

## **STATUS: COOPERATIVE SWAN LAKE FISHERIES MANAGEMENT PROJECT, March 2008**

***PURPOSE OF THE PROJECT:*** The purpose of the interagency Swan Lake Fisheries Management Project is to estimate the population of non-native lake trout in Swan Lake, identify areas used by spawning lake trout, and assess the feasibility of methods to reduce lake trout numbers. Lake trout were first noted in the Swan drainage in 1998 and recent evidence indicates the population is growing rapidly. Biologists are concerned that these predacious fish threaten the popular bull trout and kokanee fishery in the lake. Swan Lake is presently one of the few places in the nation where anglers can keep one bull trout per day.

### ***RESULTS OF THE FALL LAKE TROUT NETTING PROJECT:***

***Fish Sampling:*** The 2007 fall fish sampling took place over a three-week period from September 17-October 4. Short-set gill nets were used to capture live fish for marking and release. Most nets were set in water 80 feet or deeper. The goal of the sampling was to release as many tagged live lake trout as possible, so that a mark-and-recapture population estimate could be achieved. Biologists set a total of 26.5 miles of gill net, at various locations around Swan Lake. The nets were checked about every two hours during morning and evening. In addition to gill nets, two deep-water trap nets were set but caught relatively few fish. The total catch included 2,156 lake trout. Of these 735 were mortalities, 30 were sonic-tagged, and 1,391 received small tags and were released to aid in population estimates.

***Lake Trout Population Estimate:*** Based on mathematical calculations, biologists estimated that there were at least 3,000 lake trout between 9 and 34 inches in Swan Lake. This estimate may be low, but if it were confirmed with further evaluation, it would indicate that a very large proportion of the lake trout in Swan Lake could be caught using gill nets.

***Radio-tagged Lake Trout:*** Biologists tracked 19 radio-tagged fish from October 11 to November 15, during their spawning period. So far, it appears that the steep areas of the lakeshore along the highway cut is probably a key spawning area, but there may be other locations used for spawning as well. Further research will be required to pinpoint the timing of spawning and determine the significance of particular areas to lake trout recruitment.

***Other Fish Species Caught:*** A total of 378 bull trout were caught; 237 of these bull trout were released alive. Overall, factoring in the weakened condition of some of the released fish, biologists estimate that the bull trout mortality rate was about 47 percent. The number of bull trout killed during sampling was well within the expected mortality that was determined prior to this large project. The catch of non-trout species was lower than expected and included mostly northern pikeminnow (203 fish), suckers (212), mountain whitefish (32), and kokanee (39). No other trout and only one northern pike were captured in these deep-water net sets.

## ***PLANS FOR 2008***

***Lake trout population estimate:*** The interagency group reached consensus and proposed to conduct a depletion estimate for lake trout in Swan Lake. Using this technique, a second round of intensive netting will be done during the fall of 2008 and all lake trout caught will be removed from the lake. The depletion methodology provides another opportunity to verify the preliminary 2007 estimate, and at the same time reduce the lake trout population in Swan Lake. Based on the preliminary information gathered in 2007, the proposed depletion estimate for 2008 could effectively remove a large portion of the population, effectively slowing the lake trout population growth. It is proposed that sampling would take place from September 2-19. The effort is expected to cost about \$60,000.

***Public involvement:*** Montana Fish, Wildlife & Parks has prepared a draft MEPA document outlining alternatives for conducting further work on Swan Lake. This will include a public comment period, a public meeting, and a final decision before the proposed September sampling period. The MEPA process is important in order to identify alternatives, predict the effects of the sampling on the environment and on people, and to ensure the public is informed and engaged in the decision process.

***Other Activities for 2008:*** Agencies will provide information to anglers on lake trout/bull trout identification and continue to maintain the bull trout identification website: <http://fwp.mt.gov/bulltroutid/>.

## ***COOPERATORS***

The 2007 lake trout research project on Swan Lake was conducted by several agencies under a collection permit issued by Montana Fish, Wildlife & Parks. The net sampling was carried out by a contractor under the supervision of the U.S. Fish and Wildlife Service. The Montana Cooperative Fishery Research Unit from Montana State University is conducting the data analysis. Cooperators on the overall effort include Montana Fish, Wildlife & Parks, the U. S. Fish and Wildlife Service, U.S. Forest Service, Montana Trout Unlimited, Confederated Salish and Kootenai Tribes, Montana Department of Natural Resources and Conservation, and Bonneville Power Administration. For the past several years, these agencies have been meeting under the auspices of the Swan Valley Bull Trout Working Group.

For maps of Swan Lake, refer to the following website:

<http://lakemaps.foliosnap.com>