# CANDIDATE CONSERVATION AGREEMENT WITH ASSURANCES FOR FLUVIAL ARCTIC GRAYLING IN THE UPPER BIG HOLE RIVER









2009 Annual Report

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Peter Lamothe Montana Fish, Wildlife & Parks

The Candidate Conservation Agreement with Assurances for Fluvial Arctic Grayling in the Upper Big Hole River State and Federal Agency Partnership includes:

Montana Fish, Wildlife & Parks
USDA Natural Resources Conservation Service
Montana Department of Natural Resources and Conservation
U.S. Fish and Wildlife Service

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#### I. Introduction

A Candidate Conservation Agreement with Assurances (CCAA) is an agreement between the U.S. Fish and Wildlife Service (USFWS) and any non-Federal entity whereby non-Federal property owners who voluntarily manage their lands or waters to remove threats to species at risk of becoming threatened or endangered, in return participating landowners receive assurances against additional regulatory requirements should that species be subsequently listed under the Endangered Species Act (ESA). According to the USFWS, since 2000 there have been 22 CCAA's approved in 15 different states (Womack 2008-USFWS Data). The project areas associated with these CCAA's vary from a one-acre area aiming to protect the Greater and Lesser Cave Beetles in Kentucky to a 1,051,752-acre area targeting the recovery of the Southern Idaho Ground Squirrel (Womack 2008).

The conservation goal of the Candidate Conservation Agreement with Assurances for Fluvial Arctic Grayling in the Upper Big Hole River (Big Hole Grayling CCAA) is to secure and enhance a population of fluvial (river-dwelling) Arctic grayling *Thymallus arcticus* (grayling); within the upper reaches of their historic range in the Big Hole River drainage. Under the Big Hole Grayling CCAA, Montana Fish, Wildlife and Parks (FWP) holds an ESA section 10(a)(1)(A) Enhancement of Survival Permit issued by the USFWS on August 1, 2006. FWP will issue Certificates of Inclusion to non-Federal property owners within the project area who agree to comply with all of the stipulations of the program, including developing an approved site-specific conservation plan. Site-specific conservation plans will be developed with each landowner by an interdisciplinary technical team made up of individuals representing FWP, USFWS, USDA Natural Resources Conservation Service (NRCS), and Montana Department of Natural Resources and Conservation (DNRC) (collectively the Agencies). The conservation guidelines of the Big Hole Grayling CCAA will be met by implementing conservation measures that:

- 1. Improve streamflows
- 2. Improve and protect the function of riparian habitats
- 3. Identify and reduce or eliminate entrainment threats for grayling
- 4. Remove barriers to grayling migration

This planning effort will help alleviate private property concerns, as well as generate support from private landowners which will improve habitat conditions for grayling throughout the project area. The population goal for grayling is to increase their abundance and distribution within the Project Area (FWP and USFWS 2006).

The Big Hole Grayling CCAA is a collaborative effort among private landowners, state and federal agencies, and non-government organizations. These stakeholders have agreed to work together for the common goals of conserving grayling, improving the local fishery, addressing private property concerns, maintaining the current land ownership dynamics, and enhancing the overall health of the upper Big Hole watershed.

This year's report includes a listing of current enrollment, signed site-specific plans, a summary of conservation actions implemented in 2009 and FWP project funding as part of the Big Hole Grayling CCAA.

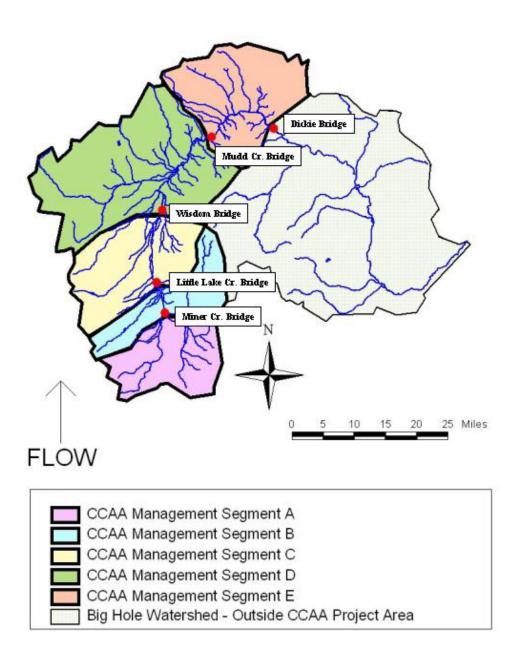


Figure 1. The Big Hole Grayling CCAA Project area and management segments.

