

STREAM MANAGEMENT PLAN

03/22/2017 – Bill Baker and Brian Walker

Water(s): Highline Creek (Pend Oreille Co.)

Location: The Highline Creek treatment area is located approximately 4 miles east of Metaline Falls.

	Distance:	Max Depth:	Discharge:
Highline Creek	~0.75 miles	n/a	up to 1.25 cfs

Water Source: Numerous springs and seeps, rainfall and snowmelt run-off.

Outflow: Tributary to Sullivan Creek (tributary to the Pend Oreille River).

Management History:

Highline Creek is managed under Washington Department of Fish and Wildlife (WDFW) general stream regulations, including a 5 fish limit (no minimum size) for Brook Trout *Salvelinus fontinalis*, and a 2 fish limit (8" minimum size) for all other trout (Daily bag limit = 5 fish total). Highline Creek was presumably inhabited by native Westslope Cutthroat Trout *Oncorhynchus clarki lewisi* (WCT). Non-native Brook Trout were introduced into the Sullivan Creek drainage in the 1930's (WDFW unpublished data). Non-native Brook Trout and sculpin *Cottus* spp. (native) are currently the only fish species present in Highline Creek. It is presumed that WCT were out-competed by Brook Trout and have been extirpated from the Highline Creek drainage. Following declines of WCT abundance and range, cooperative efforts between WDFW, Seattle City Light, and the Kalispel Tribe of Indians Natural Resource Department have begun to restore native WCT to selected stream sections in Pend Oreille County. Highline Creek is uniquely suited to WCT restoration due to the presence of a complete upstream fish passage barrier (antiquated log-crib dam) to prevent reinvasion by non-native fish and a simple fish community, currently composed primarily of Brook Trout. It is anticipated that following non-native fish eradication in Highline Creek, reintroduced WCT will establish a self-perpetuating population and re-occupy the treated area.

Native sculpin were observed in the proposed treatment area in fall 2016, and tentatively identified as Slimy Sculpin via morphometric characteristics. Tissue samples were collected and submitted to WDFW's Molecular Genetics Laboratory for species identification (results pending). Sculpin present in the treatment area will be collected, enumerated, and translocated to Sullivan Creek prior to treatment. Following successful eradication of Brook Trout and re-establishment of WCT, native sculpin (presumably Slimy Sculpin) will be collected from Sullivan Creek and restored to Highline Creek.

T&E Flora and Fauna: Professionals from multiple resource agencies have visited this site during the last 50 years. No known report exists of any threatened or endangered species habitually found within the proposed treatment area. The treatment area is located within the home range of the Salmo wolf *Canis lupus* (Washington State endangered) pack, but wolves are unlikely to occupy the area during treatment due to increased human presence, traffic, and activity in the days surrounding treatment. Similarly, lynx *Lynx canadensis* (Federal-Threatened; WA-Endangered), fisher *Martes pennanti* (Federal-Candidate; WA-Endangered), grizzly bear *Ursus arctos* (Federal-Threatened; WA-Endangered), wolverine *Gulo gulo* (Federal-Candidate; WA-Candidate), and woodland caribou *Rangifer tarandus* (Federal-Endangered; WA-Endangered) either historically, or currently, occur within the Selkirk Mountains. However, the likelihood of presence of these species in the treatment area is very low.

Management Objectives:

1. Eradicate non-native Brook Trout from upper Highline Creek and its tributaries.
2. Salvage native sculpin from the Highline Creek treatment area and translocate them to Sullivan Creek.
3. Re-establish a self-sustaining, healthy population of WCT in the treated area.
4. Following successful re-establishment of WCT, translocate native sculpin from Sullivan Creek back into the Highline Creek watershed.

The successful achievement of Objective 1 would be readily apparent following the final rotenone treatment when no fish carcasses are observed within the treatment section. Environmental DNA (eDNA) sampling may also be used to determine Brook Trout presence/absence. Objective 2 would be accomplished by collecting as many sculpin from Highline Creek as possible and translocating them to Sullivan Creek prior to treatment. A reproducing population of WCT, expanding both in population size and spatial distribution, would indicate successful completion of Objective 3. Successful achievement of Objective 4 will be accomplished by translocating sculpin back into Highline Creek. This could take several years, as successful re-establishment of WCT is a prerequisite.

1. Fishery Objectives:

None - While this fishery may experience very light angling pressure, native species restoration and conservation are the main goals of this action. WCT size will be small (generally < 6 inches in length), and the fishery is unlikely to receive much interest from the general public.

2. Angler use objective: n/a

3. Stocking Objectives:

<u>Stream</u>	Species	Number of Fish Stocked			Planting Month
		Total	/Acre	/Pound	
Highline Creek	WCT	100	n/a	n/a	Spring 2020; translocation from wild source populations.
Highline Creek	WCT	1,000 – 5,000	n/a	n/a	Spring 2020; remote site incubation (RSI) of fertilized gametes.
Highline Creek	Native Sculpin	TBD	n/a	n/a	TBD; translocation from wild source populations.
Highline Creek	WCT	TBD	n/a	n/a	Additional translocation or RSI production as needed from 2020-2024.

Management Strategy:

Translocate 100 genetically pure wild WCT from geographically proximate populations within the Sullivan Creek drainage to Highline Creek in the first year following successful Brook Trout eradication. If needed (depending on the number of donor fish available), produce WCT fry from fertilized gametes and incubate in Remote Site Incubators (RSI) to augment the number of translocated fish.

Beginning the second year after translocation, monitor the restored WCT populations through electrofishing to assess population size, spatial distribution, genetic metrics, and ensure that non-native fish have been eradicated (or have not been illegally reintroduced).

Translocate native sculpin (number to be determined) from the Sullivan Creek drainage to Highline Creek following successful re-establishment of WCT.

Continue population monitoring every 2-5 years as necessary.