PRE-REHABILITATION PLAN
Corral, Blythe, Chukar, and Scaup Lakes

I. PROPOSAL

A. Justification for Proposed Rehabilitation

The Corral, Blythe, Chukar, and Scaup chain of lakes lie just south of O'Sullivan Dam and Potholes Reservoir and are a tributary to lower Crab Creek. Much of Corral is WA State Dept of Natural Resources land, some of which is leased to Mar Don Resort and WDFW (access/boat launch). A small area of central Corral Lake is privately owned, and the remainder is on the Columbia National Wildlife Refuge (CNWR). All of Blythe, Chukar, and Scaup lakes, are on the CNWR.

These waters have been popular trout fisheries since the 1960s, averaging 3-5 fish per angler when opening day-type seasons were in effect. Blythe and Chukar lakes once provided the quality of angling sufficient to justify selective regulations. The lakes are currently open to angling year-round, reducing the opening day crowds in favor of prolonged and steady angling pressure. An expanding population of sunfish, and possibly other illegally introduced species are competing with trout fry and depressing trout survival. Anglers rarely pursue sunfish, and the present fishery is a shadow of the former rainbow fisheries that can occur there.

Pumpkinseed sunfish were introduced, probably illegally, into the system during the early 1960s. Six rehabilitations have failed to eradicate this species, thus periodic treatment is necessary to keep the numbers of sunfish down. Carp entering from Crab Creek were also a problem in Blythe, Chukar, and Scaup lakes until the USFWS constructed an adequate barrier to the upstream migration of fish in 1976. A natural barrier isolates Corral Lake. Carp, perch, crappie, and bass have been eradicated from the system at various times.

Lake rehabilitation has provided 4-5 years of very good trout fishing after each treatment. Thereafter, trout survival begins to diminish and the fishery becomes less attractive over time. After 7-8 years, the trout fishery is almost non-existent. Since the last treatment, the proposed rehabilitation will entail superior techniques and equipment not available during previous rehabilitation attempts. Powdered rotenone will be slurried before application to the lake, providing a better distribution of the toxicant. Rehabilitation is desirable during the fall as Potholes Reservoir is usually at its lowest level at that time, and the springs that feed these lakes will be at their lowest flow. This should reduce the amount of sanctuary available to the target species during treatment. Submergent aquatic weed growth may present a problem during a fall rehabilitation, especially in Chukar and Scaup lakes.

Refuge policy favors endemic species management over that of exotic species. While no game fish probably inhabited these waters originally, trout have historically inhabited the Columbia River drainage including Crab Creek. Additionally, the Columbia Basin National Wildlife Refuge was chartered for the primary purpose of waterfowl management. The unchecked proliferation of these spiny-ray species depletes food production for waterfowl as well as for trout.

Alternatives to rehabilitation are costly or impractical. To maintain a comparable fingerling-

stocked trout fishery in these waters with catchable-sized fish would take 35,000 catchable rainbow. This would constitute about a third of the District's entire normal allotment of catchable trout. Stocking catchable sized fish costs almost ten times the cost of a fry plant, and Region Two lacks the hatchery space and water to institute a catchable fish-stocking program as a substitute for lake rehabilitation. In addition, Refuge policy forbids planting catchable sized fish in refuge waters, thus advanced fry are the only option available for trout production in Blythe, Chukar, and Scaup lakes. Optimistic estimates of survival of 4-6 inch advanced fry in larger mixed species waters range from 10-20 percent. Spring fry survival in lakes free of competing species ranges from 50-80 percent. It has been 10 years since the last rehabilitation of these lakes, and angling continues to decline. WDFW policy states that lake rehabilitation is an option for eliminating illegally planted and/or undesirable fish to restore the intended management scheme.