### II. Legal Status of Fluvial Arctic Grayling in Montana

On April 24, 2007 the USFWS determined that the grayling population in the upper Missouri River basin did not meet requirements to be classified as a District Population Segment (DPA), it was determined to be no longer warranted for listing under the ESA. This determination removed grayling from the ESA Candidate Species List. Grayling remain a "Species of Special Concern" in Montana. On November 15, 2007 a lawsuit was filed by the Center for Biological Diversity, the Grayling Restoration Alliance, the Federation of Flyfishers and the Western Watersheds Project to overturn the USFWS decision. Currently, the USFWS is completing a status review of the grayling population in the upper Missouri River Basin with an expected listing decision sometime during the summer of 2010. The current legal status of grayling does not remove the need for the Big Hole Grayling CCAA, since it is still possible that grayling may become listed as either Threatened or Endangered under the ESA in the future.

#### **III.** Landowner Enrollment

On August 1, 2006 the USFWS issued FWP an ESA section 10(a)(1)(A) Enhancement of Survival Permit # TE-104415 authorizing the Big Hole Grayling CCAA. The issuance of this permit allowed for the official enrollment of any non-federal landowner within the Big Hole Grayling CCAA project area (Figure 1). Enrolled non-federal landowners are provided incidental take coverage and regulatory assurances once the non-federal landowner, FWP, and the USFWS counter-sign the Certificate of Inclusion, enrollment documents and the approved site-specific conservation plan for the enrolled property (FWP and USFWS 2006). In 2009, one landowner enrolled approximately 2,260 acres of private land. Also, in 2009 one landowner un-enrolled 30 acres of private land after it was determined the activities occurring on the enrolled property were having no impact on the local grayling population. Currently, 32 landowners (Participating Landowners) have enrolled 154,788 acres of private and 5,390 acres of land leased from the State of Montana into the Big Hole Grayling CCAA (Table 1, Figure 2). Enrollment for the Big Hole Grayling CCAA will remain open until 90 days prior to a proposed ESA listing date for grayling that is published by the USFWS in the Federal Register.

As of May 1, 2010 the USFWS had counter-signed 30 of the 32 Certificates of Inclusion signed and submitted by FWP (Table 1). The remaining Certificate of Inclusions will be cosigned once the initial assessment of the properties for immediate threats to grayling and water rights compliance have been completed and submitted to the USFWS.

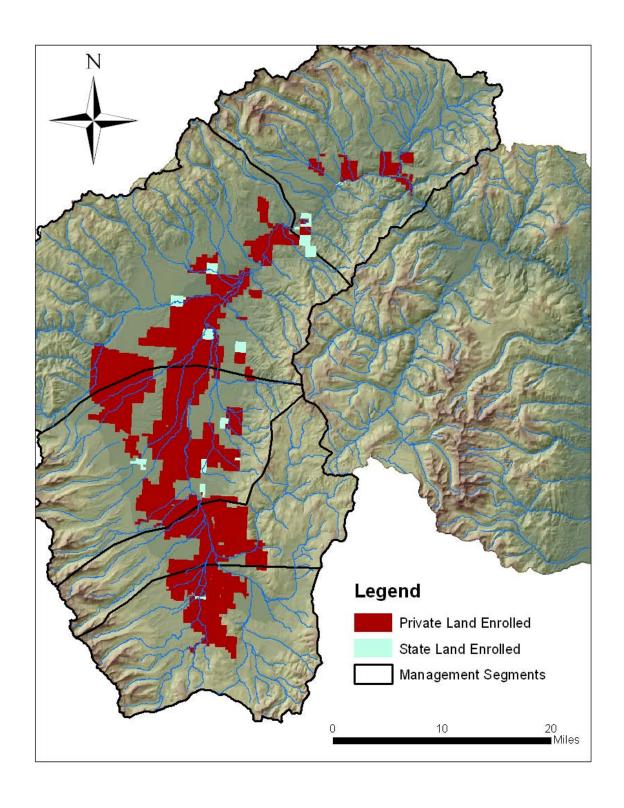


Figure 2. Area of state and private land currently enrolled into the Big Hole Grayling CCAA Program.

