

PRE-REHABILITATION PLAN

Smalle Creek (Pend Oreille County)

I. PROPOSAL

A. Justification for Proposed Rehabilitation

Westslope Cutthroat Trout (WCT) *Oncorhynchus clarki lewisi* are native to the Pend Oreille River watershed in Washington, but have declined in abundance and range. Cooperative efforts between the Washington Department of Fish and Wildlife (WDFW) and the Kalispel Tribe of Indians Natural Resource Department (KNRD) to restore native WCT to selected stream reaches within Pend Oreille County are underway.

Smalle Creek is a tributary to Calispell Creek (tributary to the Pend Oreille River) in Pend Oreille County. Smalle Creek was historically stocked with Eastern Brook Trout *Salvelinus fontinalis* (1933-1938, 1980-1981). Surveys conducted in 2014 confirmed that Eastern Brook Trout was the only fish species present above Smalle Creek Falls. Due to the presence of a natural barrier to prevent reinvasion by non-native fish, excellent habitat, and a monoculture of Brook Trout, Upper Smalle Creek (above Smalle Creek Falls) was chosen as a WCT restoration watershed. Rotenone treatment (rehabilitation) to remove non-native Eastern Brook Trout began in 2015 (Walker and Baker 2015). Treatments were repeated (once-annually) in 2016 and 2017 (Baker and Walker 2016; 2017). Environmental DNA (eDNA) sampling will be conducted in summer 2018 to determine whether Eastern Brook Trout have been eradicated within the project area. If so, WCT restoration will begin in fall 2018. If not, an additional treatment may be necessary to ensure complete removal of Eastern Brook Trout and would be proposed for summer 2018. It is anticipated that following successful non-native fish eradication in Smalle Creek, translocated WCT will establish a self-perpetuating population and occupy the project area.

B. Physical Description of Water Proposed for Rehabilitation

1. WATER: **Smalle Creek**
2. LOCATION: T33N, R42E, S13, 14, & 15 and T33N, R43E, S18, 19, 20, & 29, Pend Oreille County
3. SURFACE ACRES: N/A MAXIMUM DEPTH: N/A
4. DISCHARGE: up to 2.65 cfs
5. OUTLET: Tributary to Calispell Creek
6. STREAM: Yes. This is a tributary stream rehabilitation.
7. PUBLIC ACCESS: Yes
8. LAND OWNERSHIP: PUBLIC 70% (USFS), Large Timber Company (Riley Creek) 30%
9. ESTABLISHED RESORTS: None

C. Proposed Management Actions

1. WATER: **Smalle Creek**
2. TARGET SPECIES: Eastern Brook Trout
3. DATE LAST REHABED: Never
4. PROPOSED TREATMENT DATE: August 7, 2018
5. REPLANTING DATE: Estimated Summer/Fall 2019
6. SPECIES: Westslope Cutthroat Trout
7. CATCHABLES: 0 FINGERLINGS: 0 – Approximately 300 – 500 wild Westslope Cutthroat Trout will be introduced to Smalle Creek through translocation from source populations in the

Pend Oreille River Basin. Artificial rearing of fertilized gametes through use of Remote Site Incubators (RSI) may also be employed if sufficient fish are not available for translocation.

8. PROPOSED TOXICANT: Rotenone, liquid and powder. CONCENTRATION: 2.0 ppm

AMOUNT (ROTENONE AT 5% ACT. INGRED): 7.5 gal liquid and 16 lbs powder.

9. METHOD OF APPLICATION: Drip can, backpack sprayer, and rotenone/gelatin/sand mixture.

10. CREW DESCRIPTION: Leader(s) Bill Baker, Personnel ~ 50

II. PURPOSE:

Historically widespread and abundant throughout the lower Pend Oreille River Basin, WCT have experienced significant constriction of range and abundance within the last 100 years. Removal of non-native Eastern Brook Trout followed by restoration of WCT into Upper Smalle Creek is consistent with WDFW's goal to "conserve and protect native fish and wildlife". In addition, this work would aid in restoring ecosystem function, provide source stocks of genetically pure cutthroat for the future, and act as a buffer against future petitioning of WCT under the Endangered Species Act (ESA).

III. INTENDED OUTCOME/MEASURE OF SUCCESS:

This project has two objectives:

1. Eradicate non-native Eastern Brook Trout from Upper Smalle Creek and its tributaries.
2. Establish a self-sustaining, healthy population of WCT in Upper Smalle Creek and its tributaries.

