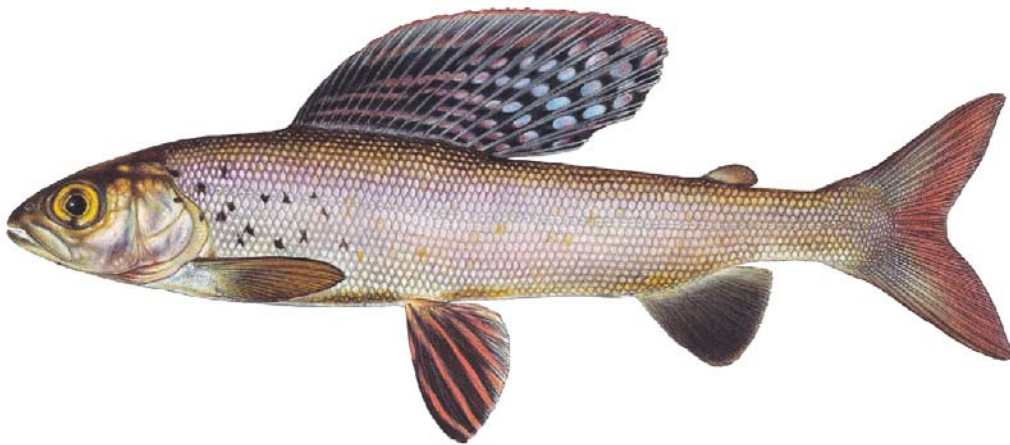


Memorandum of Understanding
Concerning
Montana Arctic Grayling Restoration



August 2007

MEMORANDUM OF UNDERSTANDING

among:

MONTANA FISH, WILDLIFE & PARKS (FWP)
U.S. BUREAU OF LAND MANAGEMENT (BLM)
U.S. FISH & WILDLIFE SERVICE (USFWS)
U.S. FOREST SERVICE (USFS)
MONTANA COUNCIL TROUT UNLIMITED (TU)
MONTANA CHAPTER AMERICAN FISHERIES SOCIETY (AFS)
YELLOWSTONE NATIONAL PARK (YNP)
MONTANA ARCTIC GRAYLING RECOVERY PROGRAM (AGRP)
USDA NATURAL RESOURCE CONSERVATION SERVICE (NRCS)
**MONTANA DEPARTMENT OF NATURAL RESOURCES AND
CONSERVATION (DNRC)**

concerning

MONTANA ARCTIC GRAYLING RESTORATION

BACKGROUND

Montana's Arctic grayling *Thymallus arcticus* is a unique native species that comprises an important component of Montana's history and natural heritage. Fluvial (river dwelling) Arctic grayling were once widespread in the Missouri River drainage, but currently wild grayling persist only in the Big Hole River, representing approximately 4% of their native range in Montana. Native lacustrine/adfluvial populations historically distributed in the Red Rock drainage and possibly the Big Hole drainage have also been reduced in abundance and distribution. Arctic grayling have a long history of being petitioned for listing under the Endangered Species Act (ESA). Most recently (in April 2007) the U. S. Fish and Wildlife Service (USFWS) determined that listing of Arctic grayling in Montana under ESA was not warranted because it does not constitute a distinct population segment as defined by the ESA. On May 15th 2007, the Center for Biological Diversity announced its 60-day Intent to Sue the USFWS regarding the recent grayling decision. The Montana Arctic Grayling Recovery Program (AGRP) was formed in 1987 following declines in the Big Hole River Arctic grayling population, and over concerns for the Red Rock population. The AGRP's technical workgroup, the Arctic Grayling Workgroup (AGW)— is chaired by Montana Fish, Wildlife & Parks (FWP)— and includes biologists from universities, state and federal resource management agencies, and representatives of private interest groups. The initial goals of the AGRP were to: identify and address factors limiting grayling in the Big Hole River in order to secure that last remaining fluvial population, and to develop a fluvial brood stock from the Big Hole population to increase the distribution of grayling into suitable sites within the historic range. The AGW developed a Restoration Plan that established a timeline to meet recovery goals. The long-term (by the year 2020) goal is to, establish at least five

stable, viable populations distributed among at least three of the major river drainages within the historic range.

