

Agency	US Fish and Wildlife Service
Program	15.608 – Fish and Wildlife Management Assistance
Agreement Number	F22AC02350
Grantee	Tyonek Tribal Conservation District
Project Title	Anadromous Waters and Elodea Surveys in the Remote Western Mat-Su and Kenai Peninsula Borough Lands of Western Cook Inlet
Report Type	Interim Performance Report
Report Period	10/1/22 – 9/30/23
Date of Report	December 19, 2023

Summary

From October 1, 2022, to September 30, 2023, TTCD worked to identify and protect salmon habitat in western Cook Inlet, Alaska with anadromous fish surveys in the remote western Matanuska-Susitna (Mat-Su) Borough, and Elodea surveys in both the remote western Mat-Su and Kenai Peninsula Borough lands of western Cook Inlet. In 2023, TTCD and partners surveyed a combined total of four remote western Cook Inlet Kenai Peninsula waterbodies for Elodea presence/absence and 11 sites for anadromous fish, resulting in four Alaska Anadromous Waters Catalog nominations comprising 11.2 stream miles. No Elodea was detected in the surveyed waterbodies. For the project period 2022-23 TTCD surveyed 30 sites for anadromous fish, and 11 lakes were surveyed for Elodea. In total, TTCD staff submitted 12 AWC nominations for 31.2 stream miles.

Milestones for Report Period

KPFHP – Elodea Surveys

Task	Anticipated Completion Date	Status	Notes
Identify and prioritize remote waterbodies for	June 30, 2024	Complete	TTCD prioritized waterbodies in West Cook Inlet for Elodea

presence/absence survey of Elodea on the Kenai Peninsula lands of western Cook Inlet			surveys based on documented floatplane use and previous surveys, intending to survey remaining waterbodies with floatplane use that had never been surveyed previously.
Conduct Elodea presence/absence surveys at 2 waterbodies by collaborating with the Kenai Watershed Forum and Cook Inlet Aquaculture Association to survey the floatplane-accessible waterbodies in the Big River Lakes area.	June 30, 2024	Complete	Complete. CIAA surveyed Wolverine Lake in the BRL in 2022 and Fisher Lake in 2023.
Conduct Elodea presence/absence surveys at 4 additional waterbodies collaboratively with Cook Inlet Aquaculture Association.	June 30, 2024	Complete	CIAA surveyed 2 additional waterbodies in 2023: a McArthur River drainage lake and Bunitlana Lake. TTCD surveyed Congahbuna Lake and Packers Creek Lake on Kalgin Island.

MSBSHP – Anadromous Waters and Elodea Surveys

Identify and prioritize remote waterbodies for presence/absence surveys of Elodea in the remote western Mat-Su	June 30, 2023	Complete	TTCD identified and prioritized remote waterbodies for Elodea surveys within the Phase I geographic scope.
Conduct presence/absence surveys at 5 remote waterbodies following the double observer protocol	June 30, 2023	Complete	Completed in 2022: TTCD surveyed 6 waterbodies for Elodea presence/absence in the remote western Mat-Su Borough.
Identify data gaps in the Alaska AWC in the remote western Matanuska Susitna Borough by coordinating with the ADFG and by analyzing existing data by species and life stage.	June 30, 2023	Complete	TTCD collaborated with ADF&G habitat biologists to identify data gaps, sites previously surveyed, and/or unsubstantiated AWC listings.
Conduct fish surveys at a minimum of 10 locations to add to the state AWC.	June 30, 2023	Complete	TTCD conducted anadromous fish surveys at 11 sites with additional funding not used in 2022.

			TTCD conducted anadromous fish surveys at a total of 19 sites in 2022, for a total project total of anadromous fish surveys at 30 sites.
Plan Phase II of the project, including identifying the geographic scope of subsequent project years, increasing partner leverage, and equipment acquisition.	June 30, 2023	Complete	Phase II is funded and underway.

Accomplishments

KPFHP – Elodea Surveys

- The reporting period occurred during year two of a two-year project. In year one, TTCD collaborated with Kenai Watershed Forum (KWF) to select survey lakes and survey for Elodea presence/absence in the Big River Lakes (BRL) region of western Cook Inlet.
- TTCD surveyed two KPB waterbodies in 2023.
- TTCD partnered with Cook Inlet Aquaculture Association, who surveyed a second lake in the BRL region (Fisher Lake), an unnamed lake in the McArthur River drainage, and Bunitlana Lake.

