PRE-REHABILITATION PLAN

North Potholes (Westlake ponds)

I. PROPOSAL

A. Justification for Proposed Rehabilitation

Ponds within the proposed treatment area (TA) were treated with rotenone in Sept. 1980 to remove undesirable fish species including carp and provide the opportunity for a managed fish population of warm-water (spiny-ray) species to provide a sport fishery. Breeding duck use increased dramatically post-treatment. Numbers of duck broods peaked at very high levels in the mid-1980's and declined annually to pre-treatment (very low) numbers by summer of 2003. Carp were observed in most ponds in the TA by the late-1980's. The dominance of carp is the likely cause of the dramatic decline in observed duck use.

The TA and a small part of Potholes Reservoir immediately adjacent to it contains the entire known population of the state-endangered Northern Leopard Frog (NLF) in Washington. Since 1980, and the last rotenone treatment, a breeding population of bullfrogs has become established in the TA. Treatment with rotenone would reduce reproduction of bullfrogs, a serious threat to the NLF.

B. Physical Description of Water Proposed for Rehabilitation

l. WATER: Ponds in the northern-most part of Potholes Reservoir.
2. LOCATION: Section 31, T19N, R28E; Section 36, T19N, R27E and Section 1, T18N, R27E. Approximately 2 miles west of Moses Lake, Grant County, WA
3. SURFACE ACRES: 125 MAXIMUM DEPTH: 8 feet
4. VOLUME: lbs H2O (300 acre-feet)
5. OUTLET: None (A series of small dikes separate waters in the TA from the main body of Potholes Reservoir.
6. STREAM: None FLOW: N/A
7. PUBLIC ACCESS: Entire Area.
8. LAND OWNERSHIP: PUBLIC 100% PRIVATE 0 %
9. ESTABLISHED RESORTS: None

C. Proposed Management Actions

1. WATER: ~40 ponds in the northern-most part of Potholes Reservoir.
2. TARGET SPECIES: carp and bullfrog larvae
3. DATE LAST REHABED: Sept. 1980 and Sept 2006 (small portion of TA)
4. PROPOSED TREATMENT DATE: September - October, 2006
5. REPLANTING DATE: to be determined
6. SPECIES: possible restock with bass and bluegill
7. CATCHABLES: na ; FINGERLINGS: na
8. PROPOSED TOXICANT: Rotenone, liquid CONCENTRATION: 4 ppm
AMOUNT (ROTENONE AT 5% ACT. INGRED): 350 gal.

9. METHOD OF APPLICATION: helicopter and ground spray
10. CREW DESCRIPTION: Leader(s) Rich Finger Personnel ~ 6

II. PURPOSE:

Rehabilitation of the TA serves the purposes of fisheries, waterfowl, and endangered species management. Removal of carp will increase invertebrate production and enhance food availability for desired fish species, ducks, and other species of aquatic wildlife. Removal of bullfrog larvae will reduce competition and predation by bullfrogs on Northern Leopard Frogs and other native vertebrates.

III. INTENDED OUTCOME/MEASURE OF SUCCESS:

Waterfowl surveys will be conducted in July (duck brood count), August (molting ducks), and Oct.-Jan. (monthly aerial surveys for migrant/wintering waterfowl). Surveys for determining the presence of leopard frogs and bullfrogs will be made during spring and summer. Random creel surveys and biological sampling, as well as public comment, will be the measure of success for fisheries, if established. The complete elimination of carp from a system of this type is a challenge and certainly no certainty. Without a complete kill, 5 - 6 years of benefit would still be realized before rehabilitation is again necessary.

IV. RESOURCE IMPACTS:

1. The intent is that populations of the target species, carp and bullfrogs, will be severely and negatively impacted.

2. District and Regional Fisheries, Habitat, and Wildlife biologists support the proposed rehabilitation plan. The rehabilitation will benefit leopard frogs since it will decrease competition and predation on this species, especially from exotic bullfrogs. The rehabilitation would be done in fall, when larval leopard frogs have already metamorphosed, but bullfrog tadpoles would be susceptible

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 larvae) are at risk, and turtles are affected somewhat less so.

