PRE-REHABILITATION PLAN
Williams Lake (Stevens County)

I. PROPOSAL

A. Justification for Proposed Rehabilitation

Williams Lake has historically been a popular winter trout fishery in the Colville area. Illegal introductions of goldfish and now yellow perch have plagued trout production on this lake for the past 10 plus years. Through regulation modification and the use of rotenone to rehabilitate the lake, it is anticipated that this lake will return to a productive winter trout fishery.

Williams Lakes has been illegally stocked with yellow perch. The resulting perch populations in this lake provided two to three years of desirable fishing before stunting occurred and the lake was no longer viewed as a desirable fishery for perch or trout. The lake is currently at the point where the perch have became stunted. WDFW is proposing to rehabilitate the lake and restock with rainbow trout. Similar to Hatch Lake in the Colville area, it appears there are anglers that have discovered that following rotenone treatment they can illegally plant perch and profit from an expanding perch population for several years prior to the fish becoming stunted. To combat these "bucket biologists" WDFW enacted a regulation on Williams Lake to make it "catch and release except for trout". The intent of the new regulation was to make harvesting any species from the lake other than trout illegal. Thus, preventing the illegal introduction of warmwater fish for the sole purpose of prospecting for a few "good" years of fishing for the illegally introduced species.

B. Physical Description of Water Proposed for Rehabilitation

l. WATER: **Williams Lake**
2. LOCATION: Sec 36, T38N R38E Stevens County
3. SURFACE ACRES: 38 MAXIMUM DEPTH: 47ft
4. VOLUME: 1,058 acre-feet; 2,665,600,000 lbs H2O
5. OUTLET: None
6. STREAM: N/A
7. PUBLIC ACCESS: Yes
8. LAND OWNERSHIP: PUBLIC 98% (WDFW), PRIVATE 2 %
9. ESTABLISHED RESORTS: None on lake

C. Proposed Management Actions

1. WATER: **Williams Lake**
2. TARGET SPECIES: yellow perch
3. DATE LAST REHABED: October, 2002
4. PROPOSED TREATMENT DATE: September-November, 2008
5. REPLANTING DATE: Spring 2009
6. SPECIES: rainbow trout
7. CATCHABLES: 5,000-10,000 FINGERLINGS: 10,000-30,000
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm
   AMOUNT (ROTENONE AT 5% ACT. INGRED): 2650 lbs., 10 gal.
9. METHOD OF APPLICATION: pumper boat slurry and airboat spray
10. CREW DESCRIPTION: Leader(s) Chris Donley, 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. Winter season trout fisheries provide a relaxed recreational opportunity, give anglers outdoor opportunity during the winter months, and are also integral to the state and local economies.

Alternatives to rehabilitation are costly or impractical. To maintain a comparable fingerling-stocked trout fishery in these waters with catchable-sized fish would take 15,000 – 25,000 catchable rainbow. Stocking catchable sized fish costs almost ten times the cost of a fry plant, and Region One 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, interspecific competition with yellow perch limits fish growth and condition significantly. Ultimately, trout recruitment and fish quality lead to an undesirable trout fishery.

III. INTENDED OUTCOME/MEASURE OF SUCCESS:

WDFW intends to restore Williams Lake to a popular, easily accessible trout fishery based on fingerling-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 December 1 to March 31 season. Spring fry should be a minimum of 11 inches, and carryover harvest should be 10 to 15 percent of the overall harvest. Success will be measured during Opening Day and random creel contacts and biological surveys. Given a reasonable chance of reducing the populations of undesirable species dramatically, the beneficial effects should last approximately 8 to 10 years under current management schemes. 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, yellow perch, will be severely and negatively impacted. Yellow Perch are an exotic species that is not desired for a fishery under the current lake management plan.

2. Regional Lands, Habitat, Wildlife and Non-Game managers have been appraised of our rehabilitation plans. 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. Loss of the 2008 winter fishery will occur for Williams Lake, the fishery will begin December of 2009. 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.

5. Professional biologists and other naturalists have visited these sites frequently over the past 40 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 yellow perch will also benefit waterfowl through increased production of invertebrates. Stocked populations of trout will not be anywhere near as numerous as the current yellow perch 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. 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. Protective wear for the eyes, face and hands will be available for all purveyors of rotenone.

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 three to five fish per trip on the opener and 2-3 fish/angler sustained harvest for the duration of the season. Yearling trout should average about 11 inches. Carryovers should be expected to be 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 2,500 trips made to Williams Lake as a result of the proposed management action would result in an increased economic impact totaling $95,000 per year (1991 dollars; based on a WDW estimate of $37.90 per trip). If the project is successful for 8 years it will generate a minimum of $760,000 in economic activity. The total annual cost to plant these lakes with rainbow trout fry is less than $2,000. The rehabilitation will cost the Department about $30,000 (including costs of rotenone, time, travel). The investment by the state is realized more than 10-fold in economic activity after the second year following 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. 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 WDFW Public Affairs. 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 2008 in Ephrata, Spokane, Colville and Olympia to explain WDFW's 2008-09 rehabilitation proposals, assess public opinion, and address local concerns.

Initiated by: Region One, District 2 Fisheries Management