Table 1. Landowners, acreage enrolled, year of enrollment and current enrollment status in the Big Hole Grayling CCAA.

Landowner	Management	Private Land Enrolled	State Land Enrolled	Enrollment Status
	Segment(s)	(Acres)	(Acres)	
1. Dooling Livestock Company (2006)	Α	6,300	0	Enrolled – SSP Completed
2. Upper Big Hole LLC. (2006)	Α	3,100	0	Enrolled – SSP Completed
3. Lapham Ranch Company (2006)	A&B	7,000	0	Enrolled – Extension Approved
4. Jackson Ranches, Inc. (2006)	A&B	4,230	200	Enrolled – Extension Approved
5. H Lazy J Ranch (2006)	A&B	3,370	640	Enrolled – Extension Approved
6. Peterson Brothers Cattle Company (2007)	A&B	2,400	400	Enrolled
7. Dick Hirschy Cattle Inc. / Heidi Hirschy (2007)	A, B,C&D	24,153	0	Enrolled
8. Robert Wueste (2008)	Α	2,930	0	Enrolled
9. Rocky Mountain Ranches (2006)	В	3,445	0	Enrolled
10. Finch Ranches, LLC (2007)	В	1,052	0	Enrolled
11. Husted Ranches, Inc. (2006)	B&C	3,744	0	Enrolled – Extension Approved
12. Johnson Brothers, Inc. (2006)	B&C	2,490	0	Enrolled
13. Ralph Huntley and Son, Inc. (2006)	С	9,200	560	Enrolled
14. Wisdom River Cattle Company (2006)	С	3,721	0	Enrolled – Extension Approved - SSP
				Completed
15. Foster Company (2006)	С	2,017	400	Enrolled – Pending COI Approval
16. Fred and Lynn Hirschy (2007)	С	1,550	0	Enrolled
17. Circle 3 Land & Cattle, LLC (2009)	С	2,260	0	Enrolled – Pending COI Approval
18. John and Phyllis Erb / Erb Livestock Company	C&D	23,174	560	Enrolled – Extension Approved
(2006)	000	5.400	2	Familial Fatancian Assessed
19. Big Hole Grazing Association (2006)	C&D	5,192	0	Enrolled – Extension Approved
20. John Nelson (2007)	C&D	3,340	640	Enrolled
21. Jack Hirschy Livestock, Inc. (2007)	C&D	14,787	0	Enrolled
22. Harrington, Company (2007)	C&D	8,334	640	Enrolled
23. Big Hole River LLC. (2006)	D	1,473	0	Enrolled
24. Stanley Rasmussen (2006)	D	160	0	Enrolled – Extension Approved
25. Quarter Circle 3T Ranch (2007)	D	2,530	640	Enrolled
26. Weaver Ranch (2007)	D	680	0	Enrolled
27. Ralston Ranch, Inc. (2006)	E	2,850	0	Enrolled – Extension Approved
28. LaMarche Creek Ranch (2006)	E	1,670	0	Enrolled – Extension Approved
29. Reinhardt Ranch Company (2006)	E	900	70	Enrolled – Extension Approved
30. Christiansen's East Bench (2007)	E	6,336	1,280	Enrolled
31. K.L. Spear (2007)	E	700	0	Enrolled
32. Ernest Bacon (2007)	E	980	0	Enrolled
Totals		<u>154,788</u>	5,390	

### IV. Big Hole Grayling CCAA Rapid Assessments

The Participating Landowners in the Big Hole Grayling CCAA must allow the Agencies to conduct a "rapid assessment" of the enrolled property within 90 days of enrollment. The rapid assessment focuses on the identification of immediate threats of mortality or harm to grayling on the property, and validation of water rights compliance. Immediate threats to grayling may include structures, mechanical devices, or pollutants that pose a threat of immediate mortality or harm to grayling. Examples include: unscreened pumping from a creek or river or toxic effluent entering into a creek or river. Additional information may be gathered through the assessments that assist with the development of the site-specific conservation plan with the Participating Landowner (Petersen and Lamothe 2006).

#### A. Surveys for Immediate Threats to Grayling

Surveys for immediate threats to grayling were conducted on the properties enrolled by Circle 3 Land and Cattle, LLC on August 27, 2009 and October 29, 2009. No immediate threats to grayling were identified during the surveys. Monitoring of the enrolled property for immediate threats continues as the site-specific conservation plan is being developed by the Agencies.

