

PRE-REHABILITATION PLAN

Lead King Lakes (Pend Oreille County)

I. PROPOSAL

A. Justification for Proposed Rehabilitation

The Lead King lakes have historically been managed as Opening Day trout fisheries in the Metaline area. An illegal introduction of Northern Pike and Pumpkinseed Sunfish has resulted in poor Rainbow Trout fry recruitment to the fishery. Through the use of rotenone to rehabilitate the lake, it is anticipated that this lake will return to a productive trout fishery.

B. Physical Description of Water Proposed for Rehabilitation

1. WATER: **Lead King lakes**
2. LOCATION: Sec's 22 & 27, T40N R43E, Pend Oreille County
3. SURFACE ACRES: 34 MAXIMUM DEPTH: 32 ft
4. VOLUME: 180 acre-feet; 489,175,027 lbs H₂O
5. OUTLET: Yes. Outlet is an un-named tributary to Everett Creek.
6. STREAM: Yes. There is an intermittent inlet which flows into Upper Lead King Lake.
7. PUBLIC ACCESS: Yes.
8. LAND OWNERSHIP: Public 10% (USFS), Private 90%
9. ESTABLISHED RESORTS: None.

C. Proposed Management Actions

1. WATER: **Lead King lakes**
2. TARGET SPECIES: Northern Pike, Pumpkinseed Sunfish
3. DATE LAST REHABED: Never.
4. PROPOSED TREATMENT DATE: October 2015.
5. REPLANTING DATE: Spring 2016.
6. SPECIES: Westslope Cutthroat Trout
7. CATCHABLES: 1000, FINGERLINGS: 3000, FRY: 7000
8. PROPOSED TOXICANT: Rotenone, liquid CONCENTRATION: 4 ppm
AMOUNT (ROTENONE AT 5% ACT. INGRED): 1468 lbs. powder, 59 gal. liquid
9. METHOD OF APPLICATION: Pumper boat slurry and air boat spray
10. CREW DESCRIPTION: Leader(s) Bill Baker, Personnel ~ 6

II. PURPOSE:

The Washington Department of Fish and Wildlife (WDFW) provides many types of fisheries in response to public desires. WDFW manages both trout and warmwater recreational fisheries based on many different species of fish and levels of difficulty. Public demand for, and participation in, production trout fisheries is high. These fisheries are prized as opportunities for families to recreate together, as well as providing an appropriate challenge for occasional or novice anglers. Opening Day trout fisheries provide a relaxed recreational opportunity, give

anglers outdoor opportunity during the summer months, and are also integral to the state and local economies.

Alternatives to rehabilitation are costly or impractical. Regardless of trout size at stocking, predation by Northern Pike would substantially reduce the number of trout available to anglers, and allowing persistence of an illegally introduced Northern Pike population in the Lead King lakes would invite similar actions in other waterbodies in Washington State. Suppression gillnetting, while it has proven to be effective at drastically reducing Northern Pike in the Box Canyon pool of the Pend Oreille River, would be considerably more expensive over the long-term than a rotenone treatment and would not likely eliminate Northern Pike from the Lead King lakes. In addition, interspecific competition between trout and Pumpkinseed Sunfish would limit trout growth and condition, resulting in an undesirable trout fishery.

III. INTENDED OUTCOME/MEASURE OF SUCCESS:

WDFW intends to restore the Lead King lakes to an easily accessible trout fishery based on fry-stocked trout. The average catch rates should be 3-5 fish/angler on the opener with a sustained harvest of 2-3 fish/angler for the remainder of the Lowland Lakes trout season. Spring fry should be a minimum of 11 inches by Age-2, and carryover harvest amount to 10–15% of the overall harvest. Success will be measured during Opening Day and random creel contacts and biological surveys. The beneficial effects of rehabilitation should last a minimum of 10 years under current management scheme. In addition to reasons listed under Resource, Recreational and Economic Impacts, to abandon this lake as a trout fishery is to invite other incursions across the state in trout-only managed lakes.

IV. RESOURCE IMPACTS:

1. The population of the target species, Northern Pike and Pumpkinseed Sunfish, will be severely and negatively impacted. Northern Pike are a prohibited species in Washington, and Pumpkinseed Sunfish are an undesirable species for this water under the current lake management plan.
2. Regional Lands, Habitat, Wildlife and Non-Game managers have been apprised of the proposed Lead King lakes rehabilitation. No unmitigated concerns have been expressed on the potential impacts to non-targeted species.
3. 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.
4. Professional biologists and other naturalists have visited these sites frequently over the past 50 years. To our knowledge, no endemic, rare, threatened or otherwise listed species will be

impacted by the rehabilitation.

V. MITIGATING FOR ADVERSE IMPACTS:

1. Trout fry survival and growth for the proposed water will be greatly enhanced, and the future trout fishery will attain the previous status. No removal of dead fish is planned as the nutrient base contained therein is best returned to the lake.
2. Fall rehabilitation will not interfere with waterfowl spring nesting. The eradication of Northern Pike and Pumpkinseed Sunfish will also benefit waterfowl through increased production of invertebrates and removal of a potential predator to young waterfowl.
3. Livestock use of the waters to be treated will not be significantly affected. The concentration of rotenone used in the treatment will be far below that considered harmful to mammals or birds. The landowners will be notified of the rehabilitation and consequent exposure of livestock to rotenone.
4. No endemic, rare, threatened or otherwise listed species are known to inhabit this area.
5. Appropriate respirators and other personal protective equipment (PPE) will be utilized by staff involved with mixing and distributing liquid and powder rotenone per the American Fisheries Society Rotenone Standard Operating Procedure (SOP) manual.
6. Lakes 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.

VI. RECREATIONAL IMPACT:

See Section III.

Angler success should reach 3-5 fish per trip on the Opener and 2-3 fish/angler sustained harvest for the duration of the season. Two year-old trout should average about 11 inches. Carryovers should be expected to account for 10-15 percent of the catch and average 14 inches.

VII. ECONOMIC IMPACTS:

The estimated total cost of stocking these lakes with catchable, fingerling, and fry-sized trout in the year following rehabilitation is \$2,200. The rehabilitation will cost the Department approximately \$15,300 (including costs of rotenone, staff time, lodging and per diem, mileage, and monitoring). Although these lakes do not experience heavy angler pressure, this equates to a relatively modest investment toward deterring future illegal introductions of Northern Pike and will generate increased numbers of angling trips for trout.

Estimates for the cost of the enforcement action necessary to curtail the activity of the individuals responsible for illegal fish plants are not available. However, this cost might be looked upon as a

statewide expenditure since some preventive benefit would certainly occur as perpetrators find out the Department takes illegal transport and planting of fish very seriously.

VIII. RELATED MANAGEMENT ACTION:

See I.C.6. for fish planting data

Increased penalties and enforcement activities would be desirable in order to dissuade illegal stocking of State-managed waters. Educating the public about the costs in Department dollars and time with emphasis on what WDFW might be able to accomplish with those resources would be a very worthwhile activity for O & E. This may result in stemming recruitment to this ill advised group and turning local opinion against the offenders.

IX. PUBLIC CONTACT:

No public meetings are required under the Aquatic Invasive Species Management General National Pollutant Discharge Elimination System (NPDES) Permit. Written notices advising landowners of the treatment will be provided (via mail or handbill) prior to the treatment date.

Initiated by: Region 1, District 1 Fisheries Management