PRE-REHABILITATION PLAN
Fish Lake and Associated Waters

I. PROPOSAL

A. Justification for Proposed Rehabilitation

1-2. Fish Lake near Tonasket, WA, is managed for a rainbow trout fishery with a five trout daily limit season from the fourth Saturday in April to October 31 annually.

The lake was rehabilitated in 2011 because of a stunted largemouth bass population that was severely impacting the trout populations.

Two 50 ft. gill nets, set over night in Fish Lake and Schalow Pond, contained an abundance of brown bullhead and smallmouth bass (May 2021). The size of the brown bullheads indicated a stunted population and the thinness of the carryover trout indicated the catfish had severely reduced the population. Bullhead were first detected at significant quantities in sampling beginning in spring 2016 with little to no fry origin trout detected in the creel since 2018.

Fish Lake has a fairly clean precipitous shoreline. Most of the surrounding land is ponderosa forest and rangeland that is undeveloped except for boat ramps and state managed camping areas (3). Toxicant will kill fish in Fish Lake and down the outlet to Schalow Pond dam outlet where flows go subsurface. The outlet to Schalow pond goes subsurface even during spring freshet flows, which should prevent any of the toxicant from escaping into other water bodies.

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

4. Lake rehabilitation with rotenone was a mostly successful management tool for Fish Lake 10 years ago, which was the last time rehabilitation of this water, was necessary.

B. Physical Description of Water Proposed for Rehabilitation

1. WATER: Fish Lake and connecting waters (Schalow Pond)
2. LOCATION: Sec 16, T36N R25E, Okanogan Co.
3. SURFACE ACRES: 102
4. MAX. DEPTH: 60
5. VOLUME: 2,856 acre feet 679,400,000 lbs water
6. OUTLET: dry intermittent stream going sub-surface to Schalow Pond (also being treated)
7. STREAM: MILES N/A FLOW (cfs)
8. PUBLIC ACCESS: Public parking and boat launch
9. LAND OWNERSHIP: Public 100% (80% WDFW; 20% DNR);
10. ESTABLISHED RESORTS: None.

C. Proposed Management Actions

1. WATER: Fish Lake
2. TARGET SPECIES: brown bullhead catfish
3. DATE LAST REHABED: October 2011
4. PROPOSED TREATMENT DATE: September 2021
5. REPLANTING DATE: Late-spring 2022
6. SPECIES: rainbow trout
7. CATCHABLES: 10,000 rainbow
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 3.9 ppm
   AMOUNT (ROTENONE AT 5% ACT. INGRED): 30,296 lbs., 94 gal.
9. METHOD OF APPLICATION: pumper boat - slurry and spray; ATV with sprayer;

airboat/canoe with liquid sprayer, drip cans
10. CREW DESCRIPTION: Leader(s) Ryan Fortier, Personnel 10-12

II. PURPOSE:

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

III. INTENDED OUTCOME/MEASURE OF SUCCESS:

We intend to restore Fish Lake to its popular harvestable trout fishery, and improve its popularity by maintaining quality trout for the April-October season. Success of this measure will be apparent during annual creel surveys. Given the effectiveness of the product at the prescribed level for the undesirable species and no illegal introduction of the same or other fish species, we predict the beneficial effects should last ten years.

IV. RESOURCE IMPACTS:

1. Target species: brown bullhead catfish

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 populations averages 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. Almost no chance of eliminating an entire population exists.

3. Participation in the trout fisheries should exceed that currently found for existing fisheries. Steep ridges surround most of the lake, and this coupled with the depth provide cold water even in the heat of summer. Its remote location within Sinlahekin wildlife area, but easy and quick access from Tonasket, make it aesthetically pleasing and angler use will increase if we continue to provide quality angling opportunity.

4. Professional biologists and other naturalists have visited this site frequently over the past 50 years. To our knowledge, no endemic, rare, threatened or otherwise listed species will be negatively impacted by the rehabilitation.

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. A lack of inflow to the lake during the treatment period will enhance the treatment effectiveness through uniform concentration within the water column.

3. No endemic, rare, threatened or otherwise listed species are known to inhabit this area.

4. Protective gear for the eyes, face, hands and clothes will be supplied on-site for all purveyors of rotenone.

5. 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 brown bullhead catfish are removed from Fish 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 2,000 angler trips are estimated for the season. Anglers should average about five fish per trip during the season. Yearling trout should average about 12 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 2,000 or more trips will be made to Fish Lake as a result of the proposed management action, with an economic impact totaling $112,000.00 per year (2011 dollars; based on the U.S. Fish and Wildlife Service 2011 National Survey of Fishing, Hunting, and Wildlife-associated Recreation estimate of $56 per trip). Fingerling plants will cost the agency $4,800, but is far less than the $19,320 it will cost to produce the larger fish needed to counteract the presence of competing spiny ray species.

The cost of treatment is about $215,000, which is recovered within three years of treatment. The local economy will be stimulated within the first year.

VIII. RELATED MANAGEMENT ACTION:

Approximately 14,000 catchable-sized rainbow will be stocked in early spring following the rehabilitation to provide opportunity for the popular catch and release program. Additionally, 30,000 trout fry will be stocked in May 2022 with that number reduced to 20,000 trout fry annually beginning in 2023. Creel checks will be done annually on both the harvest and catch and release seasons, and population surveys will be made, as time is available.

IX. PUBLIC CONTACT:

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

A public meeting will be held on June 9, 2021 to discuss the proposed treatment for Fish Lake and Schalow Pond.

Initiated by: Region Two Fisheries Management