

Nomination Form Anadromous Waters Catalog

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Aquatic Resource Permit SF2021-193

IPOP – BONANZA CHANNEL

FISHERIES BASELINE SAMPLING 2021

Principal Investigator: Stephen T. Grabacki FP-C President, and Certified Fisheries Professional FISHEYE Consulting, Anchorage (907) 230-2866 fisheyecon@gmail.com

1 INTRODUCTION

This document reports the results of baseline fisheries sampling for a proposed gold dredging project in Bonanza Channel, Alaska. FISHEYE Consulting (FISHEYE) set nine wire-mesh minnow traps at selected locations within the claim area on 29-30 July 2021. A beach seine was used at three locations in early August.

All fishes were identified to species when possible (Table 1), measured to fork or total length (as appropriate for each species), and released in apparent good condition.

Table 1 – Species of Fishes Captured During Sampling

Fish	Species
Threespine stickleback	Gasterosteus aculeatus
Sandlance	Ammodytes hexapterus
Starry flounder	Platichthys stellatus
Least cisco	Coregonus sardinella
Sculpin	(not identified to species)

2 BACKGROUND

IPOP proposes to dredge for placer gold in its claim blocks in Bonanza Channel. FISHEYE is one member of IPOP's multidisciplinary team of scientific consultants. Stephen T. Grabacki, FISHEYE's Certified Fisheries Professional, led the fisheries investigation under the stipulations of Aquatic Resource Permit (ARP)

SF2021-193. He performed the minnow trap task, and Mac Shoulders and David Eilers (who are named on the ARP) conducted the beach seine task.

3 METHODS

FISHEYE selected the fish sampling stations with the intent of obtaining a brief "snapshot-style" understanding of fish distribution and relative abundance in IPOP's Bonanza Channel claims area.

Within Bonanza Channel, there are no apparent aquatic habitat features which could differentiate one portion of the channel from another. Therefore, FISHEYE arrayed the sampling stations to cover the entire length of the claim area, at roughly equal intervals along the shoreline – six traps along the northern shore, one trap in mid-channel, and two traps along the southern shore.

The minnow traps were baited with commercially-cured salmon roe, which was enclosed in perforated plastic bags. The traps were securely tethered to shore and were allowed to soak overnight. As required by the ARP, FISHEYE labeled all minnow traps with tags that stated the permitee name, telephone number, and permit number.

This sampling method measured "catch per unit of fishing effort" (CPUE), which estimates the relative abundance (as vs. absolute abundance) of the fish. That is, these data are useful for comparisons among sites, months, and years. CPUE in minnow traps is expressed as fish per day (where a "day" is defined as 24 hours).

The beach seine was a 50 ft x 4 ft x ¼ inch knotless mesh. The seine was operated in several deployments, each approximately 3,500 sq ft. Two techniques were used:

- In the first technique, the net starts out fully extended on the shoreline. One pole would remain still while the deep pole was slowly pulled in a half circle until extended on the opposite side of the stationary pole. Then both poles were brought together, and the net gathered.
- The second technique was further from shore where the net was fully expanded perpendicular to shore and both ends walked at a slow pace to cover approximately 75 linear ft, then the poles brought together, and the net brought to shore.

The locations of beach seine sites (GPS):

- Site 1 64.517528, -164.559904. Four continuous deployments heading west along southern shore of island; all using the half-circle technique.
- Site 2 64.518075, -164.568688. Two continuous deployments heading north along the western shore of island; first using half-circle technique next to shore, second using second technique approximately 60 ft from shore for shallow end.
- Site 3 64.523155, -164.565794. Four continuous deployments heading west along the northern shore. First using half-circle technique and remaining three deployments using the second technique approximately 50 ft from shore for shallow end.

4 RESULTS

The minnow traps captured 50 threespine stickleback in 19 hours of soak-time, for an equivalent CPUE of 63.2 fish per day in the nine traps, or 6.92 fish per trap per 24-hour day (Table 2).

Table 2 – Locations of Minnow Traps, Number of Fish Captured in Each Trap, and Size Ranges

			Number	Fork Length	
Station	N Lat.	W Long.	of Fish	(mm)	Comments
Trap 1	64.51218	-164.60027	12	72-86	
Trap 2	64.51696	-164.59259	26	62-90	
Trap 3	64.51962	-164.58405	2	82-84	
Trap 4	64.52042	-164.57739	0		trap damaged
Trap 5	64.52265	-164.57061	7	71-84	
Trap 6	64.52414	-164.56310	1	88	
Trap 7	64.52167	-164.56141	0		not in water
Trap 8	64.52098	-164.55584	2	83-86	
Trap 9	64.51804	-164.55617	0		

Notes -

- trap 1: two fish had red areas on abdomen
- trap 2: one fish had damaged tail; one fish was unusually plump
- trap 5: one fish had damaged tail

- trap 6: fish was unusually slim, with sunken belly
- trap 7: water level dropped a lot overnight

Most of the fish were 70-89 mm in fork length (Figure 1).

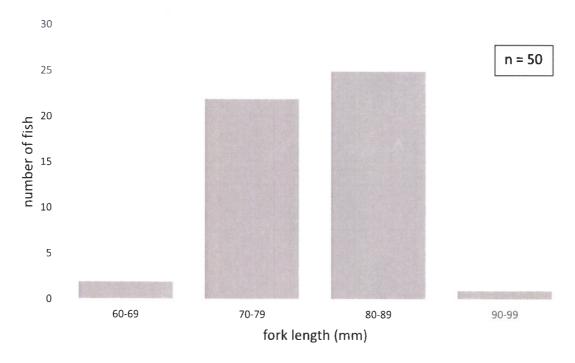


Figure 1 – Fork Lengths of Threespine Stickleback

The minnow traps captured no other species of fish. One fish – possibly a Dolly Varden char (Salvelinus malma), roughly 20 cm fork length – was observed jumping while the boat was moving between stations.

Other observations:

- (1) Before and during this sampling, there was a strong, sustained wind from the southwest.
- (2) The physical habitat is not hospitable to fishes. There is no structure (cobble, woody debris, etc.) and no cover.
- (3) The water quality is extremely variable, with wide fluctuations in salinity and depth. These fluctuations are driven by the wind direction, and occur very rapidly, in the space of a few days. The water level dropped so quickly from Thursday July 29 to Friday July 30 that (a) one of our traps was exposed, although we thought we had set it in sufficiently deep water, and

(b) we observed four stickleback that appeared to have been stranded amidst the grass.

The beach seine captured five species of fish (Table 3).

Table 3 – Number of Fish Captured by Beach Seine

Species	Length or Length	Number of Fish Captured at Each Location													
	Range (mm)*	Site 1	Site 2	Site 3											
Stickleback	0-20	91	257	649											
	20-40	84	0	0											
	40-60	4	0	0											
	60-80	91	43	15											
	> 80	5	0	0											
	40-60	1	1	0											
Sandlance	40-60	10	0	11											
	60-80	1	3	4											
Starry flounder	0-25	6	23	104											
	85	0	0	2											
	95	0	1	1											
	140	1	0	0											
	155	0	1	0											
	170	0	0	1											
Least cisco	60-80	1	0	5											
	80-100	0	2	6											
	244	0	1	0											
Sculpin	50	0	0	1											

^{*} fork length or total length, as appropriate to each species

Aquatic Resource Permit report of collection activities — Data Submission Form (daf).

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