B. Physical Description of Water Proposed for Rehabilitation

l. WATER: **Corral Lake**
2. LOCATION: Sec 15 and 16, T17N R28E Grant Co.
3. SURFACE ACRES: 77.6 MAXIMUM DEPTH: 65 feet
4. VOLUME: 2,570 acre-feet; 6,985,630,080 lbs. H2O
5. OUTLET: Permanent, small creek drains to Blythe Lake; includes a natural barrier (falls) to upstream fish migration.
6. STREAM: 1,600 ft. FLOW: 2-3 cfs
7. PUBLIC ACCESS: Entire Lake; includes boat launch and toilets.
8. LAND OWNERSHIP: PUBLIC 85% (WDNR, USFWS/CNWR), PRIVATE 15 %
9. ESTABLISHED RESORTS: None on lake; near-by a resort (Mar Don) and State Park (Potholes Res.)

l. WATER: **Blythe Lake**
2. LOCATION: Sec 15, T17N R28E Grant Co.
3. SURFACE ACRES: 32 MAXIMUM DEPTH: 35 feet
4. VOLUME: 588 acre-feet; 1,598,268,672 lbs. H2O
5. OUTLET: Permanent, small creek drains to Chukar Lake.
6. STREAM: 300 ft. FLOW: 2-3 cfs
7. PUBLIC ACCESS: Entire Lake; includes boat launch.
8. LAND OWNERSHIP: PUBLIC 100% (USFWS/CNWR) PRIVATE 0 %
9. ESTABLISHED RESORTS: None on lake; near-by a resort (Mar Don) and state park (Potholes Res.)

l. WATER: **Chukar Lake**
2. LOCATION: Sec 14, T17N R28E Grant Co.
3. SURFACE ACRES: 13.2 MAXIMUM DEPTH: 24 feet
4. VOLUME: 192 acre feet; 521,856,000 lbs. H2O
5. OUTLET: Permanent, connected at times to Scaup Lake
6. STREAM: 10 ft. FLOW: 2-3 cfs
7. PUBLIC ACCESS: Entire Lake; walk-in.
8. LAND OWNERSHIP: PUBLIC 100% (USFWS/CNWR) PRIVATE 0 %
9. ESTABLISHED RESORTS: None on lake; Resort (Mar Don) and State Park at Potholes Res.

l. WATER: **Scaup Lake**

2. LOCATION: Sec 14, T17N R28E Grant Co.
3. SURFACE ACRES: 9.1 MAXIMUM DEPTH: 14 feet
4. VOLUME: 64 acre feet; 173,950,000 lbs. H2O
5. OUTLET: Intermittent, to Crab Creek (Marsh Unit I).
6. STREAM: 1500 ft. FLOW: 0 cfs at time of treatment; up to 2-3 cfs seasonally.
7. PUBLIC ACCESS: Entire Lake; walk-in.
8. LAND OWNERSHIP: PUBLIC 100% (USFWS/CNWR) PRIVATE 0 %
9. ESTABLISHED RESORTS: None on lake; near-by a resort (Mar Don) and state park (Potholes Res.)

C. <u>Proposed Management Actions</u>

1. WATER: **Corral Lake**
2. TARGET SPECIES: pumpkinseed sunfish, crappie, and possibly yellow perch
3. DATE LAST REHABED: October 29-31, 1997
4. PROPOSED TREATMENT DATE: September-November, 2007
5. REPLANTING DATE: Spring 2008
6. SPECIES: rainbow trout
7. CATCHABLES: 10,000 – 21,000 FINGERLINGS: 30,000
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm
   AMOUNT (ROTENONE AT 5% ACT. INGRED): 6,687 lbs., 30 gal.
9. METHOD OF APPLICATION: pumper boat slurry and airboat/ATV spray
10. CREW DESCRIPTION: Leader(s) Jeff Korth Personnel ~ 6

1. WATER: **Blythe Lake**
2. TARGET SPECIES: pumpkinseed sunfish, crappie, and possibly yellow perch
3. DATE LAST REHABED: October 29-31, 1997
4. PROPOSED TREATMENT DATE: September-November, 2007
5. REPLANTING DATE: Spring 2008
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 10,000
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm
   AMOUNT (ROTENONE AT 5% ACT. INGRED): 1,465 lbs., 15 gal.
9. METHOD OF APPLICATION: pumper boat slurry and airboat spray
10. CREW DESCRIPTION: Leader(s) Jeff Korth Personnel ~ 2-3

