re-grading about 10,000 cubic yards of mine tailings, filling in the dredge

pond and constructing a new channel that connects directly with Ninemile Creek. Approximately 625 feet of new channel would be constructed. The project also calls for extensive re-vegetation, including sowing native grass seed, incorporating willow cuttings into the newly constructed banks and planting containerized shrubs along the riparian corridor.

**Pending.**

**10. Willow Creek fish passage.** Willow Creek (Lewis and Clark County) is a tributary to the Blackfoot River located near the town of Lincoln that supports a mixed fish assemblage, including genetically pure westslope cutthroat trout. An existing road culvert located on property owned by Jerry and Susan Biresch acts as a partial fish migration barrier and creates localized bank erosion. This project calls for replacing the undersized and perched culvert with an appropriately sized free-span bridge. **Completed.**

**11. Browns Gulch fish passage and channel stabilization.** Browns Gulch (Silver Bow County) is a tributary to Silver Bow Creek located near the community of Ramsey that supports westslope cutthroat trout in the upper reaches and brook trout in the lower reaches. This project calls for installing 5 denil-style fish ladders on existing irrigation structures located on the Ueland Ranch to enhance fish passage. Additionally, the project calls for stabilizing the channel and restoring riparian vegetation on three discrete reaches of stream. About 2,400 feet of stream channel would be treated. The work also would involve the installation of an off-channel livestock water tank, installation of 2,300 feet of riparian fencing, and the re-construction of an existing head gate. **Pending.**

**12. Cottonwood Creek riparian fencing.** Cottonwood Creek (Lewis and Clark County), which flows through the Beartooth Wildlife Management Area, has been a recent focus for westslope cutthroat trout restoration. Presently, the headwaters of Cottonwood Creek and the headwaters of Wegner and Frazier creeks, located on property owned by Voegele's Inc., are over-grazed by livestock and the riparian communities are degraded. This project calls for installing about 2 miles of 3-strand, high tensile fence to create a three-pasture, rest-rotation grazing system. This same grazing system has proven to be successful on a lower reach of Cottonwood Creek, which is located on the wildlife management area. **Pending.**

**13. Madison River riparian fencing.** The Madison River (Madison County) supports a blue ribbon fishery and is one of the most heavily fished bodies of water in Montana. The river, as it flows through property owned or leased by the Granger Ranches, has been degraded in the past by livestock overgrazing and bank trampling. This project calls for expanding previous fencing work funded by the Program, on a pasture to the north that has been newly leased from the Longhorn Ranch. Approximately 2 additional river miles would be protected with this project. **Completed.**

**14. Miner Creek riparian enhancement.** Miner Creek (Park County) is a tributary to Billman Creek located near Livingston that supports a slightly hybridized population of Yellowstone cutthroat trout. Presently, a portion of Miner Creek located on property owned by June Kinnick is seriously degraded by an existing, non-functional culvert and significant trampling by horses associated with an adjacent corral system. This project calls for replacing the existing non-functional culvert with a much larger bottomless arch culvert. Additionally, the project calls for

fencing to ensure horses that cross the stream would be limited to using the newly installed culvert crossing. A gravity fed stock water system also would be installed to provide a replacement source of water for horses in the corral system. Adjacent riparian areas would be re-vegetated and an infiltration depression would be contoured to help capture runoff from the corral system. **Pending.**

**15. Sauerkraut Creek fish screen and in-stream flow enhancement.** Sauerkraut Creek (Lewis and Clark County), a tributary to the Blackfoot River located near the town of Lincoln, supports populations of westslope cutthroat trout, bull trout and brown trout. The westslope cutthroat trout are known to be genetically pure. Sauerkraut Creek is the site of two recent Future Fisheries projects involving the restoration of about one mile of channel that had been historically degraded by placer mining and the replacement of three undersized culverts with bridges. This project involves consolidating several points of diversion into a single point of diversion that would be retrofitted with a fish screen. Improvements to the irrigation system would eliminate entrainment of fish and secure in-stream flows with a water management agreement. The water management agreement would involve piping about 4.4 cubic feet per second (cfs) of water through a gravity fed system to irrigate fields, retiring six existing ditches and ensuring a minimum flow of 3 cfs would remain in the stream. **Pending.**

