

PRE-REHABILITATION PLAN
Williams Lake (Stevens County)
April 20, 2017 – Bill Baker & Brian Walker

I. PROPOSAL

A. Justification for Proposed Rehabilitation

Rocky Lake has been historically managed as a production Lowland Lake Trout Season fishery, which is popular with anglers in the Colville area. Due to its proximity to the city of Colville, Rocky Lake is a well-attended Opening Day fishery, and it sustains relatively high use throughout the fishing season. Rocky Lake has a split-season with statewide minimum size and daily limit from the 4th Saturday in April through May 31 and catch and release fishing under selective gear rules from June 1 through October 31.

The presence of undesirable species of fish is the greatest impediment to maintaining trout fisheries in this water. Historically, the lake has been largely free of problems with illegally introduced fish, requiring only a single previous rotenone treatment in 2004 to remove Pumpkinseed Sunfish *Lepomis gibbosus*. Currently, illegally introduced Redside Shiner *Richardsonius balteatus* are abundant in the lake.

B. Physical Description of Water Proposed for Rehabilitation

1. WATER: **Rocky Lake**
2. LOCATION: Sec's 27 & 34, T35N R39E Stevens County
3. SURFACE ACRES: 20 MAXIMUM DEPTH: 28ft
4. VOLUME: 285 acre-feet; 775,200,000 lbs H₂O
5. OUTLET: Intermittent
6. STREAM: Small intermittent inlet at east end of lake
7. PUBLIC ACCESS: Yes
8. LAND OWNERSHIP: PUBLIC 40% (WDNR), PRIVATE 60%
9. ESTABLISHED RESORTS: None

C. Proposed Management Actions

1. WATER: **Rocky Lake**
2. TARGET SPECIES: Redside Shiner
3. DATE LAST REHABED: October 2004
4. PROPOSED TREATMENT DATE: October 2017
5. REPLANTING DATE: Spring 2018
6. SPECIES: Rainbow Trout
7. CATCHABLES: 2,000 FRY: 4,000
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 4 ppm
AMOUNT (ROTENONE AT 5% ACT. INGRED): 2,886 lbs., 15 gal.
9. METHOD OF APPLICATION: pumper boat slurry and airboat 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. Lowland lake trout fisheries provide a relaxed recreational opportunity and are integral to the state and local economies.

Alternatives to rehabilitation are costly or impractical. To maintain a comparable fishery in this lake with catchable-sized trout, around 2,000 fish would be required annually. Stocking of catchable-sized fish is roughly ten times more expensive than fry planting, and WDFW Region 1 lacks the hatchery space and water to institute a catchable fish-stocking program as a substitute for lake rehabilitation. Spring fry survival in lakes free of competing species ranges from 50-80 percent. Regardless of fish size at stocking, competition with Redside Shiners limits trout survival and condition. Ultimately, in the absence of rehabilitation, the current fish community in Rocky Lake will negatively affect trout recruitment and quality, leading to a poor trout fishery.

III. INTENDED OUTCOME/MEASURE OF SUCCESS:

WDFW intends to restore Rocky Lake to a popular, easily accessible trout fishery based on fry-stocked trout. The average catch rates should be 3 to 5 fish/angler on the opener with a sustained harvest of 2 to 3 fish/angler for the remainder of the fishing season. Success will be measured during Lowland Lakes Trout Season Opening Day creel, random creel contacts, and biological surveys. Beneficial effects of the treatment should last approximately 8 to 10 years under the 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 illegal fish introductions across the State in trout-only managed lakes.

IV. RESOURCE IMPACTS:

1. The population of the target species, Redside Shiner, will be severely and negatively impacted. Redside Shiner is a species that is not a desired component of the fishery under the current lake management plan.
2. Regional Lands, Habitat, Wildlife and Non-Game managers have been apprised of the proposed rehabilitation. No unmitigated concerns have been expressed regarding 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 pre-treatment 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. Loss of the final 2 -3 weeks of the 2017 Lowland Lakes Trout Season in Rocky Lake will occur, although fishing pressure during this period is light. During the period of treatment, the lake will be closed to angling and other recreational uses such as boating and swimming. The fishery will resume in the spring of 2018, driven by planted catchable Rainbow Trout during the first year and spring fry plants in subsequent years.

5. 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 spring waterfowl nesting. The eradication of Redside Shiner will also benefit waterfowl through increased production of invertebrates. The stocked population of trout will not be as numerous as the current Redside Shiner population.

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. Landowners will be notified of the rehabilitation and consequent potential exposure of livestock to rotenone.

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

5. Required personal protective equipment (PPE) will be worn by all staff participating in the rotenone treatment.

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 catch rates should reach 4-5 fish/trip on the opener and 2-3 fish/ for the duration of the

season. Yearling trout should average about 11 inches. Carryovers should make up about 10 to 15 percent of the catch and average 15 inches for 2-year-olds and 18 inches for 3-year-olds.

VII. ECONOMIC IMPACTS:

An estimated minimum of 900 trips per year made to Rocky Lake as a result of the proposed management action would result in an increased economic impact totaling \$36,000 per year (2011 dollars; based USFWS estimate of \$40.00 per trip). If the project is successful for 8 years it will generate an estimated \$288,000 in economic activity. The total annual cost to plant these lakes with rainbow trout fry is less than \$500. The rehabilitation will cost the Department about \$14,500 (including costs of rotenone, time, and travel). The investment by the State will be realized within the first year of treatment.

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 and I.C.7 for fish planting data

Increased penalties and enforcement activities are desirable if WDFW is ever going 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:

Public meetings will be held during July 2017 in Colville and Olympia to explain WDFW's 2017 rehabilitation proposals, assess public opinion, and address local concerns.

Initiated by: Region 1, District 1 Fisheries Management