ACCOMPLISHMENTS

Big Hole Grayling

Since the formation of the AGRP in 1987, conservation efforts have progressed dramatically. In the last twenty years, we have investigated temporal and spatial characteristics of angling use and hooking mortality to assess the effects of angling on grayling, and adjusted fishing regulations to protect grayling. Research studies were completed to assess interactions with sympatric native and non-native fish species. Instream flows, water temperatures and habitat conditions have been monitored to identify and address specific habitat problems. The Big Hole River grayling population has been monitored annually since the late 1980s to assess population demographics and determine the effectiveness of conservation efforts. We have worked one-on-one with local landowners to establish working relationships, develop conservation strategies and have actively promoted educational efforts. Subsequently, we have served as technical advisors for the Big Hole Watershed Committee (BHWC) to promote habitat and water conservation efforts with local interests and landowners. Through these efforts we have established working landowner relationships and developed partnerships with agencies and non-government interest groups that promote conservation programs and habitat enhancement efforts in the Big Hole River drainage. These relationships have resulted in the implementation of the Candidate Conservation Agreement with Assurances Programs (CCAA) for Big Hole Arctic grayling.

A CCAA is an agreement between the USFWS and any non-federal entity whereby non-federal property owners who voluntarily agree to manage their lands or waters to remove threats to species at risk of becoming threatened or endangered receive assurances against additional regulatory requirements should that species be subsequently listed under the ESA. In 2004, FWP assessed funding and staffing needs to implement a CCAA in the Upper Big Hole Valley. FWP worked with landowners, USFWS, Natural Resource Conservation Service (NRCS), Department of Natural Resources and Conservation (DNRC), BHWC, Montana Council Trout Unlimited (TU), and Big Hole River Foundation (BHRF) to develop interest, enhance relationships and establish partners for the CCAA program. The goal of the CCAA program is to secure and enhance the population of fluvial Arctic grayling within the upper reaches of the Big Hole River drainage. Under the CCAA, FWP will hold an ESA Section 10(a)(1)(A) Enhancement of Survival Permit issued by the USFWS. Once this CCAA is executed, FWP will issue Certificates of Inclusion to non-federal property owners within the project area who agree to comply with all stipulations of the CCAA, and agree to develop an approved site-specific plan. Site-specific plans will be developed with each landowner by an interdisciplinary technical team made up of individuals representing FWP, USFWS, NRCS, and DNRC. Conservation measures under the agreement will: 1) Improve streamflow, 2) Improve and protect the function of streams and riparian habitats, 3) Identify and reduce or eliminate entrainment threats for grayling, and 4) Remove barriers

to grayling migration. As of May 22, 2007, 30 landowners have enrolled over 140,000 acres of private lands into the Big Hole CCAA. This represents the largest CCAA in the history of the Endangered Species Act.

Fluvial Restoration Efforts

As grayling conservation efforts progressed in the Big Hole River, a fluvial brood stock was developed in consultation with the University of Montana Conservation Genetics Lab. Wild Big Hole River grayling were used to develop a genetically diverse brood stock. This brood stock has established an effective egg take program. Through the brood stock program three brood rearing sites have been secured (Green Hollow II Reservoir, Axolotl Chain of lakes, and at Yellowstone River State Trout Fish Hatchery). Each spring, progeny of these brood fish (descendants from the fluvial Big Hole grayling) are spawned and taken to state hatcheries to eye-up or rear for restoration efforts.

Restoration sites have been identified based on historic distribution, current habitat conditions, and other factors that may contribute to the success of reintroduction efforts. Restoration efforts began in 1993 on Cougar Creek, a tributary to Duck Creek in Yellowstone National Park (Madison River drainage; Kaeding et al. 1994). Chosen because subsurface flow physically isolates it from adjacent streams (Jones et al. 1979), Cougar Creek was stocked with age-0 and age-1 fluvial Arctic grayling (Big Hole River progeny) at densities of 50 fish/km in 1993, 1994, and 1995 (approximately 800 fish each year; Kaeding et al. 1995; YNP unpublished data). Initial surveys suggested that some grayling remained in Cougar Creek soon after the introductions; however, none could be found by electrofishing crews in 1998 and the population did not persist long term (Koel et al. 2007). In 1997, restoration began on the upper Ruby River, and was expanded in 1999 to the North and South Forks of the Sun River and the lower Beaverhead River, and continued in 2000 in the Missouri River Headwaters. Initially these sites were stocked for 4 years with age 0 or age 1 grayling raised in state fish hatcheries. Efforts were hindered by high mortality of stocked grayling and persistent drought (low flows and high temperatures). In 2003, efforts to use remote site incubators (RSIs) were initiated on the North Fork of the Sun River and in the Upper Ruby River. Grayling produced from RSIs have had much better survival; however, RSI-hatched grayling have not yet established self-sustaining populations. With adequate egg production, RSI introduction efforts will continue in the North Fork of the Sun River and the Upper Ruby River through 2008. After that time, the efficacy of the program will be evaluated and decisions will be made regarding future actions.

