

The Coastal Cutthroat Habitat Restoration Project

Final Report

PSMFC Grant No. 21-004G



Figure 1: Photo Credit - Lucas Marin

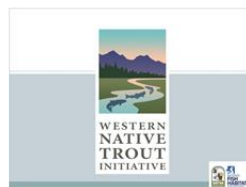
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Project Partners:



Deepening the connection between land, people, and salmon through restoration, education, and research.

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The Coastal Cutthroat Habitat Restoration Project

Project Summary:

The Coastal Cutthroat Habitat Restoration Project was carried out in a three phase process, which started with outreach presentations, moved to genetic data collection, and finished with riparian habitat restoration efforts. The purpose of this project was to educate and connect recreational fisherman on current studies involving Coastal Cutthroat Trout (CCT) and then employ them to collect genetic samples quarterly from Hood Canal. In order to obtain an inclusive genetic sample set, Hood Canal was split into seven regions with the goal to collect six genetic samples from each region during each quarter of 2021. During the last phase, once genetic samples were analyzed and compared to a Hood Canal CCT genetic baseline, the project goal was to identify CCT specific watersheds. Then reengage recreational fishing clubs to participate in riparian habitat restoration on two of those watersheds.

Summary of Progress and Results:

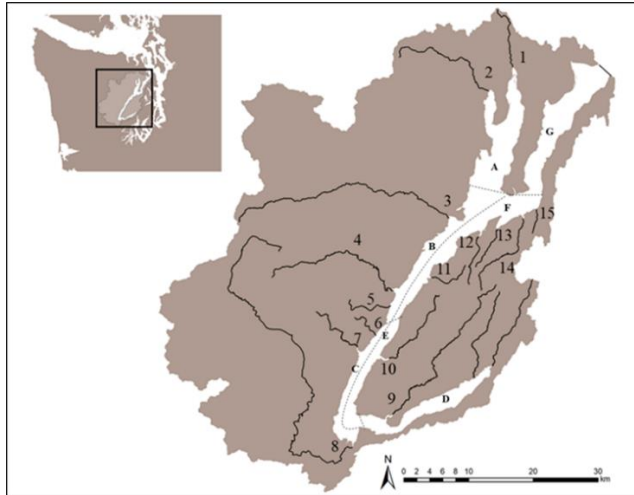
The first phase of the project was to conduct a series of outreach presentations at four local fly fishing club meetings and angling organizations. Initially, Coastal Cutthroat Coalition (CCC) Executive Director, Greg Shimek and Hood Canal Salmon Enhancement Group (HCSEG) Education and Outreach Coordinator, Lucas Marin, developed outreach presentations. These presentations focused on CCT life histories, past research in the South Puget Sound, future sampling events related to this project in the Hood Canal watershed, and opportunities for local sport fishing/angling groups and community members to help with these events. In November 2020, December 2020, and January of 2021 outreach presentations were delivered to four local angling clubs; the Bainbridge Island Fly Fishing Club, Puget Sound Fly Fishers, South Sound Fly Fishers and Kitsap Olympic Peninsula Chapter of Trout Unlimited. CCC Executive Director, Greg Shimek, performed presentations at various locations that included speakers from HCSEG along with Washington Department of Fish and Wildlife (WDFW) biologists. Each club was then assigned one of four quarterly beach angling events to be held in 2021.

Phase two of this project involved genetic data collection which included both professional fish biologists, fly fishing club group events, and citizen scientists that took place quarterly throughout marine waters of Hood Canal. HCSEG Staff, biologists, local fishing guides and interested anglers gathered at sample sites to conduct hook and line sampling and beach seining to collect genetic samples, in the form of caudal fin clips. *See Table 1.*

Big Fjord Project - Fly Fishing Club Group Fishing Days			
Date	Club	Location	# of Participants
3/5/2021	Puget Sound FF Club	Potlatch S.P.	11
6/18/2021	Kitsap/Olympic Peninsula TU	Lilliwaup Tidelands S.P.	12
9/10/2021	Bainbridge Island FF Club	Point Whitney	4
12/10/2021	South Sound FF Club	Twanoh S.P.	14

Table 1: Recreational Group Fishing Events

Phase two of this project began in January of 2021 and continued throughout the year. The project goal was to collect six adult CCT samples in each of the seven regions of Hood Canal over each quarter of the year; resulting in a total of 168 genetic samples. See Figure 1. Scale samples and fin clips were taken from each individual for genetic analysis, as well as length, photo, and other catch data.