Wednesday, August 9, 2023, CIAA staff members flew to Bunitlana Lake located near the Kastana River and conducted a full double survey of the lake. The lake was heavily vegetated making landing the plane and paddling around the lake difficult. No Elodea was found on the survey, and all native vegetation was identified and documented. On August 10, CIAA staff continued to survey at an unnamed lake near coordinates 61.029, -152.134230, in the McArthur watershed. Though it was cloudy on the 10th, the winds were calm enabling the crew to complete a full double survey of the lake logging all native vegetation while finding no *Elodea*. On Friday, September 8, CIAA conducted its last *Elodea* survey for 2023 at Fisher Lake in the Big River watershed (Figure 1). These lakes were prioritized for surveys due to heavy floatplane traffic and several guide services that operate in the Big River system. The crew was thankful for the rocky clear shoreline of the lake in which they found little native vegetation and no *Elodea*.



Figure 1: CIAA biologist Emily Heale surveying Fisher Lake, September 8, 2023.

On August 22-23, Tyonek Tribal Conservation District staff surveyed two lakes in the remote western Kenai Peninsula Borough, Congahbuna, and Packers Creek Lake. The conditions on both days were ideal for aquatic plant surveys. The crew was able to conduct double observations at all samples sites on both lakes. No *Elodea* was found, and the team documented native aquatic vegetation.

MSBSHP - Anadromous Waters and *Elodea* Surveys

- *Elodea* Surveys
 - Completed in 2022.
- Anadromous Waters
 - In 2023, TTCD conducted fish surveys at 11 additional locations utilizing roe-baited minnow traps and a backpack electrofisher.
 - TTCD submitted 4 nominations to the AWC for a total of 11.2 stream miles.
 - TTCD is currently implementing Phase II of this project, which is funded and underway.

The first date of AWC sampling for 2023 occurred on July 24, 2023. Sampling occurred on Anderson, Beverly Hills Creek, and a tributary of Trail Creek. We visited 5 sites, with other sites not visited due to a lack of landing zones (Fig 2). We caught zero fish at site 4, and two northern pike (*Esox lucius*) at site 5 (Fig. 3) At site 6, we caught two juvenile coho salmon (*Oncorhynchus kisutch*), one juvenile Chinook salmon (*O. tshawytscha*), and several longnose suckers (*Catostomus catostomus*) and lamprey (*Entosphenus tridentatus* or *Lampetra* sp.). No additional Chinook were found at the site despite 711 seconds of electrofishing effort. Following Anderson Creek surveys, we surveyed site 12, a tributary of Trail Creek, and site 13, the lower extent of Beverly Hills Creek. We caught two juvenile coho, a burbot (*Lota lota*), and several lamprey at site 13, and the crew decided to survey upstream on subsequent days. At Site 12, we caught four

juvenile coho, four slimy sculpin (*Cottus cognatus*), one rainbow trout (*Oncorhynchus mykiss*), and one Dolly Varden (*Salvelinus malma*).



Figure 2: Map of anadromous fish sampling sites on Anderson Creek, 2023



Figure 3: A juvenile northern pike captured in Anderson Creek by TTCD staff, 7/24/23.

We conducted our final day of anadromous fish surveys for this funding on 8/2/23 and visited 6 sites. We sampled sites further upstream and on 2 tributaries of Beverly Hills Creek. We set minnow traps at two branches of a beaver-influenced tributary of Beverly Hills Creek; no anadromous fishes were caught or observed. We set four minnow traps on the second Beverly Hills tributary and caught 21 juvenile coho salmon. We surveyed two mid-creek sites along Beverly Hills Creek and caught juvenile coho and threespine stickleback (*Gasterosteus aculeatus*). Then, we fished minnow traps at the uppermost extent with a suitable landing zone and caught five juvenile coho and 120 threespine stickleback (Fig. 3). We also visited a small Trail Creek tributary, but due to shallow water, we were only able to backpack electrofish for a total of 110 seconds of shock time, catching one Dolly Varden. No other fish were observed.



Fig. 3: Juvenile coho caught at the upper extent of Beverly Hills Creek.