Red Rock Grayling

The USFWS has conducted monitoring, restoration efforts, and other research on the Arctic grayling of Red Rock Lakes National Wildlife Refuge since the early 1990s. Following declines in the number of spawning adults, a number of research projects were implemented to better understand the Red Rock population. These studies assessed grayling movement, predation, habitat needs and susceptibility to whirling disease. Gametes were collected from the Red Rock population and used to develop a brood population located in Rogers Lake. Periodic supplementation of Red Rocks gametes into

the Rogers Lake population is used to maintain genetic diversity. A basin-wide habitat assessment is needed to define restoration and conservation strategies of this population.

PURPOSE

Signatories to this agreement recognize the plight of the Arctic grayling in Montana and are committed to restoration of this species. The purpose of this Memorandum of Understanding (MOU) is to: (1) formally renew commitment and cooperation for an additional five-year period between State and Federal agencies and the private sector to direct Montana Arctic grayling restoration efforts, (2) facilitate effective and efficient development of fiscal proposals and use of appropriated or secured funds for the restoration project(s), and (3) promote and coordinate the cooperative restoration program.

The restoration efforts continued or initiated by this MOU will incorporate the most promising and proven elements of the restoration and research plans, and will build upon success and knowledge gained over the past five years. The goal of this restoration effort will be to realize increases in the Big Hole River fluvial Arctic grayling population, continue reintroduction efforts to establish additional self-sustaining populations, and to gain a better understanding of habitat needs and implement restoration activities that benefit the Red Rock Arctic grayling population.

AUTHORITY

- A. The USDI Bureau of Land Management enters this agreement under the authority of the Federal Land Policy and Management Act of 1976.
- B. The USDA Forest Service—Each National Forest enters this agreement under the authority of the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976.
- C. Montana Fish, Wildlife & Parks enters this agreement under the authority of Title 87-1-210, MCA, and Title 87-5-101, MCA, et seq.
- D. The USDI Fish and Wildlife Service enters this agreement under the authority of the Endangered Species Act (as amended), the Migratory Bird Treaty Act of 1918, the North American Wetlands Conservation Act, the National Wildlife Refuge System Administration Act of 1966, and the Fish and Wildlife Coordination Act (16 U.S.C. 661-667e).
- E. Yellowstone National Park (USDI) enters this agreement under the authority of the Organic Act, the Clean Water Act, the Endangered Species Act, and the Wilderness Act.
- F. Montana Department of Natural Resources and Conservation enters in this agreement under the authority of Title 85-1-203, MCA, and Title 85-2-112, MCA.

- G. Montana Council of Trout Unlimited and the Montana Chapter of the American Fisheries Society enter this agreement under the authority of their bylaws.

ORGANIZATIONAL STRUCTURE

Signatories agree to establish a cooperative Montana Arctic Grayling Recovery Program and to provide general oversight for this project. In addition, two subcommittees will be formed to provide technical direction and financial management.

The AGW will serve as the Restoration Technical Committee and will be composed of representatives from participating signatory agencies, and the FWP fisheries biologist hired to work on this project. This group will be responsible for developing and carrying out the annual work plan that details work activities to be accomplished each year, as well as for providing long-term direction for restoration efforts. This group will call on experts as needed for assistance on an ad-hoc basis.

The Restoration Financial Committee will be composed of the FWP Native Species Program Manager, and the FWP Fisheries Biologist hired to work on this project, and an appointee from the AGRP (currently Buddy Drake). This committee will be responsible for the management of funds contributed to the project.

SCOPE OF PROJECT

The restoration program will work to identify and remedy those factors that are limiting Arctic grayling survival in Montana, for fluvial, lacustrine and adfluvial populations. Emphasis will be placed on creating conditions that will lead to continued restoration of the Big Hole River and Red Rock Lakes populations as well as establishing or reestablishing additional populations in suitable habitats.

