



Montana Fish, Wildlife & Parks

ENVIRONMENTAL ASSESSMENT AND DECISION NOTICE FOR AN EXPERIMENTAL REMOVAL OF LAKE TROUT IN SWAN LAKE, MONTANA

August 3, 2009

Project Proposal and Justification:

Montana Fish, Wildlife & Parks (MFWP) proposes to conduct a 3-year lake trout removal effort in Swan Lake, Montana, to determine the feasibility of suppressing the population. The proposed action would involve contracting with professional fishery consultants to conduct gill netting over a 3-week period beginning late August or early September 2009. Additionally, FWP personnel will remove spawning adult lake trout during the months of October and November by gill netting along known lake trout spawning sites. These activities would be conducted annually for three years. Funding has been secured for the first two years of the project and is being pursued for the third. Obtaining the final year of funding will likely depend on the relative success of the first two years of the project. Information obtained from the proposed action will help to determine feasibility and effectiveness of alternatives for managing the lake trout population (e.g., suppression of the population). All lake trout netted during the project will be killed; those that are salvageable and of suitable size for consumption will be field dressed and donated to food banks or other facilities.

The Swan Valley has historically been home to a large, stable, and healthy bull trout population. Swan Lake has popular recreational fisheries for bull trout, kokanee, and northern pike. However, in 1998 anglers began to occasionally catch adult-sized (20-30 inch) lake trout from Swan Lake and the Swan River. This caused alarm because lake trout are not native and are notorious for rapidly expanding and dominating fish communities in lakes at the expense of bull trout and kokanee salmon. In the years following the original discovery, catch rates of lake trout have increased and natural reproduction has been documented. Efforts in 2007 and 2008 were made to examine the population size and structure of the expanding lake trout population, and this project represents a progression of these efforts. The goal of this project is to determine the feasibility of using gill nets as a management tool for reducing the population of lake trout in Swan Lake.

Location of Project:

This project will be conducted on Swan Lake, located approximately 10 miles southeast of the city of Bigfork, Montana. Swan Lake drains to the Swan River, a major tributary to Flathead Lake.

Environmental and Social Impacts:

Conducting gill netting to reduce lake trout numbers will have unintended impacts to the bull trout population through bycatch-related mortality. Mortality associated with the bycatch of bull trout will be minimized by rapid removal and resuscitation of all live bull

trout captured in the nets, as was done during the 2007 and 2008 research efforts. Additionally, sampling will be conducted during the time in which a majority of adult bull trout have migrated out of the lake and into Swan River tributaries in preparation for fall spawning. A portion of the bull trout captured will be dead and these fish will be retained and used for additional research purposes. Overall, bull trout bycatch mortality during lake trout gill netting will likely be insignificant relative to the potential direct impacts of lake trout on the bull trout population through competition and predation. Additionally, bycatch of other fish species is expected to be minimal, as was observed during 2007 and 2008 netting efforts.

Some anglers may be temporarily disrupted, precluded from fishing in chosen locations, or disturbed by sampling activities. However, due to the timing of this project and short duration, such effects will be minimal.

Public Involvement:

In compliance with the Montana Environmental Policy Act, a draft environmental assessment (EA) was prepared and released for a 30-day public comment period from June 8 through July 8, 2009. Legal ads were placed in local and surrounding area newspapers, a news release was released by FWP, and notices were mailed to selected persons, legislators, and several conservation groups. Copies of the EA were available for viewing at the Montana State Library in Helena, the Flathead County Libraries in Kalispell and Bigfork, the Polson City Library, the Seeley Lake Library, the Swan Ecosystem Center in Condon, and the Swan Lake Library and Swan Lake Trading Post in the town of Swan Lake. Copies of the EA were also available at the FWP Region 1 headquarters in Kalispell and electronically on the FWP web site. A public meeting was conducted at the US Forest Service Ranger Station in Bigfork on July 1, 2009.

