

The “Curley Report” Revisited: Fisheries Habitat Investigations of Wellfleet Harbor

A proposal to the Wellfleet Natural Resources Advisory Board



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The “Curley Report”

- Comprehensive inventory of marine resources conducted by MADMF in 1968-69, has not been duplicated since

A STUDY OF THE MARINE RESOURCES
OF
WELLFLEET HARBOR

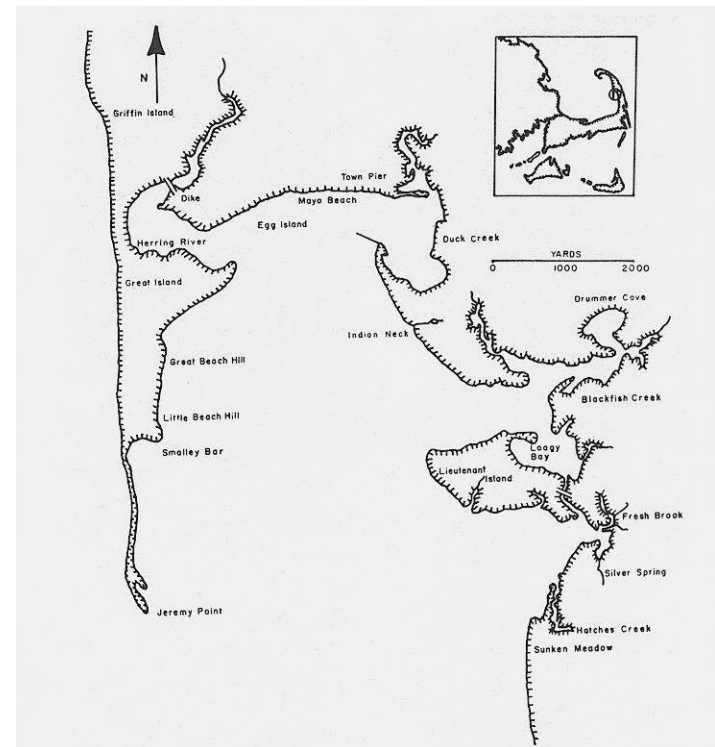
*John R. Curley, Robert P. Lawton, David
K. Whittaker and John M. Hickey*

April, 1972



Monograph Series
Number 12

DIVISION OF MARINE FISHERIES
Department of Natural Resources
The Commonwealth of Massachusetts



The “Curley Report”

- Reviewed available data on habitat, fisheries, human impacts

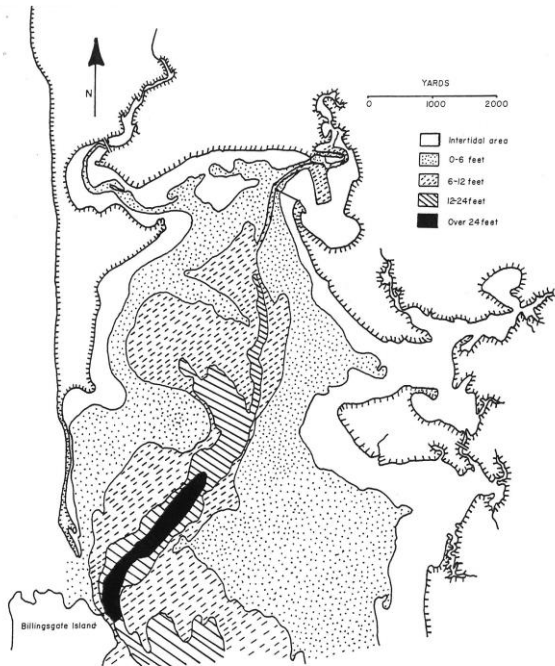


FIGURE 3.
Depth Contours of Wellfleet Harbor (MLW).



PLATE 3.
Oyster flats along Mayo Beach, Wellfleet.

The “Curley Report”

- Systematic seine and trawl surveys of Wellfleet Harbor led to a comprehensive species inventory and baseline data