Hood Canal Watersheds		
1	Tarboo Creek	
2	L. Quilcene River	
3	Duckabush River	
4	Hamma Hamma River	
5	Jorsted Creek	
6	Eagle Creek	
7	Lilliwaup Creek	
8	Skokomish River	
9	Tahuya River	
10	Dewatto River	
11	B. Anderson Creek	
12	Stavis Creek	
13	Seabeck Creek	
14	Big Beef Creek	
15	L. Anderson Creek	

Figure 2: Map of Hood Canal regions & watersheds (Credit: WDFW)

Samples would later be analyzed in order to assign fish caught in the marine environment to their natal tributary. Results from genetic stock assignment will allow identification of streams that are underrepresented in CCT catch, informing future habitat restoration (Phase 3) work focused on species that depend on extended freshwater rearing (e.g. Coastal Cutthroat Trout, steelhead and Coho salmon).

Summary	Q1	Q2	Q3	Q4	Total	Original Study Goal
A	9	3	2	0	14	24
B	3	0	1	2	6	24
C	6	6	1	0	13	24
D	5	6	0	13	24	24
E	7	6	8	6	27	24
F	7	4	6	6	23	24
G	5	10	15	5	35	24
Total	42	35	33	32	142	168

Table 2: Catch results for each region per quarter

Table 2 shows the project did not meet all sample number goals for the year; this will be discussed further in the Challenges section of this report.

Phase three involved the selection of restoration sites, based on genetic sample analysis, chosen in watersheds likely to provide the greatest benefit to CCT, but were underrepresented in the catch. Native plantings provide ecosystem services: increasing stream shading, moderating stream water temperatures, improving bank stability, intercepting and infiltrating runoff and

associated pollutants, providing better water quality, increasing detrital inputs to feed aquatic invertebrate populations, and long term large woody debris recruitment.

During this phase an issue was encountered which will be discussed in the Challenges section in detail, but we were not able to select restoration sites that represented the greatest need for CCT that were underrepresented in the catch. However, two sites were chosen for habitat restoration, which will benefit CCT and other salmonids spawning and rearing grounds based on CCT productivity data obtained through HCSEG’s juvenile smolt trapping programs. Anglers and project partners involved in phase two participated in the habitat restoration events as well.

Site #1 was at RM: 0.3 (47°49'41.41"N 122°51'55.87"W) on the Little Quilcene River. Site #2 was at RM: 4.5 (47°29'53.5"N 122°59'22.7"W) on the Dewatto River. The first event was held on February 5, 2022 at the Little Quilcene River site and the second event was held on March 5, 2022 at the Dewatto River site. *See Table 3 and 4* for planting details.

Fly Fishing Club Riparian Restoration Days		
Date	Location	# of Participants
2/5/2021	Little Quilcene River	5
3/5/2021	Dewatto River	13

Table 3: Riparian Restoration Participation

Coastal Cutthroat Habitat Restoration Project - Planting Metrics			
Date	Watershed	Species	Total Planted
2/5/2022	Little Quilcene River	Cottonwood	50
		Hookers Willow	50
		Twinberry	50
		Slough Sedge	150
3/5/2022	Dewatto River	Paper Birch	300
		Red Alder	300
		Sitka Spruce	100
Total			1000

Table 4: Species planted at each site

At the Little Quilcene site, recreational anglers installed either cottonwood, willow, or twinberry paired with a slough sedge plug; and then protected with an 18” solid blue plant protectors, secured to a 2 foot tall wooden stake with two zip ties.

