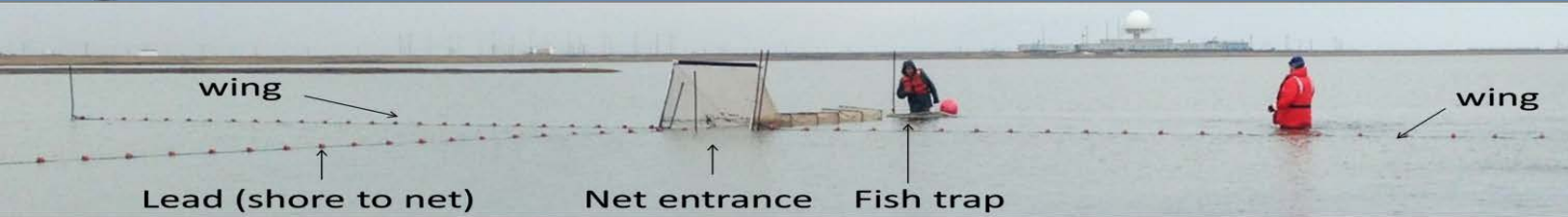




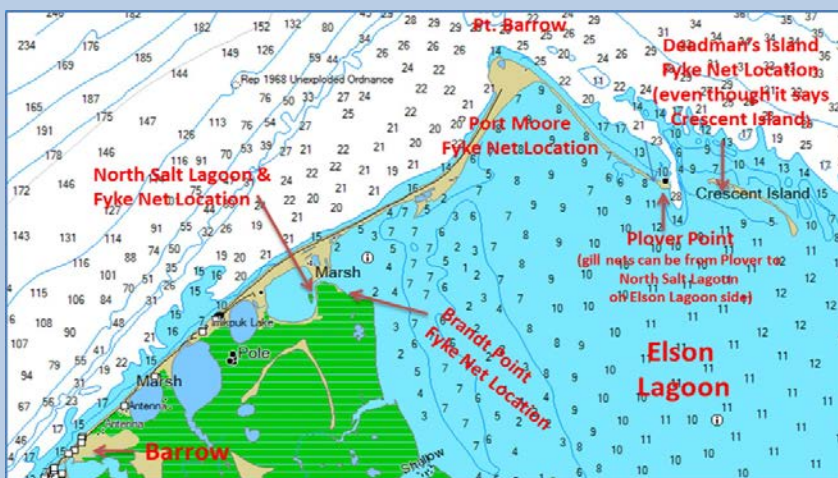
Fish Study in Elson-North Salt Lagoon, Utqiaġvik, Alaska

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Why: We are collecting long-term data, using fyke nets, to better understand fish populations and their use of lagoons. This type of monitoring is important for detecting and documenting any changes that occur.

How: A 100 foot “lead” net is secured to shore, leading to entrance of the fyke net. With the two 15 foot wing nets, fish are funneled into a smaller fish trap. The earliest deployment has been 23 June. The fyke net is checked every 24 hours. Most fish are measured, species noted, and released alive. A few fish are collected and sampled for age, sex, stomach contents and overall health. Salinity and temperature are recorded every 30 minutes.



Fyke Net location at North Salt Lagoon.

Subsistence gill nets can be located from Plover Point, along the inside of the spit, all the way to the North Salt Lagoon.



Fyke net with its funneling system of decreasing sized nets. Entrance on the left.

Results

- Fourteen (14) species of fish are typically caught, with sculpin and whitefish having the highest numbers (this includes Arctic and Bering cisco as 2 separate species).
- 90% of catch consists of least cisco (56%), fourhorn sculpin (30%), and Arctic flounder (4%).
- Arctic cod ranked 4th, but catch is biased by a large one-day catch of 290 Arctic cod on 9 Aug 2016.
- 51% of least cisco were immature.
- Temperature at the fyke net ranges from 30-57°F and salinity ranges from 0 – 2.8 % (normal sea water averages about 3.3%).

Discussion

- A mix of mature and immature ages indicates the importance of this seasonal nearshore lagoon as a rearing habitat.
- Catch rates show very high variability typical of other nearshore Arctic marine systems.
- Fyke nets tend not to catch small, larvae-size, or large subsistence fish species (>19.5”); however, large fish are regularly caught in gill nets nearby.
- Early season (late June) over half of the species are present, while late season (October) has lower diversity.
- Knowledge of water movement and fish life cycle are important for considering potential future impacts.

Table 1. 2011-2016 Species	Number Caught	Inches			Date	
		Min	Max	Avg.	Earliest	Latest
Arctic cod ^{1*}	392	1.9	12.0	4.4	6/27	10/15 ⁸
Arctic flounder ²	544	2.2	11.8	6.5	6/24	9/11
Arctic/Bering cisco ³	112	5.4	15.6	10.3	6/24	9/23
Broad whitefish ³	46	2.5	28.0	7.1	7/7	9/11
Capelin ⁴	7	4.3	5.5	4.7	7/18	8/19 ⁸
Dolly Varden/Char ³	7	9.7	21.5	15.3	7/8	9/11
Fourhorn sculpin ⁵	4002	0.6	12.5	6.8	6/24	10/15 ⁸
Least cisco ³	7332	2.3	15.4	8.8	6/24	9/23
Pacific herring ⁶	26	3.0	9.7	8.5	7/12	8/26
Pink salmon ³	2	16.8	17.6	17.2	7/24 ⁹	7/31
Rainbow smelt ⁴	248	1.6	11.4	9.0	6/30	9/22
Saffron cod ¹	241	2.2	18.9	5.4	6/24	9/23
Threespine stickleback ⁷	174	2.8	4.1	3.5	7/16	8/13
Total Caught	13 151	Total Effort (hours) 1743				

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