PRE-REHABILITATION PLAN

Rigley Lake (Stevens County)

April 20, 2017 – Bill Baker & Brian Walker

I. PROPOSAL

A. Justification for Proposed Rehabilitation

Rigley Lake has historically been a popular selective gear trout fishery in the Colville area. A self-sustaining population of Green Sunfish *Lepomis cyanellus,* stemming from an illegal introduction, has impaired trout condition in this lake for the past 5 plus years. Poor condition of trout in Rigley Lake necessitates the removal of competition from the illegally stocked species.

B. Physical Description of Water Proposed for Rehabilitation

l. WATER: **Rigley Lake**
2. LOCATION: Sec 02, T36N R38E & Sec 35, T37N, R38E Stevens County
3. SURFACE ACRES: 7 MAXIMUM DEPTH: unknown
4. VOLUME: 105 acre-feet (est.); 285,600,000 lbs H_2O (est.)
5. OUTLET: Pingston Creek – intermittent
6. STREAM: Pingston Creek – intermittent
7. PUBLIC ACCESS: Yes
8. LAND OWNERSHIP: PUBLIC 100% (WDNR)
9. ESTABLISHED RESORTS: None

C. Proposed Management Actions

1. WATER: **Rigley Lake**
2. TARGET SPECIES: Green Sunfish
3. DATE LAST REHABED: Never
4. PROPOSED TREATMENT DATE: October 2017
5. REPLANTING DATE: Spring 2018
6. SPECIES: Rainbow Trout
7. CATCHABLES: 500 JUMBOS: 100
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 4 ppm
   AMOUNT (ROTENONE AT 5% ACT. INGRED): 992 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. Selective gear trout fisheries provide a specialized recreational opportunity, give anglers outdoor opportunity to enjoy consumptive and/or catch and release fisheries, and are also integral to the state and local economies.

III. INTENDED OUTCOME/MEASURE OF SUCCESS:

WDFW intends to restore Rigley Lake to a popular, easily accessible trout fishery based on catchable and jumbo size Rainbow Trout *Oncorhynchus mykiss*. The average catch rates should be 10 fish/angler on the opener with a sustained catch rate of 5 fish/angler for the remainder of the fishing season. Success will be measured during 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, Green Sunfish, will be severely and negatively impacted. Green Sunfish are a warmwater 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 fishery will occur for Rigley Lake, although angler use of this fishery is low during this time. The lake will be closed to angling, and other recreational uses such as boating and swimming will be curtailed during the planned period of treatment. Following detoxification, the lake will be planted with catchable and jumbo trout prior to the Lowland Lakes Trout Season opener. Because this is the normal management strategy for this lake due to regular winter-kill, anglers should experience no appreciable difference in the 2018 fishery as compared to previous 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 condition for the proposed water will be 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 Green Sunfish will also benefit waterfowl through increased production of invertebrates. The stocked population of trout will not as numerous as the current Green Sunfish 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 10 fish/trip on the opener and 5 fish/trip for the duration of the season. Catchable trout should average about 11-12 inches, and jumbos approximately 17 - 20 inches.

VII. ECONOMIC IMPACTS:

An estimated minimum of 900 trips per year made to Rigley 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 is $1,500. The rehabilitation will cost the Department about $9,000 (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