#### B. Water Rights Compliance Evaluation

In 2009, water rights compliance efforts were completed by DNRC on two properties, as part of the rapid assessment process (Robert Wueste and Circle 3 Land and Cattle, LLC). Both landowners were found to be in compliance with the existing water rights for the enrolled properties at the time of the assessments.

### V. Site-Specific Conservation Plans

Site-specific conservation plans are developed for each Participating Landowner by the Agencies. The site-specific conservation plans identify conservation actions that will lead to: improved streamflows, enhanced riparian and stream channel condition, improved fish passage and reduced levels of entrained grayling.

#### A. Site-Specific Conservation Plans Completed and Approved

To date, three site-specific plans have been completed and approved by FWP and USFWS for landowners enrolled in the Big Hole Grayling CCAA (Table 1). These site-specific plans are ten-year agreements to implement conservation actions on the enrolled property intended to enhance resource conditions for grayling.

### B. Extension Requests Approved by USFWS

To date, FWP has requested 24 month extensions to complete site-specific plans on 11 properties enrolled in the Big Hole Grayling CCAA (Table 1). Site-specific plans have been completed on one of the properties that an extension request was approved for by the USFWS (Table 1).

#### VI. Conservation Measures

Through the process of developing site-specific conservation plans for Participating Landowners the Agencies identify projects that will improve streamflows, enhance riparian and stream habitat quality, provide passage to fish through irrigation structures, and reduce or eliminate the entrainment of grayling within irrigation ditches. The following are projects that were completed

in 2009. A majority of the funding for staff and restoration and infrastructure projects was provided through FWP's State Wildlife Grant program.

#### A. Entrainment Surveys

In 2009, FWP field personnel surveyed approximately 6.5 miles of irrigation ditch on three enrolled properties for entrained grayling (Table 2). No grayling were captured during these surveys (Table 2). Other fish species captured during the surveys include: brook trout *Salvelinus fontinalis*, brown trout *Salmo trutta*, burbot *Lota lota*, longnose dace *Rhinichthys cataractae*, rainbow trout *Oncorhynchus mykiss*, sculpins *Cottus bairdi*, suckers likely *Catostomus commersoni* and mountain whitefish *Prosopium williamsoni* (Table 2).

Table 2. Summary of entrainment survey data collected in 2009 by FWP.

Date	Landowner	Source	# of Ditches Surveyed	Length of Survey (miles)	Species Captured
7-9	Upper Big Hole LLC	Big Hole River	4	1.91	brook trout, rainbow trout, burbot, suckers, longnose dace, sculpin
7-10	Upper Big Hole LLC	Big Hole River	2	0.93	brook trout, burbot, suckers, longnose dace, sculpin
7-10	Dooling Livestock Company	Big Hole River	2	0.78	brook trout, rainbow trout, suckers, sculpin
7-13	Dooling Livestock Company	Little Swamp Creek	1	0.24	brook trout, sculpin
7-13	Dooling Livestock Company	Berry Creek	2	0.78	brook trout, suckers, sculpins
9-3	Erb Livestock	North Fork	2	0.99	brook trout, brown trout, burbot, suckers, mountain whitefish, longnose dace, sculpins
10-13	Erb Livestock	Big Hole River	1	0.79	brook trout, burbot, suckers, mountain whitefish

#### B. Projects to Enhance Fish Passage

In 2009, FWP provided partial funding for two projects to enhance the ability of fish to migrate through irrigation diversions on properties enrolled in the Big Hole Grayling CCAA (Table 3).

Table 3. Summary information for fish passage projects completed in 2009.						
Landowner(s)	Project Type	Associated Structures	Project Cost	Landowner Contribution		
Harrington Company, Erb Livestock	Rock Diversion	Headgate, Flume	\$22,347.30			
Wisdom River Cattle Company	Fish Ladder	Diversion	\$7,400.00	\$3,400.00*		
*Landowner contribution funded through NRCS EQIP.						

#### C. Projects to Enhance Riparian and Stream Channel Habitat

In 2009, FWP worked in partnership with USFWS, NRCS, and Participating Landowners to implement eleven projects to enhance riparian and stream habitat conditions on seven properties enrolled in the Big Hole Grayling CCAA (Table 4).

Table 4. Summary information for riparian and stream channel habitat enhancement projects completed in 2009.

