

PRE-REHABILITATION PLAN

Long Lake

I. PROPOSAL

A. Justification for Proposed Rehabilitation

(1-2) Long Lake has historically been one of the more productive smaller size lakes in Okanogan County. Illegal introductions of spiny ray fishes in recent years, has seriously compromised this once great fishing lake. Fingerling plants of rainbow can only produce yearling fish 8"-9" long due to competition with the warmwater species in the lake (sunfish). Legal plants of rainbow trout could prolong the fishery, but are much more expensive to produce at the hatcheries and could be used at other less productive waters instead. In addition, angler surveys indicate a preference for fingerling fish that have experienced an entire growing season in the lake versus catchable trout that are planted just prior to the opener. Treatment is needed at this time to restore Long Lake back to trout only water.

(3) Primary management of these waters is for trout only.

(4) Lake rehabilitation with rotenone was successful in 1993 to remove yellow perch and largemouth bass.

B. Physical Description of Water Proposed for Rehabilitation

1. WATER: Long Lake
2. LOCATION: Sec 13, T36N R29E, Okanogan Co.
3. SURFACE ACRES: 14.3
4. MAX. DEPTH: 29
5. VOLUME: 203 acre-feet 552,023,584 lbs water
6. OUTLET: None
7. STREAM: MILES N/A FLOW (cfs)
8. PUBLIC ACCESS: One-day use site (WDFW) with launch facilities
9. LAND OWNERSHIP: Public 10% Private 90%;
10. ESTABLISHED RESORTS: None

C. Proposed Management Actions

1. WATER: Long Lake
2. TARGET SPECIES: sunfish
3. DATE LAST REHABED: Oct 7, 1993
4. PROPOSED TREATMENT DATE: Oct 2006
5. REPLANTING DATE: Late-spring 2007
6. SPECIES: Rainbow trout
7. STOCKING: 2,000 catchables (8"-10") and 4,000 fingerlings (3"-4")
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm
AMOUNT (ROTENONE AT 5% ACT. INGRED): 552 lbs powder, 10 gal liquid
9. METHOD OF APPLICATION: pumper boats - slurry and spray; ATV with sprayer; small boat with small sprayer, backpack sprayers
10. CREW DESCRIPTION: Leader Robert Jateff, Personnel 3-4

II. PURPOSE:

Long Lake has been managed as lowland lake trout waters since the 1950's. Complete rehabilitation is the only feasible method of restoring these waters to the trout type of

management scheme. Complete removal of all competing species is the goal of the rehabilitation.

III. INTENDED OUTCOME/MEASURE OF SUCCESS:

We intend to restore Long Lake to its popular harvestable trout fishery, and improve its popularity by maintaining quality trout throughout the duration of the season. Success of this measure will be apparent during annual creel surveys. Given a reasonable chance of eliminating the populations of undesirable species, the beneficial effects should be noticeable one-two years post treatment.

IV. RESOURCE IMPACTS:

1. Target species: sunfish
2. District and Regional Habitat, Wildlife and Non-Game biologists have been apprised of our rehabilitation plans. No objections were raised, and only cautionary concerns were expressed on the potential impacts to non-targeted species.

According to Bradbury (1986), the effects of rotenone on benthos are variable, depending on the concentrations and species. Crustaceans are most tolerant while the smaller insects are most affected. Immediate reduction of the population average 25%, and survival doubles when access to bottom sediments exists. Benthic communities generally recover to at least pretreatment levels within two months. Zooplankton is more severely impacted, and communities generally take two to twelve months to fully recover. While relatively tolerant of even heavy doses of rotenone, amphibians (especially larval) are at risk, and herptiles are affected somewhat less so.

3. Participation in the trout fisheries should exceed that currently found for existing fisheries. The water in the lake is used solely for recreation. Dead fish along the shoreline may be offensive to the property owners for a short time after treatment.
4. Professional biologists and other naturalists have visited this site frequently over the past 50 years and there are no sensitive species using the lake at this time.

V. MITIGATING FOR ADVERSE IMPACTS:

1. Trout survival and growth will be greatly enhanced. No removal of dead fish is planned as the nutrient base contained therein is best returned to the lake. Disturbance of waterfowl during treatment or by the anticipated fishery will be offset by increased food availability as the uncontrollable numbers of spiny-rayed fishes are eliminated in favor of easily balanced populations of trout. It is in the interest of all species being managed to refrain from over-taxing the food-base.
2. Water will be confined to the lake proper, since there is no outlet.
3. Protective gear for the eyes, face, hands and clothes will be supplied on-site for all purveyors of rotenone.
4. The lake will be posted according to Department of Ecology guidelines to notify the public of the treatment and discourage the public from possessing or consuming dead fish. The landowners will be notified of the rehabilitation and consequent exposure of livestock to rotenone.

VI. RECREATIONAL IMPACT: also see I.A., II and III

Recreational angling opportunity will be increased if the undesirable species are removed from Long Lake. The level of participation will dwindle to almost nothing if no action is taken immediately. Given the success of the planned management action, as many as 1,000 fishing days are estimated for the season. Anglers should average about four-five fish per trip if the treatment is successful. Yearling trout should average about 11 inches. Carryovers should be expected to be about 20 percent of the catch, and average 15 inches for 2-year-old fish.

VII. ECONOMIC IMPACTS:

Rehabilitation would restore the fishery and associated economic activity. An estimated 1,000 or more trips will be made to Long Lake as a result of the proposed management action, with an economic impact totaling \$132,000 per year (2004 dollars; based on WDW estimate of \$132 per trip). Fingerling plants will cost the agency \$280, but is far less than the \$5,600 it now costs to produce the larger fish needed to counteract the presence of competing spiny ray species.

The cost of treatment will be approximately \$2,500, but the increase in license sales and subsequent boost to the local economy will more than offset that loss within two years after treatment.

VIII. RELATED MANAGEMENT ACTION:

Approximately 2,000 catchable (8"-10") and 4,000 fingerling (3"-4") rainbow trout will be stocked in early spring to provide immediate fishing opportunity. After the first year, subsequent fish plants will consist of fingerling trout only. Creel checks will be done annually on Long Lake, as well as population analysis to help in future management plans.

IX. PUBLIC CONTACT:

Public concern over the increasing numbers of lakes in Okanogan County with undesirable species infestations prompted this action.

A public meeting was held at the Methow Fish Hatchery in Winthrop on July 18th to discuss the rehab proposals. There were four people that attended the meeting (one from the Methow Fly Fishers, one from the Fly Fishing Federation, one from the Methow Valley News, and one from the Department of Ecology). Proposals and procedures for the lake rehabs were discussed and there were no objections noted to the plan.

Initiated by: Region Two Fisheries Management