Penobscot Bay Watch

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Beach Seining: Searsport Harbor and Stockton Harbor

November 2009

The following report is submitted in fullfillment of the reporting requirements of DMR special license SL2009-91-00. :
"A report (electronic format) providing the numbers per species/locations/dates shall be provided to the Department at the end of each year and prior to future renewals."

SUMMARY. DMR special license SL2009-91-00 was granted on October 22, 2009 to Ron Huber representing Penobscot Bay Watch. It exempts he and project members from Chapter 34.10 regulations on mesh size, method of take, season, and possession of illegal sized fish for the purpose of surveying nearshore waters of Penobscot Bay for the abundance and distribution of age 0 juvenile cod and similar finfish species.

SL2009-91-00 authorized use by Huber of a hand deployed 60 foot beach seine to conduct seining operations in nearshore waters of Searsport Harbor (Sears Island and Searsport Shores Campground), Stockton Harbor (west side of causeway and shore of Cape Jellison Stockton Harbor), and Rockland Harbor (SW and NW ends). The project is proposed to last for two years (November 2009 - November 2011), to be renewed each calendar year as required.

All seining related to this project was to be carried out under the personal direction of Huber. Up to six Penobscot Bay Watch volunteers were permitted to assist. All cod and bycatch species of finfish and invertebrates were to be counted, photographed and videotaped for identification, and promptly released on location. An electronically formatted report providing the numbers per species/locations/dates would be provided to the Department at the end of each year and prior to future renewals.

ACTIVITIES. We seined November 1st, 7th, 8th, 9th, 14th, 22nd and 23rd in the nearshore waters of Searsport Harbor and Stockton Harbor, using a 60 foot 1/8" knotless mesh beach seine. A total of twenty five hauls were

carried out. Most sites were selected for being directly off the mouth of a permanent or seasonal stream in mainland Searsport Harbor and on Sears Island. Due to weather and other constraints, no seining was carried out in Rockland Harbor; for similar reasons seining was not carried out anywhere during the month of December.

In Searsport Harbor, locations were seined along the west side of Sears Island from alongside the southwest end of the causeway to the approximate southern terminus of the "marine transportation parcel", 3/4ths of the way down the west side of Sears Island. In Stockton Harbor, seining was carried out off the northeast tip of Sears Island and along the southeast end of the causeway. See maps, below.

Fish and invertebrates at all sites were photographed singly and/or in groups in clear holding tanks that were demarcated with inches and half inches for length reference. November 1st pictures do not include any individual fish photos; only group pictures were taken. A limited amount of video-documenting was carried out. All fish, including several mortalities, were returned to the water on location after documentation.

Water quality was tested at several sites using a marine aquarium water testing kit that used a litmus strip with 4 parameters: nitrate, nitrite, alkalinity, pH, to give approximation readings. Weather observations, including temperature readings of ambient air and water, were recorded at several sites.

RESULTS

1. Sunday Nov 1st.
Map Location 1 Off NW tip of Sears Island
Tide: Outgoing low tide.
Weather : Sunny. Air Temperature upper 40s. Water Temperature 53 F Wind less than 10 mph
Water depth 1 to 2 ft deep water over sandy muddy shallows.
Results (11/1/09 counts are approximations made after the fact from photos of a single seine haul *en masse* ; fish were released prior to individual photographing & counting)
131 pandalus montagui shrimp.
1 Crangon shrimp
4 green crabs.

16 mummichogs.
6 silversides
1 sand lance
2 5-spine Sticklebacks
2 blue mussels
3 eelgrass blades
2 oak leaves
6 pieces of rockweed

2. Saturday Nov 7th.
Sears Island Map Off a small stream drainage, NW tip of Sears Island. Sandy/muddy botton off the NW shoulder of Sears Island, just beyond mean low water. Water 2 to 3 feet deep
Tide lowtide, incoming.
Weather: Sunny
Water depth: 2 - 3 feet deep
Results: 38 Atlantic Silversides

3. Saturday Nov 7th.
Sears Island Map Mouth of the salt stream that divides the beach on the northwest shore from the mainland. The net was deployed completely across the stream mouth from incoming to slack water, hauled, then redeployed across stream mouth for to the first 20 minutes of outgoing tide. A state biologist, Denise Blanchette, took part and brought her knowledge and skills to the day's events