Location	Landowner(s)	Project Component	Cost	Landowner
				Contribution
Swamp Creek	Erb Livestock, John Nelson,	Project Oversight	\$20, 918.70	
	Harrington Co.			
Swamp Creek	Erb Livestock, John Nelson,	Riparian and	\$139, 458.00	Restoration Materials
	Harrington Co.	Channel Restoration		and Lost Grazing
				Acreage
Big Hole River	Upper Big Hole, LLC	Project Oversight	\$4,999.00	
Big Hole River	Erb Livestock	Project Design &	\$16,250.00	
		Oversight		
Big Hole River	Erb Livestock	Streambank	\$22,500.00	Restoration Materials
		Stabilization,		and Lost Grazing
		Riparian Restoration		Acreage
Little Lake	Johnson Brothers, Inc.	Riparian and	\$37,651.00	Removal of Old
Creek		Pasture Fence		Fence
North Fork	Erb Livestock	Riparian and	\$79,265.00	
		Pasture Fence		
North Fork	Erb Livestock	Streambank	\$16,500.00	Restoration Materials
		Stabilization and		
		Riparian Restoration		
Warm Springs	Lapham Ranch Co.	Riparian and	\$39,642.00	
Creek		Pasture Fence		
Fishtrap	Ernie Bacon	Riparian and	\$67,227.00	
Creek		Pasture Fence		
Big Hole River	Erb Livestock	Noxious weed	\$7,192.94	Project
		mapping and control		complemented
				existing control efforts

#### D. Projects to Improve Streamflows and Irrigation Water Management

In 2009, FWP worked with NRCS, USFWS, DNRC, and Participating Landowners to implement six projects on seven properties to enhance the ability to manage and measure water used for irrigation and reduce the need to divert water for watering livestock (Table 5).

Table 5. Summary of projects designed to improve streamflows or the management of irrigation water.

Associated Water	Landowner(s)	Project Component	Cost	Landowner
Body	Landowner(3)	1 Toject Component	0031	Contribution
Big Hole River	Upper Big Hole LLC	Stock water well power and pump	\$11,572.50	Contribution
Big Hole River	Upper Big Hole LLC	Irrigation Control Structures	\$24,887.40	Reduced diversions through approved SSP
Big Hole River	Upper Big Hole LLC, Dick Hirschy Cattle Co., Circle 3 Land and Cattle, LLC	Measuring Device (Flume)	\$4,689.70	
Seymour Creek	Reinhardt Ranch Co.	Stock Water Well Infrastructure	\$2,061.38	
Lamarche Creek	Lamarche Creek Ranch	Stock Water Well Infrastructure	\$220.00	
Warm Springs Creek and Swamp Creek	Lapham Ranch Company and John Nelson	Solar Powered Stock Water Pumps (3)	\$14,699.07	

In addition to improvements in irrigation related infrastructure, the Big Hole Grayling CCAA requires reductions to irrigation diversions in response to streamflows dropping below

established seasonal flow targets at each of the five gaging stations (Miner Lakes Road, the mouth of Miner Creek, the Wisdom Bridge, Mudd Creek Bridge, and Dickie Bridge; Figure 1). In 2009, seven landowners reduced irrigation diversions by over 102 cfs in response to streamflows dropping in the Big Hole River (Table 6). Two landowners with approved site-specific plans were contacted on September 19, when flows in the Big Hole River at the Miner Lakes gaging station dropped below the trigger of 20 cfs. Dooling Livestock Company reduced diversions by 4 cfs, effectively ending the diversion of water from the Big Hole River for the year and the Upper Big Hole LLC had already stopped diverting water for the purpose of irrigation for the year.

Table 6. Summary of reduced diversions by enrolled landowners to improve streamflows in 2009.