Public Comments/Responses:

FWP received 22 written comments by mail or e-mail and received 7 oral comments at the public meeting. Of the written comments, 14 supported the proposed action, 7 were in opposition, and one comment suggested utilizing anglers for suppression, but did not comment either for or against the proposal. Comments received during the public meeting supported the project, though one individual also expressed interest in utilizing anglers for lake trout control.

Several key questions were raised during the public comment period, and responses to them are as follows:

Why not use anglers to reduce the number of lake trout (through derbies and/or bounties)?

The lake trout population in Swan Lake is new and not currently at carrying capacity. Therefore, the number of lake trout in the size range vulnerable to angling has yet to reach a density where angler catch rates accomplish the goal of substantially reducing lake trout numbers. In order to reach the mortality rate targets specified in the EA, a considerably larger number of fish will need to be removed than would be possible through angling alone. An additional problem with using anglers to reduce lake trout numbers also lies in the anglers' ability to distinguish between lake trout and bull trout, a species listed as threatened under the Endangered Species Act. Limited angling harvest of bull trout is allowed from Swan Lake, but the two species are easily mistaken. Thus,

encouraging anglers to keep lake trout through incentives may lead to increased (although inadvertent) bycatch of bull trout.

Has this type of project worked in water bodies in other areas?

Lake trout removal projects have been and continue to be conducted in other water bodies with, as yet, unproven success. However, several of these water bodies are considerably larger than Swan Lake, potentially more complex in terms of habitat and number of spawning locations, and have well established lake trout populations. The relatively small size, relatively shallow depth, and simple shape or bathymetry of Swan Lake, as well as the newness of the lake trout population, increase the chances of success in a project of this type. Additionally, research efforts in 2007 and 2008 have identified two localized lake trout spawning areas, thereby increasing our confidence in developing methods to target adult lake trout. This project represents an excellent opportunity to learn the size and type of water body from which lake trout populations can be successfully reduced, and what tools provide the most cost effective and efficient means of accomplishing this goal. Success criteria were identified in the EA to measure whether this project meets its goals.

What is the population estimate of bull trout in Swan Lake, and is there evidence that bycatch from this project will adversely affect the bull trout?

The adult bull trout population in Swan Lake is estimated through annual redd (spawning bed) counts. Redd count numbers are expanded to represent the number of spawning fish based on research by Fraley and Shepard (1989). The most recent basin-wide redd count survey for the Swan Lake population (2008) counted 590 redds. Adding another 25% for redds in areas not surveyed, and redds that were missed or superimposed, results in a total of ~738 redds. Using the standard 3.2 adult bull trout per redd yields a total of 2,362 spawning fish. Assuming that bull trout spawn in alternate years, that number can be doubled for a total of 4,724 adult bull trout. This last number represents the most recent estimate of the Swan Lake adult bull trout population.

Bycatch of nontarget fish species, such as bull trout, is certainly a concern for a project of this type. However, the timing and location of the netting will minimize the number of bull trout captured. The proposed project involves netting during a time in which many adult bull trout have left the lake and are residing in the Swan River and associated tributaries in preparation for spawning. Additionally, netting is conducted during a time in which the lake is completely stratified, and nets are set only in deep-water habitat below the thermocline. These two measures result in the majority of catch being lake trout. Netting efforts in 2007 and 2008 resulted in 378 and 240 bull trout being caught respectively. The lower number caught in 2008 is a result of refining sampling to reduce bull trout bycatch. Of the bull trout captured, the data suggests that approximately half of those died. These dead fish represent approximately 2.5% of the total adult bull trout population.

How is this project being funded?

Funding for this project is being provided through cooperation of the Swan Valley Bull Trout Working Group. This work group is comprised of Montana Fish, Wildlife & Parks (MFWP), US Fish and Wildlife Service, US Forest Service, Montana Department of Natural Resources and Conservation, the Confederated Salish and Kootenai Tribes, and Montana Trout Unlimited. Funding has been secured for the first two years of the project with contributions from work group members and is being pursued for the third. While

the funding shortfall is of concern, plans are in place to acquire the remaining funds through grant writing and additional contributions from the partners.