3. The fishery has already been almost completely lost, but could be reestablished again soon after treatment. Creating a successful fishery risks increased human use of the area and the associated impacts to habitat and wildlife. Seasons and access might be structured to minimize disturbance to leopard frogs and waterfowl nesting/rearing. These waters are not a source of potable water for humans or livestock. The area will be closed to angling, and other recreational uses such as wildlife viewing during the planned period of treatment.

4. Professional biologists and other naturalists have visited this site frequently over the past 40 years. The WDFW Habitat and Wildlife Programs and PHS maps have been consulted. The TA is used heavily by several species of wildlife in addition to the endangered NLF and breeding ducks. The proposed treatment would increase use by desirable wildlife species. No wildlife uses will be impacted in a negative way by the proposed rotenone treatment.

V. MITIGATING FOR ADVERSE IMPACTS:

1. Human disturbance resulting from the fishery might be managed by limiting access to off-site parking areas to preserve the walk-in fishery. Rehabilitation will be completed before the nesting season begins. The diverse habitat in the TA is home to much and varied wildlife, all of which would benefit from the increased aquatic food production after carp removal. Leopard frogs will benefit from the reduction of bullfrogs as a result of removing bullfrog larvae. No removal of dead fish is planned as the nutrient base contained therein is best returned to the lake.

2. No "downstream" resources will be impacted. Water within the TA is isolated from other water in the Potholes Reservoir by a series of small dikes.

3. No endemic, rare, threatened or otherwise listed species known to inhabit this area will be adversely affected by the proposed treatment.

4. Protective wear for the eyes, face and hands will be required for all purveyors of rotenone.

5. Ponds 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: ALSO SEE PROPOSAL I.A.

Almost no fishery currently exists, so angling opportunity could be greatly enhanced. Hard data are not available to accurately judge CPUE on these waters because a shortage of manpower prohibits surveying all the area year around lakes and ponds on a regular basis. Angling pressure in the TA is has been "low key" and consistent in the past, rather

than intense and concentrated temporarily as on opening day waters. Recreational opportunity will be increased.

The increased number of ducks produced in the waters to be treated will be available to hunters.

VII. ECONOMIC IMPACTS:

Given the discussion in part VI, and due the as yet undetermined nature of the fishery, the expected economic value is also difficult to estimate. However, as recreational opportunity increases, so goes the flow of dollars. Even a minimal fishery could be expected to generate several hundred additional angling trips, resulting in an increased economic impact totaling $7-8,000 per year to the state's economy (1991 dollars; based WDW estimate of $37.90 per trip). Rehabilitation would bring back the fishery and associated economic activity.

The number of waterfowl hunting trips would be expected to increase, but an estimate of the magnitude of the increase would be difficult to predict.

Placing a value on protecting the state's few remaining populations of leopard frogs is complicated. Certainly there would be some concrete value to wildlife viewers, but the number of such trips generated is not known. Protecting the state from the financial consequences of federal law should leopard frogs become federally listed would be highly valued. It is considered better at this juncture to protect the remains of the population than assume it valueless and do nothing.

VIII. RELATED MANAGEMENT ACTION:

Assessment surveys for leopard frogs, waterfowl production, and other wildlife would follow treatment. If a fishery is deemed desirable and a good fit with frog and waterfowl objectives, broodstock to re-populate these waters would likely be captured from other systems.

IX. PUBLIC CONTACT:

A public hearing will be held on July 15, 2008 in Ephrata, and in Olympia, Spokane, and Colville later in July, to explain this rehabilitation proposal, assess public opinion, and address local concerns. The announcement will be provided to area papers and radio stations about one week in advance of the meeting, and all landowners will be notified by letter. An outline of the rehabilitation program, fish and wildlife management objectives, and individual waters in the proposals will be presented and discussed.

Initiated by: Region Two Fisheries and Wildlife Management