Date	Landowner	Source	Water Contribution (CFS)
July 31	Erb Livestock	Big Hole River	27
August 19	Erb Livestock	Big Hole River	10
August 26	Erb Livestock	Big Hole River	8
September 2	Peterson Brothers	Big Hole River	5
September 8	Peterson Brothers	Big Hole River	2.5
September 8	Dick Hirschy Cattle Co.	Big Lake Creek	3.0
September 9	Erb Livestock	Big Hole River	2.3
September 17	Erb Livestock	North Fork	25
September 18	Ralston Ranch Co.	Big Hole River	1
September 19	K.L. Spear	LaMarche Creek	2
September 21	Dick Hirschy Cattle Co.	Big Hole River	2.5
September 21	Dick Hirschy Cattle Co.	Unnamed Tributary	4
		of the Big Hole River	
September 24	Jackson Ranch	Big Hole River	5.16
September 25	Robert Wueste	Hamby Creek	2.00
October 1	Jackson Ranch	Big Hole River	2.95
Total			102.41

# VII. Monitoring

The Big Hole Grayling CCAA requires a wide variety of monitoring associated with the restoration activities implemented under this agreement, and the biological responses of the grayling population from those activities. Additional monitoring is conducted to determine compliance with approved site-specific plans by the Participating Landowners, FWP, and USFWS.

#### A. Fish Population Monitoring

In 2009, FWP field personnel surveyed approximately 33 miles of the Big Hole River and 24 miles of tributaries to the Big Hole River using mobile-anode electrofishing techniques to determine the abundance and distribution of grayling within the Big Hole Grayling CCAA Project Area. Of the 6,053 fish captured during population monitoring efforts, 311 were identified as grayling. Of the 311 grayling captured, 202 individuals were considered young of the year (McCullough and Magee 2009).

#### B. FWP Monitoring of Compliance with Approved Site-Specific Plans

The monitoring of compliance with approved site-specific plans occurred on two properties in 2009 (Upper Big Hole LLC and Dooling Livestock Company). FWP field personnel checked the amount of water being diverted by the landowners, the grazing of livestock within riparian pastures, the ability of fish to access fish passage structures and for any evidence of immediate threats of harm or mortality to grayling on the enrolled property. The initial compliance meeting focused on the expectations for monitoring of the riparian grazing and irrigation diversion agreements in the approved site specific plan. The necessary field forms for documenting actions were provided to the landowners at that time.

Table 7. Summary of compliance site-visits conducted by FWP in 2009.

Date	Landowner	Irrigation Withdrawals in Compliance with SSP and Water rights	Grazing of Riparian Pastures in Compliance with SSP	Landowners Monitored and documented Irrigation withdrawals and Riparian Grazing as Agreed to in SSP	Comments
April 30, 2009	Upper Big Hole LLC	N/A	N/A	Yes	Monitoring documents provided and compliance expectations discussed with landowner
June 16, 2009	Dooling Livestock Company	N/A	N/A*	Yes	Monitoring documents provided and compliance expectations discussed with landowner
August 27, 2009	Upper Big Hole LLC	Yes	Yes	Yes	No immediate threats observed; no barriers to fish passage observed
October 29, 2009	Dooling Livestock Company	Yes	N/A*	Yes	No immediate threats observed; no barriers to fish passage observed

<sup>\*</sup>There are no riparian grazing requirements as part of this site-specific plan due to all riparian areas on the enrolled property being considered "Sustainable" (NRCS 2004).

# B. Landowner Monitoring of Riparian Grazing and Irrigation Diversions for Approved Site-Specific Conservation Plans

The Big Hole Grayling CCAA requires that landowners with approved site-specific plans monitor and document irrigation withdrawals at a minimum of every two weeks once a headgate at a point of diversion is opened and when reductions in diversions are required by CCAA when streamflows in the Big Hole River drop below flow targets (FWP and USFWS 2006). Landowners with riparian habitat that is considered either "Not Sustainable" or "At Risk" at the time the site-specific plan was approved must monitor the timing of use, duration; herd class and size of herd grazing in those riparian pastures (NRCS 2004). In 2009, the Upper Big Hole LLC was required to monitor actions associated with riparian grazing and the Upper Big Hole LLC and Dooling Livestock Company was required to monitor irrigation diversions. Both landowners provided FWP with documentation of the monitoring that occurred in 2009.

# VIII. Progress in Implementing Approved Site-Specific Plans

In 2009, two landowners enrolled in the Big Hole Grayling CCAA began implementing approved ten-year site-specific plans. Each site-specific plan contains an implementation schedule for actions designed to enhanced conditions for grayling on the enrolled property. The following are summary tables of actions completed in 2009 on the Dooling Livestock Company (Table 8) and Upper Big Hole LLC (Table 9) properties.

Table 8. Summary of actions in 2009 on the Upper Big Hole LLC property identified in the

Implementation Schedule of the site-specific plan.