**16. Sixmile Creek fish barrier.** Sixmile Creek (Deer Lodge County) is a stream located in the Big Hole drainage on the Mount Haggin Wildlife Management Area that historically harbored westslope cutthroat trout. Recent surveys have indicated that westslope cutthroat trout are no longer present in the stream. Only brook trout and rainbow trout were found to be present. A natural waterfall located in a bedrock canyon approximately 2 miles upstream from the mouth has the potential to be modified into a barrier to upstream fish migration. There are approximately 3 miles of excellent fish habitat upstream of this potential barrier. This project proposes to modify the waterfall by blasting away material from the bedrock cascade located just downstream to increase the jump height from about 3 feet to approximately 6 to 8 feet. Once the barrier is created, the existing brook trout population would be removed using piscicide. Following the removal of brook trout, westslope cutthroat trout would be re-introduced into this reach of stream using salvaged fish from the stream and fish obtained from other streams located in the Big Hole drainage. **Ongoing.**

**17. Smith River riparian fencing.** The Smith River (Meagher County), linked with the very popular Smith River State Park and floater section, supports a blue ribbon fishery for rainbow trout and brown trout. The Rocking C Ranch, owners of a substantial amount of river frontage located within the floater section, is proposing to re-establish livestock grazing on a series of hay fields adjacent to both the river and Sheep Creek. Sheep Creek is an important tributary to the Smith River. These hay fields have not been grazed in the recent past and the riparian community currently is in good condition. Once cattle are re-introduced, the riparian vegetation could readily become denuded and the stream banks trampled if the riparian corridor is not protected with fencing. This project calls for installing about 4.5 miles of electric fencing in association with six pasture/hay fields along the river and Sheep Creek. The project also calls for creating some off stream livestock water, as well as the installation of a series of livestock water gaps. **Pending.**

**18. Swamp Creek fish passage.** Swamp Creek (Beaverhead County) is an important tributary for the Big Hole Arctic grayling and one of the most productive spawning tributaries in the upper Big Hole drainage. Presently, an irrigation canal from the Big Hole River intercepts Swamp Creek; diverting the stream into the canal and blocking migratory connectivity for arctic grayling and other species of fish. This project calls for installing a siphon at the canal crossing on Swamp Creek, thereby completely separating the canal water from Swamp Creek. The proposed project would improve flow in Swamp Creek downstream of the canal crossing and open upstream access for migratory fish to an additional 12 miles of stream. Additionally, a new diversion, water measuring device and fish ladder would be installed into Swamp Creek to continue to provide the water users access to their Swamp Creek water right and, at the same time, provide for upstream fish passage. **Pending.**

