

Species at Risk: Banded Killifish and American Eel - 2022

Aboriginal Fund for Species at Risk (AFSAR)

Environment and Natural Resources, Qalipu First Nation



INTRODUCTION

Background

- American Eel: listed as threatened by COSEWIC



- Banded Killifish: listed as species of special concern by SARA

Aim

- Participate in the protection and recovery of aquatic species at risk.
- Use of collected data will lead to better management of eel fisheries.



STUDY LOCATIONS

Eel – Adult & Elver/Glass



Adult Eel sampled in Muddy Hole, Flat Bay, NL (48.401779° , -58.581177°); Elver and Glass Eel sampled at sites 1-4

Banded Killifish



Six locations throughout western NL: Duck Pond (48.385737° , -58.468062°); St. Georges Estuary (48.431156° , -58.481884°); York Harbour Estuary (49.057177° , -58.371305°); Wild Cove Brook (48.974027° , -57.883446°); Paul's Pond (49.11878° , -57.960934°); and Goose Arm (49.175746° , -57.851428°)

METHODS

Eel – Adult & Elver/Glass

- Equipment: commercial fyke nets and micro-mesh fyke nets set for 24-hour soaks



- Sample days: Flat Bay, NL
 - Adult Eel : 4 – fall
 - Elver/Glass: 26 – spring/summer
- Data Recorded:
 - Adult: (50 each day – random sample) date, length, weight, colour, and if released or not;
 - Elver/Glass: date, temperature, cloud cover, number of Elver and Glass Eel

Banded Killifish

- Equipment: Minnow Traps – 6 at each location, set for 24-hour soaks, baited with Ritz crackers



- Sample days: 3 at each location – Summer
- Data Recorded: water quality (pH, conductivity, salinity, and temperature), number of killifish

All Elver/Glass Eel were released
All bycatch were recorded and released

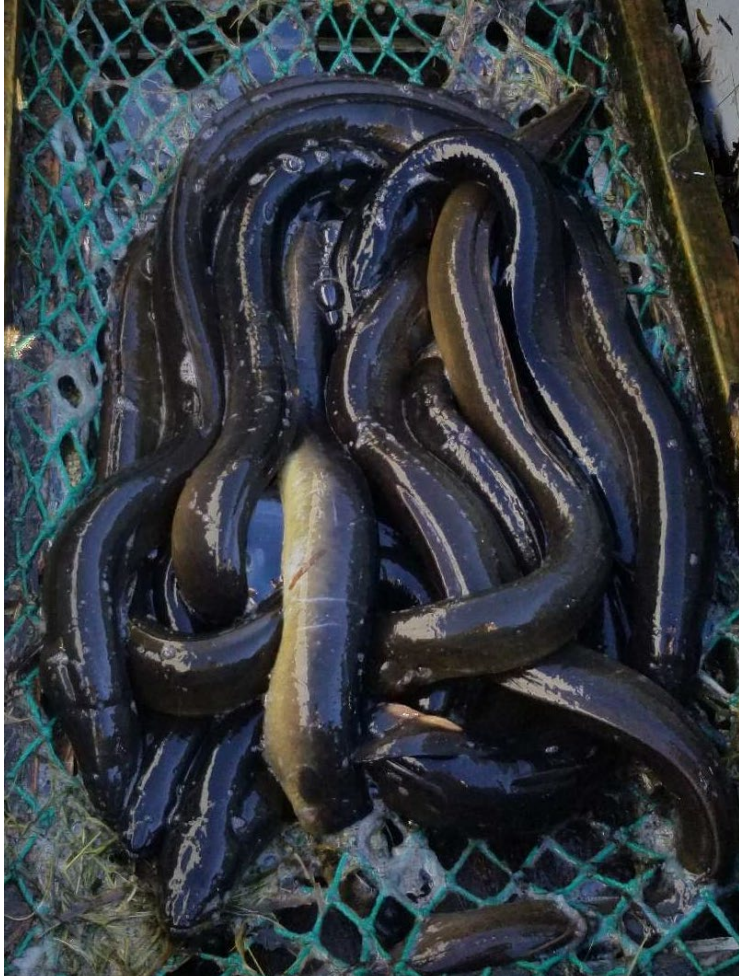
RESULTS

Commercial Eel - Adult

- Of the 200 eels measured (50 per day as a sample for size analysis), all were adult yellow eels

Table 1. Eel Measurements
Muddy Hole, Flat Bay, NL.

	Length (cm)	Weight (g)
Average	52.5	264
Min	26	60
Max	70	680



Elver & Glass Eel

- Sampling days occurred during the same time period in 2021 and 2022. Total sample days were decreased in 2022 to 26 from 45 sample days in previous years.



Table 2. Total catch of
Glass Eel and Elver for
2021 and 2022

	2021	2022
Glass	314	1234
Elver	255	264

- Dividing the total eel catch by number of sample days to determine catch per unit effort (CPUE), it is evident that catch rates were much higher in 2022 than 2021.

Table 3. CPUE for Glass Eel and Elver in 2021 and 2022, Muddy Hole, Flat Bay, NL

	2021	2022
Glass	314/45 = 6.98	1234/26 = 47.46
Elver	255/45 = 5.00	264/26 = 10.15



Muddy Hole, Flat Bay, NL (48.401779° , -58.581177°).
Commercial Eel harvester Leo Bennett brings in his boat after a morning on the water

RESULTS

Banded Killifish

- Species confirmation by DFO is yet to be completed. Based strictly on visual observations, there were 14 killifish caught at the St. Georges Estuary and 1 at the York Harbour Estuary
- In the past Banded Killifish have been confirmed to be present in Duck Pond, Paul's Pond, and Goose Arm although none were caught this year

Table 4. Banded Killifish Counts

Location	2022- 2023	2021- 2022	2020- 2021	2019- 2020	2018- 2019
St. Georges Estuary	14	1	-	-	-
York Harbour Estuary	1	0	-	-	-
Paul's Pond	0	-	-	12	8
Duck Pond	0	2	-	-	-
Goose Arm	0	183	0	-	-
Wild Cove Brook	0	-	-	-	-

DISSCUSSION

Commercial Eel - Adult

- Commercial eel sampling was not completed the previous year, therefor no comparisons were made
- All data collected was supplied to Fisheries and Oceans Canada to be considered when making management decisions regarding eel fisheries

Elver & Glass Eel

- Nearly 7 x more glass eel were caught this year compared to last
- Whereas only 2 x more elver were caught

Banded Killifish

- While catch success has differed over sample years, unsuccessful sampling will not conclude that species are no longer present in an area that they were previously identified.