Conservation Measure	Location	Expected Date of Implementation	Actual Date of Implementation
Initiate conservation measures to improve streamflows	Enrolled Property	Spring 2009	Spring 2009
Initiate Prescribed Riparian Grazing Plan	Riparian Pastures	Spring 2009	Spring 2009
Surveys for Entrained Grayling	Irrigation Ditches associated with enrolled property	2009	Summer 2009
Provide fish passage through existing diversions	Irrigation Diversions associated with the Enrolled Property	Fall 2013	Fall 2009*
Channel and Riparian Habitat Restoration	Big Hole River flowing through Pasture 3A	Fall 2009	Fall 2009
Removal of non-native fish pond	Spring Creek tributary to Big Hole River on the enrolled property	Fall 2009	Fall 2009**

<sup>\*</sup>Fish passage was provided at one of the irrigation diversions identified as a potential barrier to fish passage in the site-specific plan. The Upper Big Hole LLC has until Fall 2013 to address the one remaining potential barrier to fish passage on the enrolled property.

Table 9. Summary of actions in 2009 on the Dooling Livestock Company property identified in the

Implementation Schedule of the site-specific plan.

Conservation Measure	Location	Expected Date of Implementation	Actual Date of Implementation
Initiate conservation measures to improve streamflows	Enrolled property	Spring 2009	Spring 2009
Surveys of Berry Creek and Little Swamp Creek for the presence of westslope cutthroat trout	Little Swamp Creek and Berry Creek	2009 or 2010 or 2011	Summer 2009*
Improvements to irrigation infrastructure on Little Swamp Creek	Little Swamp Creek	Fall 2014	Fall 2009
Surveys for entrained grayling	Irrigation Ditches associated with enrolled property	2009	Summer 2009
*No westslope cutthroat trout	or rainbow-cutthroat hybrids	were identified during the si	urveys.

# IX. Summary of Estimated Take Associated with the Big Hole Grayling CCAA

In 2007, the USFWS determined that the grayling population in the upper Missouri River basin did not qualify as a DPS; thus it was unwarranted for listing under the ESA. This decision removed grayling from the Candidate Species List. Due to the current legal status of grayling, ESA – defined take (harm, harass, or kill) did not apply to the implementation or monitoring of the Big Hole Grayling CCAA in 2009.

# X. NRCS Special Funding

In 2009, NRCS provided funding for a full-time technician with DNRC. The funding for this position ended at the end of November and was not renewed. The hope is that funding for additional staff for DNRC and FWP will be identified in the near future.

# XI. Awards and Recognition

Mike Roberts, hydrologist for DNRC, was recognized by FWP for his efforts and dedication to improving the aquatic resources of the upper Big Hole River, and for his dedication to the Big Hole Grayling CCAA effort. Jeff Everett, biologist with the USFWS, was recognized by the American Fisheries Society, for his expertise in managing natural resources in southwest Montana. Emily Rens, Riparian Conservation Specialist for FWP was recognized by the Big Hole Watershed Weed Committee for her efforts to map and control noxious weeds in the upper Big Hole basin. Calvin Erb was recognized with a Montana Neighbor Award for his commitment to enhancing riparian and river habitat conditions on the family's ranch in the upper Big Hole and his leadership in the Big Hole Grayling CCAA process.

#### XII. Literature Cited

McCullough, A. and J. Magee. 2009. Arctic Grayling Recovery Program: Montana Arctic Grayling Monitoring Report 2009. Submitted to: Fluvial Arctic Grayling Workgroup. Montana Fish, Wildlife & Parks, Bozeman, MT. *In Review*.

Montana Fish, Wildlife & Parks and the U.S. Fish and Wildlife Service. 2006. Candidate Conservation Agreement with Assurances for Fluvial Arctic Grayling in the Upper Big Hole River. 153 pp.

Natural Resources Conservation Service. 2004. Riparian Assessment: Using the NRCS Riparian Assessment Method. Natural Resources Conservation Service, Bozeman, Montana. 43 pp.

Petersen, A. and P. Lamothe. 2006. Candidate Conservation Agreement with Assurances Big Hole River Rapid Assessment Findings Report. Submitted to: Fluvial Arctic Grayling Workgroup. Montana Fish, Wildlife & Parks, Bozeman, MT.

Womack, K.L. 2008. Factors affecting landowner participation in the Candidate Conservation Agreements with Assurances program. Utah State University. 137 pp.

#### **Acknowledgements**

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