Have lake trout been found in the upstream of Swan Lake in the upper Swan River, Lindbergh Lake, or Holland Lake?

Lake trout were first documented in the Swan River drainage in 1998 when an angler caught a large lake trout in the Swan River upstream of Swan Lake near the mouth of Woodward Creek. Since that time lake trout catch, both by anglers as well as MFWP, has continued to increase. This increase in catch has not been limited to Swan Lake, but rather has increased in the Swan River upstream of the lake as well. In 2008, MFWP received numerous reports of lake trout being caught by anglers well upstream of Swan Lake, indicating that these fish may be moving up the system. MFWP confirmed this when a lake trout was captured near the confluence of Holland Creek and the Swan River. This was cause for alarm among scientists and increased concern that lake trout would eventually make their way into Holland and Lindbergh Lakes. This fear was then realized in 2009 when, following up on angler-reported lake trout catches, four lake trout were netted by MFWP in Lindbergh Lake during standard spring netting activities. This finding occurred after this EA was released for public comment. While it is unfortunate to see the expansion of lake trout in the Swan River drainage, this observation reinforces the need to examine management alternatives related to minimizing the impacts to native fish populations.

The recent discovery of lake trout in Lindbergh Lake may affect the efforts to reduce the lake trout population in Swan Lake. However, little is currently known about the size of the lake trout population in Lindbergh Lake and how much downstream migration is occurring from this potential source. Increased monitoring of the newly established population will be considered a priority, and efforts will be coordinated through the Swan Valley Bull Trout Working Group. This information will be reviewed annually throughout the proposed 3-year project.

What will happen to this project after the 3-year period is over?

The goal of the proposed project is to determine the feasibility of management alternatives related to reducing the number of lake trout in Swan Lake. The evaluation criteria outlined in the environmental assessment have been created to answer specific questions with regard to the feasibility of long-term management of lake trout. These criteria examine whether we can achieve lake trout mortality rate targets, how the lake trout population responds to increased mortality rates, and how other fish populations respond to increased or decreased lake trout abundance. Our intention is to use the data collected in this 3-year project to develop long-term, cost-effective methods for minimizing the effect of lake trout on bull trout and kokanee fisheries.

Why don't you increase or remove lake trout limits and decrease bull trout limits?

The lake trout fishery is still developing and lake trout are not regularly caught, so the standard 10 lake trout limit is not limiting harvest. As noted above, there is a problem with anglers not being able to distinguish between lake trout and bull trout. Increasing the lake trout limit would likely have the unintended effect of increasing accidental bull trout harvest.

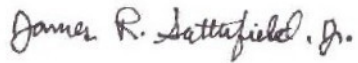
The bull trout limit is currently 1 fish per day and in possession. In addition, anglers are being very conservative in harvesting only a small portion of the bull trout they catch.

The proposed netting and an ongoing creel survey will provide updated information, and the need for regulation changes will be reviewed annually.

Decision Notice:

Newly introduced lake trout pose an imminent threat to the native bull trout and kokanee populations of Swan Lake. Because of the immediacy of this threat, this project serves to accomplish two objectives. First, this project represents an important step in furthering our understanding of lake trout management alternatives in Swan Lake. Evaluating the cost effectiveness and efficiency of current tools for reducing lake trout numbers will aid fisheries managers in future management decisions related to lake trout in the Swan River drainage. Second, this 3-year netting effort will likely result in a significant portion of the lake trout population being removed from the system. While this netting represents an experiment to determine the feasibility of management alternatives, it also begins to lessen the impacts lake trout will have if left unchecked in Swan Lake.

Based on the comments received during the public comment period for the draft EA, I recommend that the proposed project be implemented. I will require that in June of each year the results of the previous year's work be made available to the public and that the results will be evaluated to determine whether success criteria are being met and whether techniques need to be adaptively changed or the project terminated.



August 3, 2009

James R. Satterfield Jr., Ph.D.
Regional Supervisor

Date