FACT SHEET

South Fork Flathead Watershed
Westslope Cutthroat Trout Conservation Program

MAY 2008

Montana Fish, Wildlife & Parks, Bonneville Power Administration, U. S. Forest Service

WHY WE'RE DOING THE PROJECT: The primary purpose of the project is to conserve native westslope cutthroat trout in the South Fork of the Flathead River. The South Fork drainage is the major stronghold of westslope cutthroat within its range; however, persistence of this native trout is threatened by hybridization with nonnative Yellowstone cutthroat and rainbow trout that were historically stocked in headwater lakes. This project represents one of the very few opportunities where threats from introduced populations of non-native fish can be reduced or eliminated. The project has been in the planning stages for years and was approved last year after a Montana Fish, Wildlife & Parks (FWP) environmental assessment and a federal environmental impact statement developed by Bonneville Power Administration (BPA) and the Flathead National Forest (FNF). The project is funded by BPA through its resident fish mitigation program.

DESCRIPTION OF THE PROJECT: The project will treat up to 21 high mountain lakes with rotenone or other fish toxicants to remove previously stocked fish and their offspring so they won't hybridize with westslope cutthroat. Rainbow trout and Yellowstone cutthroat trout readily hybridize with native westslope cutthroat and produce fertile hybrids that produce more young. This project is a fishery replacement project, not a fishery removal project. The summer following rotenone treatment genetically pure westslope cutthroat will be stocked to reestablish the fishery. "Swamping" or over-planting genetically pure cutthroat in lakes with hybrids, has seen limited success in some lakes. We will continue to monitor the amount of hybridization in the candidate lakes and investigate continued swamping as a method to rehabilitate some lakes without using toxicants.

EXTENT OF THE PROBLEM: Of 350 or so lakes in this watershed, 50 support fish populations. Of these 50 lakes, 21 contain nonnative trout populations. These lakes serve as sources of continued hybridization in downstream waters, potentially threatening westslope cutthroat trout in the entire South Fork watershed. All 21 lakes are on public lands; 11of the lakes are in the Bob Marshall Wilderness Area and 8 lakes are in the Jewel Basin Hiking Area.

TOXICANTS*:* Rotenone is commonly used in fish management actions to remove unwanted fish populations, including wilderness and special use areas. This technique has been successfully used in the past to rehabilitate five Jewel Basin lakes and one lake within the Bob Marshall Wilderness. Since 1948, 132 lakes have been successfully treated in FWP Region 1.

A few facts about rotenone:

- Rotenone is an organic compound derived from certain plants in the pea family.
- Rotenone works by disrupting cell function. It will affect gill breathing organisms variably, depending on concentration.
- Rotenone quickly breaks down naturally to harmless organic compounds. The rate of breakdown depends on environmental conditions such as temperature and sunlight, but its natural half-life is approximately two weeks.

DISTRIBUTION OF EFFORT: Only one or two lakes will be treated each year for approximately the next ten years. To the extent possible, we will also minimize the number of lakes treated in any drainage in any given year. Each drainage will maintain some lake fishing opportunities throughout the treatment period.

LAKES TREATED IN 2007

- **Black Lake:** Fisheries crews completed the rotenone project on Black Lake in the Jewel Basin Hiking Area on September 28. The project went very well and it appears that an effective kill of the hybrid trout was obtained. Equipment, including a boat/motor, rubber raft, rotenone barrels, and application gear, was flown in by helicopter and sling on September 25. Weather was unsuitable for the air-drop of rotenone on September 26. On September 27, a single engine air tanker (SEAT plane) dropped 1,260 gallons of rotenone in three drops into Black Lake. Crews then distributed 210 gallons of rotenone using a boat/motor with a nozzle set-up. Crews also applied rotenone to a small lake just downstream from Black Lake. A number of drip stations were set up and operated for 8 hours on small tributaries around Black Lake and in the stream below the lake.

  Fish began dying almost immediately upon application of rotenone. Based on observations along the shoreline and across the lake surface a very thorough kill was obtained. Trout from fingerling size up to 18 inches were noted. The majority of fish sank quickly to the bottom of the lake. Fish along the shoreline were collected and transported offshore to be sunk to the bottom. On September 28, all equipment, barrels, and tools were sling-lifted out of the area. Crews walked in and out during the project. Black Lake will be re-stocked with pure westslope cutthroat trout in the summer of 2008.

- **Blackfoot Lake:** Fisheries crews completed the rotenone project on Blackfoot Lake in the Jewel Basin in a single day on October 8. Treatment included boat application of 65 gallons of rotenone lake-wide. Three drip stations and backpack spray application were used to distribute an additional two gallons of rotenone in three inlet tributaries. A relatively small amount of rotenone was needed for this lake due to its small water volume. Four helicopter flights transported the boat, rotenone barrels, and other equipment to the site.

  Blackfoot Lake supported one of highest levels of rainbow trout hybridization in the South Fork Flathead drainage. Hybrid trout ranging in size from fry to 18 inches were noted. Many fish sank to the bottom after treatment. Other fish were gathered and sunk. These fish will provide nutrients to the food chain to aid the re-establishment of

a westslope cutthroat trout fishery beginning next summer. Blackfoot Lake will be re-stocked with pure westslope cutthroat trout in the summer of 2008.

MONITORING AND EVALUATION: All treated lakes will be evaluated for reestablishment of plankton, insect, and amphibian populations. Fisheries will be monitored for success in re-establishment and growth rates of fish. The entire program will be implemented in an adaptive manner to optimize efficiency and ensure the least impact to recreational users. A formal reevaluation of the program will occur 5 years into the project to determine whether or not to proceed further, although monitoring and evaluation will be ongoing at all times as treatments proceed and annual reports will be given each spring to present the previous year's activities and discuss upcoming treatments.

For more information, contact FWP at 752-5501.