Project efforts will include:

- Assessment of limiting factors and habitat needs for the Big Hole River and Red Rocks grayling populations.
- Revision and subsequent implementation of the Montana Arctic Grayling Restoration Plan
- Big Hole River habitat restoration efforts focusing on implementation of the CCAA Program.
- Population monitoring and continued assessment of distribution and movements in an attempt to better understand life history strategies and population abundance.
- Brood stock management and gametes collections.
- Identify additional, promising locations for reestablishment of Arctic grayling, continue restoration efforts, and monitoring of these efforts to determine success

RESPONSIBILITIES, PROCEDURES AND TERMS OF AGREEMENT

By signing this Agreement, the signatories accept the purpose and goals contained herein, will incorporate them into their respective planning and budgeting processes, and will strive to accomplish the purpose and goals of the recovery program. Further, the signatories commit to use their budgeting process to gain the resources necessary to work toward accomplishment of the purpose and goals of this Agreement. Implementation of this Agreement, and achievement of its purpose and goals should ensure the long-term viability of Arctic grayling. For the period set forth in this MOU, FWP and the other signing entities of this MOU agree to do the following:

A. FWP agrees to:

1. Provide 1.0 FTE for a biologist to oversee the grayling recovery program (salary and benefits).
2. Provide 0.33 FTE for a fish technician (salary and benefits).
3. Provide \$24,000 for operations adjusted as needed.
4. Collect gametes, complete fish health inspections, eye up fertilized eggs, raise and transport eggs or fish as needed for restoration efforts.
5. Hire project personnel, and purchase appropriate equipment, and administer funds and identify, develop and implement monitoring, research and habitat conservation efforts for the Arctic Grayling Recovery Program.
6. Chair the Arctic Grayling Workgroup, hold at least one coordination meeting per year among the workgroup, and distribute meeting minutes, annual reports, and other relevant information as it becomes available.

B. As applicable, federal agencies will provide funding and/or in-kind support to implement restoration efforts. Through the contributions of the signing entities and the fund raising activities of the Financial Committee, funds for special studies and management practices to remove/minimize grayling population limiting factors will be acquired.

C. The signatories collectively agree:

To support the grayling restoration program, depending on availability of appropriated funds, priorities and agency/organization contracting or spending authorities. However, nothing in this MOU shall obligate Federal agencies to expend appropriations or to enter into any contract or other obligation. Specific work projects or activities that involve the transfer of funds, services, or property among the parties to this MOU will require the execution of separate agreements of contracts, contingent upon the availability of funds as appropriated by Congress or the Montana Legislature. Each subsequent agreement or arrangement involving the transfer of funds, services or property between the parties to this MOU must comply with all applicable statutes and regulations, including those statutes and regulations applicable to procurement activities. Appropriate

statutory authority must also independently authorize each subsequent agreement or arrangement.

This MOU does not modify any existing agreements between the signing entities.

EFFECTIVE DATE AND DURATION

The period of performance of the MOU is from July 1, 2007 through June 30, 2012.

REFERENCES

Jones, R. D., and six coauthors. 1979. Annual project technical report for 1978: fishery and aquatic management program. U.S. Fish and Wildlife Service, Yellowstone National Park. 311 pp.

Kaeding L. R., and four coauthors. 1994. Fishery and aquatic management program in Yellowstone National Park: 1993 annual report. U.S. Fish and Wildlife Service, Yellowstone National Park. 71 pp.

Kaeding L. R., and four coauthors. 1995. Fishery and aquatic management program in Yellowstone National Park: 1994 annual report. U.S. Fish and Wildlife Service, Yellowstone National Park. 38 pp.

Koel, T. M., J. L. Arnold, P. E. Bigelow, P. D. Doepke, B. D., Ertel, and M. E. Ruhl. 2007. Yellowstone Fisheries & Aquatic Sciences: Annual Report, 2006. National Park Service, Yellowstone Center for Resources, Yellowstone National Park, Wyoming, YCR-2007-XX.

SIGNATURES

Montana Fish, Wildlife & Parks

M. Jeff Hagener 8/9/07
M. Jeff Hagener, Director Date

U.S. Forest Service

Kathleen M. Malhotra 8-13-07
✓ Tom Tidwell, Regional Forester Date

Bureau of Land Management

Gene R. Terland 8/9/07
Gene Terland, State Director Date

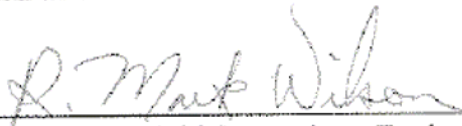
Yellowstone National Park

Chris Lehnertz August 13, 2007
Chris Lehnertz, Deputy Superintendent Date

Montana Trout Unlimited

Bruce Farling 10/3/07
Bruce Farling, Executive Director Date


U.S. Fish and Wildlife Service

 7-27-07
R. Mark Wilson, Field Supervisor, Ecological Services Date

Arctic Grayling Recovery Program

 7/28/07
Buddy Drake, Coordinator Date

USDA Natural Resource Conservation Service

 *ACTING* 9-11-07
Carrie Mosley, Acting State Conservationist Date

Montana Department of Natural Resources and Conservation

 7/27/07
Mary Sexton, Director Date