1. WATER: **Chukar Lake**
2. TARGET SPECIES: pumpkinseed sunfish, crappie, and possibly yellow perch
3. DATE LAST REHABED: October 29-31, 1997
4. PROPOSED TREATMENT DATE: September-November, 2007
5. REPLANTING DATE: Spring 2008
6. SPECIES: rainbow trout
7. CATCHABLES: 0 FINGERLINGS: 4,000
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm
   AMOUNT (ROTENONE AT 5% ACT. INGRED): 477 lbs., 5 gal.
9. METHOD OF APPLICATION: pumper boat slurry and airboat/ATV spray
10. CREW DESCRIPTION: Leader(s) Jeff Korth Personnel ~ 2

1. WATER: **Scaup Lake**
2. TARGET SPECIES: pumpkinseed sunfish, crappie, and possibly yellow perch

3. DATE LAST REHABED: October 29-31, 1997
4. PROPOSED TREATMENT DATE: September-November, 2007
5. REPLANTING DATE: none
6. SPECIES: none
7. CATCHABLES: 0 FINGERLINGS: 0
8. PROPOSED TOXICANT: Rotenone, powder and liquid CONCENTRATION: 1 ppm
AMOUNT (ROTENONE AT 5% ACT. INGRED): 173 lbs. or 21 gal., or in combination.
9. METHOD OF APPLICATION: pumper boat slurry and airboat/ATV spray
10. CREW DESCRIPTION: Leader(s) Jeff Korth Personnel ~ 2

TOTAL PROPOSED TOXICANT: Rotenone CONCENTRATION: 1 ppm
AMOUNT (ROTENONE AT 5% ACT. INGRED): 8,803 lbs. powder and 50-71 gal. liquid.

II. PURPOSE:

The Washington Department of Fish and Wildlife (DFW) provides many types of fisheries in response to public desires. DFW manages both trout and warmwater recreational fisheries based on many different species of fish and levels of difficulty. Pubic demand for and participation in trout fisheries is very high. These fisheries are prized as opportunities for families to recreate together as well as providing an appropriate challenge for occasional or novice anglers. Year around season trout fisheries provide a relaxed recreational opportunity and are also integral to the state and many local economies.

Corral, Blythe, Chukar, and Scaup lakes have a long history of being managed as trout fisheries. Management intends to return Corral, Blythe, and Chukar lakes to trout fisheries, as per the Management Plans established over 20 years ago. Scaup Lake will be treated, however, no further stocking will occur per Refuge request, and this lake will provide a haven for other non-game species. Only the complete rehabilitation or the stocking of catchable-sized fish can restore the trout fishery in these waters now. Rehabilitation will eliminate or drastically reduce inter-specific competition and predation, allowing the trout fingerlings to flourish. The cost of annually stocking of catchable-sized trout and creating a mixed species fishery would be an order of magnitude greater for the larger trout necessary to attract anglers. Without a very significant capital investment, current resources are not available to provide catchable-sized trout on a regular basis without severely impacting hatchery production for many other fisheries. Managing these waters as warmwater fisheries will not create the same amount of recreation, as evidenced by the decline in participation as the trout fishery ebbs.

III. INTENDED OUTCOME/MEASURE OF SUCCESS:

DFW intends to restore Corral, Blythe, and Chukar lakes to popular, easily accessible trout fisheries based on fingerling-stocked trout. The average catch rates should be at least two to three 10-12 inch trout per angler. Success will be measured during random creel contacts and biological surveys. Given a reasonable chance of reducing the populations of undesirable species dramatically, the beneficial effects should last approximately 6 to 8 years under current management schemes. In addition to reasons listed under Resource, Recreational and Economic Impacts, to abandon these lakes as trout fisheries is to invite other incursions across the state.

IV. RESOURCE IMPACTS:

1. The populations of the target species, pumpkinseed sunfish, and possibly yellow perch and crappie, will be severely and negatively impacted. All are exotic species.

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.

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.

3. Loss of the following year's fishery will occur for Blythe, and Chukar lakes since Refuge policy forbids planting catchable-sized fish. The fishery will begin again one year after treatment. Hunting will be curtailed during the treatment (about 2 days). These waters are not a source of potable water for humans or livestock. The lakes will be closed to angling, and other recreational uses such as boating, and swimming will be curtailed during the planned period of treatment.