***Tide** Incoming High
Weather Sunny
Water Depth 5-6 feet
Water Temp 48 F
Results 7 mummichogs

*** Tide** Outgoing High
Weather Sunny
Water Depth 5-6 feet
Water temp 49 F
Results
5 mummichogs
16 sand lances,
2 five-spined sticklebacks

1 crab

4. Sunday November 8th
Sears Island. Continued netting west side of island from south of the tidal stream mouth to north side of jetty midway down west side of Sears Island. An eelgrassy, bouldery environment - many fronds of this plant in the tide wrack, both fresh green and darkened with decay, and in the seine. Occasional small pocket beaches, separated by cobble/boulder. Much net fouling
Tide
Weather
Water Depth
Results
Haul 1: 2 eelgrass fronds and two periwinkles. Water Temp 50F
Haul 2: 1 mummichog and twelve fronds of eelgrass. Water Temp 50F
Haul 3: Zero fish. 7 strands of eelgrass. Water temp 51F
Haul 4: 1 mummichog. One sand lance. Water Temp 54F
Haul 5: Zero fish. 2 Rockweed stems. Water temp: 54F

5. November 9th
Sears Island. Shore south of jetty to south end of "transportation parcel". A high energy rockweed-topped bouldery environment. Least number of fish were captured here. Due in part to frequent boulder hangups. Finger sponges were noted in the tide wrack and in the net.
Tide Incoming high tide.
Weather hazy but clear,
Water Depth 2-5 feet
Results One atlantic silverside, one finger sponge, 4 eelgrass fronds

6. November 14
Searsport Shores Campground
Tide Low
Weather Overcast
Water Depth 3ft **Water Temp** 46 F
Results
Haul 1. three silversides. One starfish
Haul 2. 11 silversides

7. November 22, 2009

Searsport Shores Campground
Tide High
Weather Overcast
Water Depth 2-3 feet
Results One 3" fish River herring or shad.

8. Monday November 23, 2009
Sears island. Tip of island both sides of causeway.
Tide Hauls 1,2,3 Low tide**. Hauls 4,5,6,7** Incoming to high tide
Weather

Results:
Northeast tip of Sears Island
Haul 1 Water Depth 3 feet One silverside. Five crangon shrimp
Haul 2 Water Depth 4 feet One 5-spine stickleback. Three Crangon Shrimp
Haul 3.Water Depth 2 feet one hundred and eighteen Atlantic silversides

North West tip of Sears Island
Haul 1. Four crangon Shrimp, three other shrimp. five silversides, one threespine stickleback
Haul 2. Eightysix silversides, one small unidentified 'transparent' fish.
Haul 3. Four silversides
Haul 4. One three crangon shrimp; three other shrimp; one small white fish (juvenile smelt?)

DISCUSSION
A higher variety and abundance of fishes and invertebrates were found in hauls taken in shallow sheltered sand/mud bottomed waters, than in shallow exposed rocky and bouldery surf areas. However, frequent net fouling incidents in the latter areas, and the resulting unfouling activities, may have contributed to the significantly lower number of captures there.
Species found in beach seine during project: *

Atlantic silversides
Mummichogs
Sand lances
Five spined sticklebacks
Crangon shrimp
Montagui shrimp

Green crabs
Unidentified small white fish
Unidentified small transparent fish
Periwinkles
Starfish,
Mussel
Eelgrass
Kelp
Oak leaves
Detritus

** Due to the unplanned and premature release of fishes and invertebrates captured on November 1st, other species may have been present in the catch but not documented. Any errors in species identification are the fault of the license-holder.We invite interested parties to examine the photographs of that day's catch and make their own determination of species varieties and numbers.*

SUMMATION

This was our first month of seining. Most participants, including Huber, had never handled a beach seine before this project. There has hence been a learning curve: on operation of the beach seine net in different habitat types, on species identification, on most effective use of information-gathering devices, and on categories of data practical to record in a catch and release beach seine fishery of juvenile fishes and their small co-habitants - "practical" without increasing the risk of mortalities among the netted fish and invertebrates. All in all however, we believe the results to date, imperfect as it may be, offer a snapshot of many of the species present in that area during the month of November, 2009. Any errors in species identification are the fault of the license-holder.

ON CONTINUING THE STUDY

Our 2010 seining will continue to take place primarily at the mouths of intermittent and year-round streams within the areas we are licensed to operate in. We propose to add a location at the northern tip of Long Cove - well away from port facilities - to the study. We are refining our species identification, counting, photographing and video taping methodologies.

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Searsport Shores
Campground
Beach
Seining
11/14/09
11/22/09