The successful achievement of Objective 1 would be readily apparent following the final rotenone treatment when no fish carcasses are observed by drip can operators or found in post-treatment surveys in the treated reach. Follow-up eDNA sampling will also be used to confirm complete eradication of Eastern Brook Trout. A reproducing population of WCT, expanding both in population size and spatial distribution, would indicate successful completion of Objective 2. Successful achievement of Objective 2 may take multiple years.

IV. RESOURCE IMPACTS:

1. The population of the target species, Eastern Brook Trout, will be eradicated. Brook Trout compete with WCT for resources and must be completely removed to achieve project success.
2. Regional Lands, Habitat, Wildlife and Non-Game managers have been apprised of the proposed Smalle Creek rehabilitation. 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. 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. The Smalle Creek treatment area is located within the Dirty Shirt

Pack of wolves *Canis lupus* home range, but wolves are unlikely to be in/stay in the area during treatment due to increased human presence, traffic, and activity in the days surrounding treatment.

V. MITIGATING FOR ADVERSE IMPACTS:

1. Drinking water will be provided to landowners downstream of the project area (who use stream water for drinking) during the period of rotenone presence in the project area. Removal of the majority of dead fish is planned. Dead fish will be buried on USFS property. Additionally, water filtration may be supplied to downstream landowners who obtain drinking water from the stream if collection of fish carcasses is deemed not sufficient to alleviate public health concerns related to bacteria from decomposing fish in the stream.
2. Summer rehabilitation will not interfere with spring nesting of waterfowl or spawning of adult/rearing of juvenile amphibians.
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 or birds. 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. The Smalle Creek treatment area is located within the Dirty Shirt Pack of wolves *Canis lupus* home range, but wolves are unlikely to be in/stay in the area during treatment due to increased human presence, traffic, and activity in the days surrounding treatment.
5. Appropriate respirators and other personal protective equipment (PPE) will be utilized by staff involved with mixing and distributing liquid and powder rotenone per the American Fisheries Society Rotenone Standard Operating Procedure (SOP) manual.
6. The stream 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:

Recreational use of the Smalle Creek drainage is limited. Eastern Brook Trout formerly found within the treatment area were small in size (4-6 inches) and did not receive significant angling pressure. There are currently very few or no fish left in the project area. Westslope Cutthroat Trout will provide limited angling opportunity following establishment of the population, but will also be small. Hunting, wood gathering, berry picking, and hiking likely occur on or near Smalle Creek, but should not be adversely affected by the treatment.

Angling will be impacted by the change in species, as WCT will have more restrictive harvest regulations (daily limit 2; minimum size 8 inches) than those in place for Eastern Brook Trout (daily limit 10 with no size restrictions currently; no daily limit or size restrictions effective July 1, 2018).

VII. ECONOMIC IMPACTS:

Economic impacts will be limited for this project area. Angling pressure is very light in the Smalle Creek project area, and contributes little to the local economy. Cost to WDFW to conduct this treatment and reintroduction is estimated at \$291,000. This project is primarily funded through contracts with the Kalispel Tribe of Indians (Bonneville Power Administration (BPA) mitigation funds) and the Pend Oreille Public Utility District #1 ((POPUD) Federal Energy Regulatory Commission (FERC) mitigation funds).

As noted previously, the establishment of WCT in Smalle Creek is intended to provide some buffer against future potential listing of the species under the ESA. An ESA listing of WCT could impact area farming/ranching, logging, and mining operations, which comprise a portion of the Pend Oreille County economy.

VIII. RELATED MANAGEMENT ACTION:

See I.C.6. for post-treatment fish reintroduction information. Following establishment of WCT, annual surveys will be conducted to monitor population abundance, spatial distribution, and genetic metrics.

IX. PUBLIC CONTACT:

Public meetings will be held during July 2018 in Pend Oreille County and Olympia to explain WDFW's 2018-19 rehabilitation proposals, assess public opinion, and address local concerns.

X. REFERENCES

- Baker, W. P., and B. M. Walker. 2016. 2016 Post treatment and discharge monitoring report for Smalle Creek in Pend Oreille County, Washington. Washington Department of Fish and Wildlife, Spokane.
- Baker, W. P., and B. M. Walker. 2017. 2017 Post treatment and discharge monitoring report for Smalle Creek in Pend Oreille County, Washington. Washington Department of Fish and Wildlife, Spokane.
- Bradbury, A. 1986. Rotenone and trout stocking. Washington Department of Game, Fisheries Management Division. Fisheries Management Report 86-2.
- Walker, B. M., and W. P. Baker. 2015. 2015 Post treatment and discharge monitoring report for Smalle Creek in Pend Oreille County, Washington. Washington Department of Fish and Wildlife, Spokane.

Initiated by: Region 1, District 1 Fisheries Management