4. Professional biologists and other naturalists have visited this site frequently over the past 40 years. To our knowledge, no endemic, rare, threatened or otherwise listed species will any be impacted by the rehabilitation.

V. MITIGATING FOR ADVERSE IMPACTS:

1. Provided catchable-sized fish are available the following spring, no loss of recreational fishing time will occur for Corral Lake. Trout fry survival and growth for all the proposed waters will be greatly enhanced, and future trout fisheries will attain their previous status. No removal of dead fish is planned as the nutrient base contained therein is best returned to the lake.

Fall rehabilitation will not interfere with waterfowl spring nesting. The eradication of spiny-ray fishes would also benefit waterfowl through increased production of invertebrates. Stocked populations of trout will not be anywhere near as numerous as the current spiny-ray population.

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.

2. Downstream resources will not need to be protected as those waters are infested with carp and any secondary kill ensuing in that area would also be beneficial to waterfowl production.

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

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

5. 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: ALSO SEE PROPOSAL I.A.

Recreational opportunity will be increased. When free of competing species, these lakes are estimated to host 20-30 angler trips per week during the usual angling season, accounting for at least 1,000 recreation-days per year. The lakes could conservatively sustain five times that amount of pressure at the anticipated levels of success.

Angler success should reach three to five fish per trip. Yearling trout should average about 11 inches. Carryovers should be expected to be about 10% 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 5,000 trips made to these lakes as a result of the proposed management action would result in an increased economic impact totaling $188,950 per year (1991 dollars; based WDW estimate of $37.90 per trip). If used to its full potential, the annual value could be over $377,900 to the state's economy. The fishery as it now exists generates less than $10,000 per year. Rehabilitation would bring back the fishery and associated economic activity.

The total annual cost to plant these lakes is less than $2,000. The rehabilitation will cost the Department about $30,000 (including costs of rotenone, time, travel). Even if rehabilitations occur every five years, the cost of fry plants (5 yrs.) and the rehab totals $40,000. The cost of stocking catchable-sized trout, if this were possible (see IA), would be nearly $75,000 for this five year period. During this same five years, the fishery would generate at least $750,000 and as much as $1,500,000 to the state's economy.

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 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 were held during July 2007 in Ephrata, Spokane, Prosser, and Olympia to explain DFW's 2007-08 rehabilitation proposals, assess public opinion, and address local concerns. The announcement was provided statewide and to area papers and radio stations and mailed to landowners and residents near the lakes.

The public meeting in Ephrata was held at 7 p.m. on July 11 at the WDFW Northcentral Region Office. Four people attended, including a representative of the WA Dept of Ecology. Most questions concerned the rehabilitation program in general. The public participants were primarily interested in the Chopaka and Sprague lake treatments, and all were in favor. No questions concerning the Corral, Blythe, Chukar, and Scaup chain of lakes arose.

The public meeting in Spokane was held at 6 p.m. on July 12 at the WDFW Eastern Region Office. Twenty-five people attended, most to discuss the Sprague Lake proposal, and the overall meeting tone was positive. The general opinion was that the project was a good idea and that the re-started fishery was anticipated to be a good thing for anglers in the Spokane area. No questions concerning the Corral, Blythe, Chukar, and Scaup chain of lakes arose.

The public meeting in Prosser was held at 7 p.m. July 12 at the Benton Rural Electric Association building. Two people attended. The public participants were primarily interested in the Byron and Sprague lake treatments, and all were in favor. No questions concerning the Corral, Blythe, Chukar, and Scaup chain of lakes arose.

The public meeting in Olympia was held at 7 pm on July 10, 2007 at the Dept of Natural Resources Building. No one from the public attended.

With approximately 50% of the lake's users living outside Grant County, actual percentages pro and con are difficult to obtain. Public support may be best judged by the number of participants in the fishery (vis-à-vis Recreational Impacts).

Comments on the SEPA for rehabilitations statewide will also be accepted during the month of August. The SEPA can be found on WDFW or WA Dept of Ecology's web sites, or at County offices (usually Planning Commission). Additional comments may be sent directly to WDFW via mail or e-mail.

Initiated by: Region Two Fisheries Management