At the Dewatto site 100 spruce were protected with 3 foot tall mesh protectors secured to a cedar arrow shaft stake. None of the deciduous trees were protected.

Challenges:

There were two major challenges encountered over the course of this project, which will be discussed in detail below. These challenges were as follows:

1. COVID-19 caused delays in getting the genetic samples analyzed in a timely manner

As everyone knows, the COVID-19 pandemic caused a lot of problems and delays within every sector of our community and businesses. When the schedule for this project was first drafted it

was anticipated all CCT genetic samples would have been analyzed by the beginning of 2022. Those data were intended to inform HCSEG as to which watersheds were most underrepresented in the catch and therefore would be high candidates for the riparian vegetation planting phase of this project.

Due to the fact the WDFW Genetics Lab wasn't operating at full capacity during 2021 because of COVID-19 restrictions, we were made aware in late 2021 that the report for these samples was not going to be available until October of 2022.

In order to maintain the spirit of this grant, which was to connect recreational anglers to this project through all three phases, it was decided that we would proceed with the volunteer plantings HCSEG already had planned for February and March 2022 and market those planting events to the original four fly fishing clubs who took part in this study.

This proved to be a successful alternate strategy as we were able to get a lot of participation from members of the four fly fishing clubs who came to the riparian plantings and between both sites 1000 native plants were put into the ground.

2. More staff time was used to gain genetic samples than was originally anticipated

In order to meet our genetic sample goals more staff time was required than we originally anticipated. To involve more recreational anglers and get further assistance with sample collections, we decided to partner with the guide community that was familiar with the Hood Canal area. The plan was to have a biologist and an angler accompany a guide to gain more genetic samples. However due to a number of reasons such as weather, timing, availability of guides, communication difficulties and others this portion of the project proved to be more challenging than anticipated. Thankfully the guide community is quite numerous for this fishery and a number of them offered their services to assist in the sampling. With their assistance we were able to fill a large portion of the sample requirements. The guidance and assistance from these guides and other local anglers proved to be another avenue where we were able to connect with local fisherman to help support this project.

Conclusion:

In conclusion, even with the above challenges we faced, we feel this project embraced the intent of this grant program. CCT are an understudied and largely misunderstood anadromous species in Puget Sound. In recent years, with the decline in salmon and steelhead an increasing number of recreational anglers are targeting CCT. With CCT now facing extra fishing pressure there is a need to continue to study CCT life histories and help educate anglers on the importance of protecting this species and other salmonids by increasing and improving quality spawning and rearing habitat in our freshwater watersheds. Through this project we were able to engage members of four fly fishing organizations, as well as, many Hood Canal recreational anglers and educate them on current CCT research. Then connect with these anglers again by having them help collect genetic and life history samples from adult Hood Canal CCT. Each phase of this project opened an avenue of communication between research scientists and recreational anglers. Initially, the information came in the form of presentations, but ironically a lot of question/answer sessions spontaneously occurred during the angling days and the planting days.

Even though the DNA analysis is not completed yet, as a result of this funding a symbiotic relationship formed between project scientists and recreational fisherman. It isn't very often when a research project can include an educational and citizen scientist component. The research will be completed and the data will provide insight into which watersheds in Hood Canal produce CCT. Additionally this project provided an opportunity for recreational fisherman to contribute to scientific research that promotes conservation and restoration of CCT in Hood Canal.

We are grateful to NOAA Fisheries for providing funding and to the Pacific States Marine Fisheries Commission for managing the grant and keeping us on track with our deliverables. Staff at Washington Department of Fish and Wildlife and the Coastal Cutthroat Coalition provided important technical support. This included Greg Shimek, Gabe Madel, Riley Freeman, Mark Downen, Todd Seamons and James Losee. We would also like to thank Therese Thompson from the Western Native Trout Initiative, who served as our Fish Habitat Partner and helped steer and guide us during the grant application process.



Figure 3: Various project photos from beach fishing and riparian restoration days (All photos taken by Clayton David)