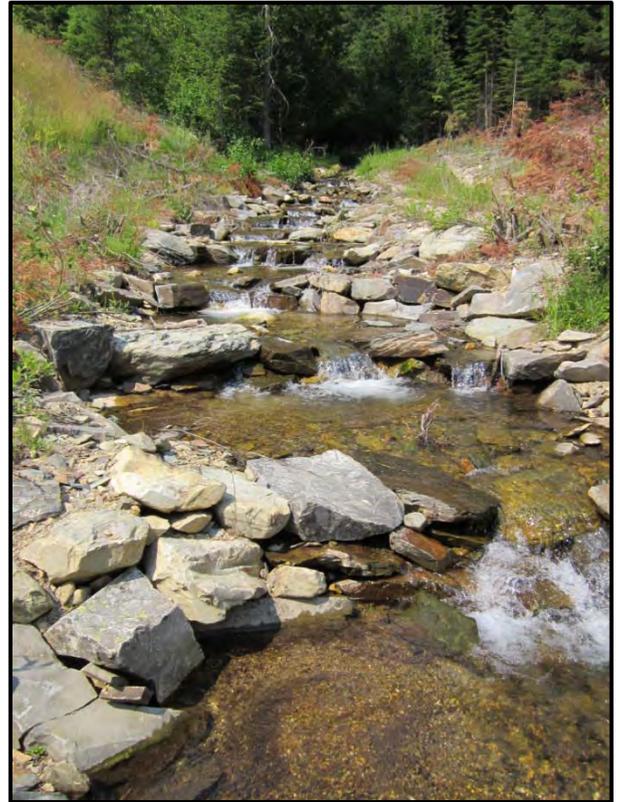
## PHOTO ILLUSTRATIONS OF TYPICAL COMPLETED PROJECTS



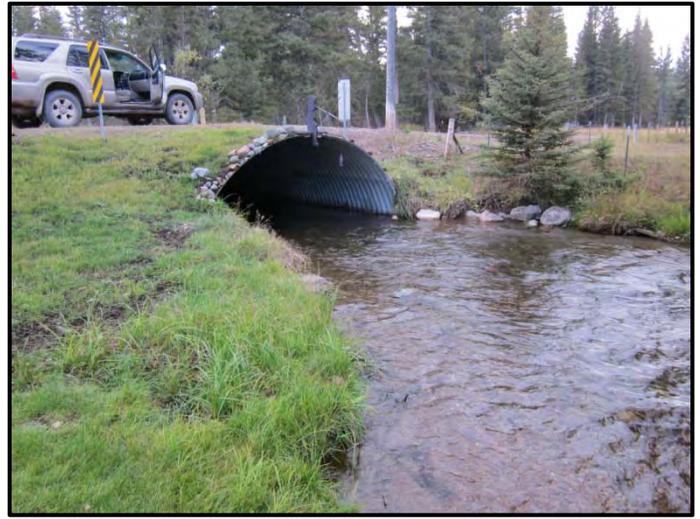
**Photo Illustration 1.** Restoring fish passage on Rock Creek, a tributary to the Yellowstone River located near the community of Miner in Park County. The upper photo shows an abandoned railroad culvert acting as an upstream passage barrier to fish residing in the Yellowstone River. The lower photo shows the stream following removal of the culvert. Yellowstone cutthroat trout now migrate up Rock Creek to spawn. Note that the culvert shown in the lower photo is at a county road crossing located just upstream of the project. This culvert does not impede fish passage. Photos are courtesy of Tom Coleman, Oasis Environmental, Inc.



**Photo Illustration 2.** Fish screens installed into irrigation canals to prevent fish from being lost down the ditches. The upper photo shows a fish screen installed into an irrigation diversion located on the Blackfoot River near the town of Lincoln in Lewis and Clark County. This screen prevents westslope cutthroat trout, bull trout, brown trout, mountain whitefish and native suckers from being entrained into the ditch. The lower photo shows a fish screen installed into the Hedge Canal, a large diversion located on the Bitterroot River near Hamilton in Ravalli County. This screen prevents westslope cutthroat trout, bull trout, rainbow trout, brown trout, mountain whitefish and native non-game fish from being entrained into the canal.



**Photo Illustration 3.** Two tributaries to Ninemile Creek, located in Missoula County, restored from damaged caused by past placer mining activities. The upper two photos display the reclamation of Little McCormick Creek. The photo on the right show placer mine tailings encroaching into the stream prior to restoration. The photo on the left shows the restored stream and re-vegetated floodplain. The lower two photos display the reclamation of St Louis Creek. The photo on the left show an unstable channel confined by mine tailings prior to restoration. The photo on the right shows the restored and stable channel. Both of these streams support westslope cutthroat trout.



**Photo Illustration 4.** Fish passage enhancement projects completed at road crossings to allow for upstream migration. The upper two photos display a fish passage enhancement project located on Beaver Creek near the city of Havre in Hill County. The project replaced an undersized and perched culvert (photo on left) with an appropriately sized culvert set below stream grade. Beaver Creek supports rainbow trout, sauger and numerous species of native non-game fish. The lower two photos display a fish passage enhancement project located on Lincoln Spring Creek, a tributary to the Blackfoot River near the town of Lincoln in Lewis and Clark County. The project replaced an undersized and perched culvert (lower left photo) with an appropriately sized bottomless arch pipe (lower right photo). Lincoln Spring Creek supports brown trout, westslope cutthroat trout and potentially bull trout. The lower left photo was provided courtesy of Ryen Nuedecker, Big Blackfoot Chapter of Trout Unlimited.



**Photo Illustration 5.** Fish passage barriers installed on two streams to protect the genetic integrity of native cutthroat trout from invasion by non-native rainbow trout. The upper photo shows a fish passage barrier installed on Lower Deer Creek, a tributary to the Yellowstone River located near the town of Big Timber in Sweet Grass County. Lower Deer Creek supports genetically pure Yellowstone cutthroat trout. The lower photo shows a fish passage barrier installed on Elkhorn Creek, a tributary to Holter Reservoir in Lewis and Clark County. Elkhorn Creek supports genetically pure westslope cutthroat trout.



**Photo Illustration 6.** The reclamation of Mattie V Creek, a tributary to Ninemile Creek located in Missoula County that had been historically degraded by placer mining. Mine waste first had to be removed and re-graded starting in July 2010 (upper left photo). New channel construction was completed in August 2010 (upper right photo). The lower left photo shows the newly constructed channel undergoing its first spring run-off in May 2011. The lower right photo shows the re-vegetated stream banks and floodplain coming to life in August 2012. Mattie V Creek supports westslope cutthroat trout. The upper two photos and the lower left photo were provided courtesy of Rob Roberts, Trout Unlimited.



**Photo Illustration 7.** Stabilization of the Chapel Slide located on the Vermilion River, a tributary to the Clark Fork River in Sanders County. The upper left photo shows Chapel slide in 2009 prior to restoration. Stabilization involved moving the river channel away from the existing slide and constructing a floodplain bench at the toe (upper right photo). The lower photo shows the completed newly constructed river channel and associated floodplain bench in September 2012. The Vermilion River supports native bull trout, westslope cutthroat trout and mountain whitefish. The stream also supports non-native brown trout and brook trout. The upper two photos were provided courtesy of Craig Nesvig, Cabinet Ranger District.



**Photo Illustration 8.** Fish ladders installed on two streams to improve upstream fish passage. The upper photo displays a fish ladder located on Frazier Creek, a tributary to the Blackfoot River located near Ovando in Powell County. Frazier Creek supports genetically pure westslope cutthroat trout. The lower photo shows a fish ladder installed on Prickly Pear Creek, a tributary to Hauser Reservoir located near East Helena in Lewis and Clark County. Prickly Pear Creek supports brown trout, rainbow trout and mountain whitefish.

## **ANTICIPATED EXPENSES FOR ENSUING 10 YEARS**

Since Program inception (last 17 years), the FWP Commission has committed, on average, approximately \$805,000.00 per year to habitat enhancement projects (combined Future Fisheries Improvement Program and Bull Trout and Cutthroat Trout Enhancement Program). Combined Program expenditures for the last three report periods have totaled approximately \$1.6 million (November 1, 2006 through October 31, 2008), \$1.56 million (November 1, 2008 through October 31, 2010), and \$1.72 million (November 1, 2010 through October 31, 2012). At the same time, appropriations over the last three biennia have totaled approximately \$1.314 million (2007), \$1.15 million (2009) and \$1.246 million (2011). When compared, expenditures have exceeded appropriations over the last three biennia. These excess expenditures were made possible only as a result of unexpended carry-over from past appropriations (prior to 2007).

Assuming appropriations to the two Programs (Future Fisheries Improvement Program and the Bull Trout and Cutthroat Trout Enhancement Program) remain at similar levels as in the past three biennia (\$1.15 to \$1.31 million), we would anticipate expending the total amount appropriated, resulting in expenditures totaling between \$5.75 and \$6.55 million of the next 10 years. These anticipated future expenses, however, are directly tied to future appropriations, which remain an unknown. We are now receiving more funding requests for good restoration projects than the Program has received in appropriations. As a result, funding proposals for good restoration projects will need to be prioritized in the future to address limited Program dollars.