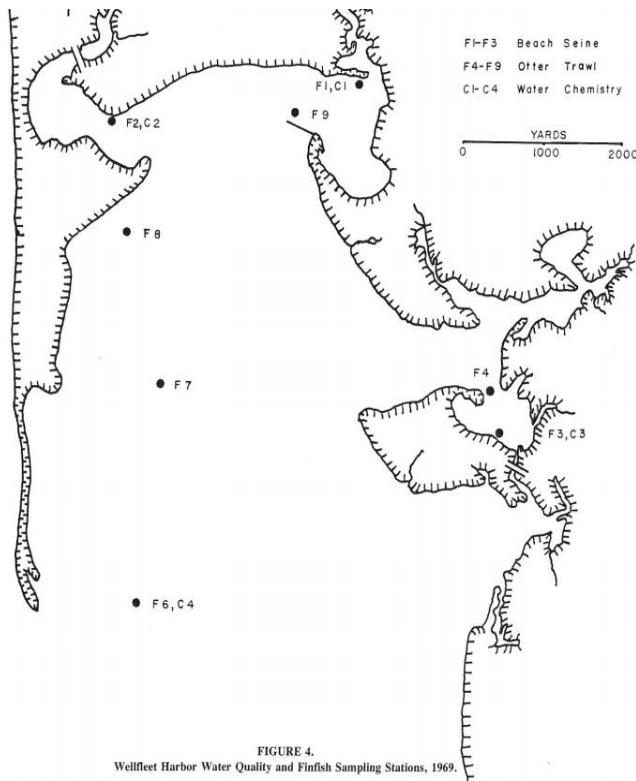


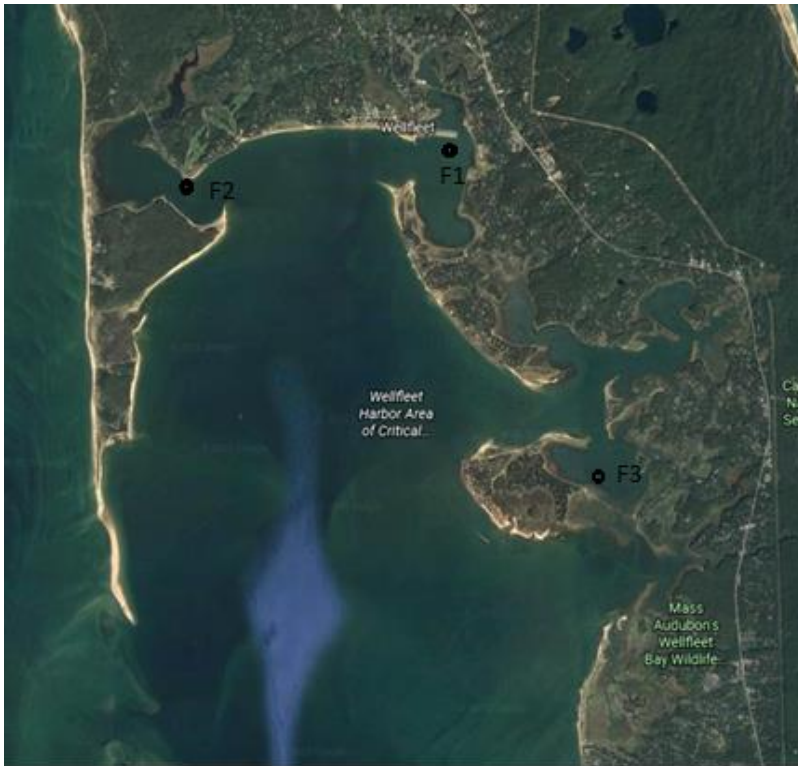
FIGURE 4.
Wellfleet Harbor Water Quality and Finfish Sampling Stations, 1969.

Table 18. Scientific and Common Names of Fish Taken or Observed from Wellfleet Harbor, 1968-1969 (A.F.S., 1970)

Family	Scientific Name	Common Name
Carcharhinidae:	<i>Mustelus canis</i> (Mitchill)	smooth dogfish
Rajidae:	<i>Raja erinacea</i> Mitchill	little skate
	<i>Raja ocellata</i> Mitchill	winter skate
Anguillidae:	<i>Anguilla rostrata</i> (Lesueur)	American eel
Clupeidae:	<i>Alosa aestivalis</i> (Mitchill)	blueback herring
	<i>Alosa pseudoharengus</i> (Wilson)	alewife
	<i>Brevoortia tyrannus</i> (Latrobe)	Atlantic menhaden
	<i>Clupea h. harengus</i> Linnaeus	Atlantic herring
Lophidae:	<i>Lophius americanus</i> Valenciennes	goosefish
Gadidae:	<i>Gadus morhua</i> Linnaeus	Atlantic cod
	<i>Microgadus tomcod</i> (Walbaum)	Atlantic tomcod
Cyprinodontidae:	<i>Fundulus heteroclitus</i> (Linnaeus)	mummichog
	<i>Fundulus majalis</i> (Walbaum)	striped killifish
Atherinidae:	<i>Menidia beryllina</i> (Cope)	tidewater silverside
	<i>Menidia menidia</i> (Linnaeus)	Atlantic silverside
Gasterosteidae:	<i>Apeltes quadracus</i> (Mitchill)	fourspine stickleback
	<i>Gasterosteus aculeatus</i> Linnaeus	threespine stickleback
Syngnathidae:	<i>Syngnathus fuscus</i> Storer	northern pipefish
Percichthyidae:	<i>Morone americana</i> (Gmelin)	white perch
	<i>Morone saxatilis</i> (Walbaum)	striped bass
Pomatomidae:	<i>Pomatomus saltatrix</i> (Linnaeus)	bluefish
Carangidae:	<i>Decapterus macarellus</i> (Cuvier)	mackerel scad
Sparidae:	<i>Stenotomus chrysops</i> (Linnaeus)	scup
Sciaenidae:	<i>Menticirrhus saxatilis</i> (Bloch & Schneider)	northern kingfish
Labridae:	<i>Tautoglabrus adspersus</i> (Walbaum)	cunner
	<i>Tautoga onitis</i> (Linnaeus)	tautog
Scombridae:	<i>Scomber scombrus</i> Linnaeus	Atlantic mackerel
Triglidae:	<i>Prionotus carolinus</i> (Linnaeus)	northern searobin
	<i>Prionotus evolans</i> (Linnaeus)	striped searobin
	<i>Myoxocephalus aeneus</i> (Mitchill)	grubby
Cottidae:	<i>Cyclopterus lumpus</i> Linnaeus	lumpfish
Cyclopteridae:	<i>Scophthalmus aquosus</i> (Mitchill)	windowpane
Bothidae:	<i>Pseudopleuronectes americanus</i> (Walbaum)	winter flounder
Pleuronectidae:	<i>Sphoeroides maculatus</i> (Bloch & Schneider)	northern puffer
Tetraodontidae:	<i>Mola mola</i> (Linnaeus)	ocean sunfish

Pilot Study

- Systematic seine survey of Wellfleet Harbor with funds from a Friends of Herring River Donald Palladino Fellowship



Pilot Study

- Fish species documented as of October 2020: Atlantic menhaden, Atlantic silverside, blueback herring, bluefish, mummichog, striped killifish



Pilot Study

- Fish species documented as of October 2020: Atlantic menhaden, Atlantic silverside, blueback herring, bluefish, mummichog, striped killifish



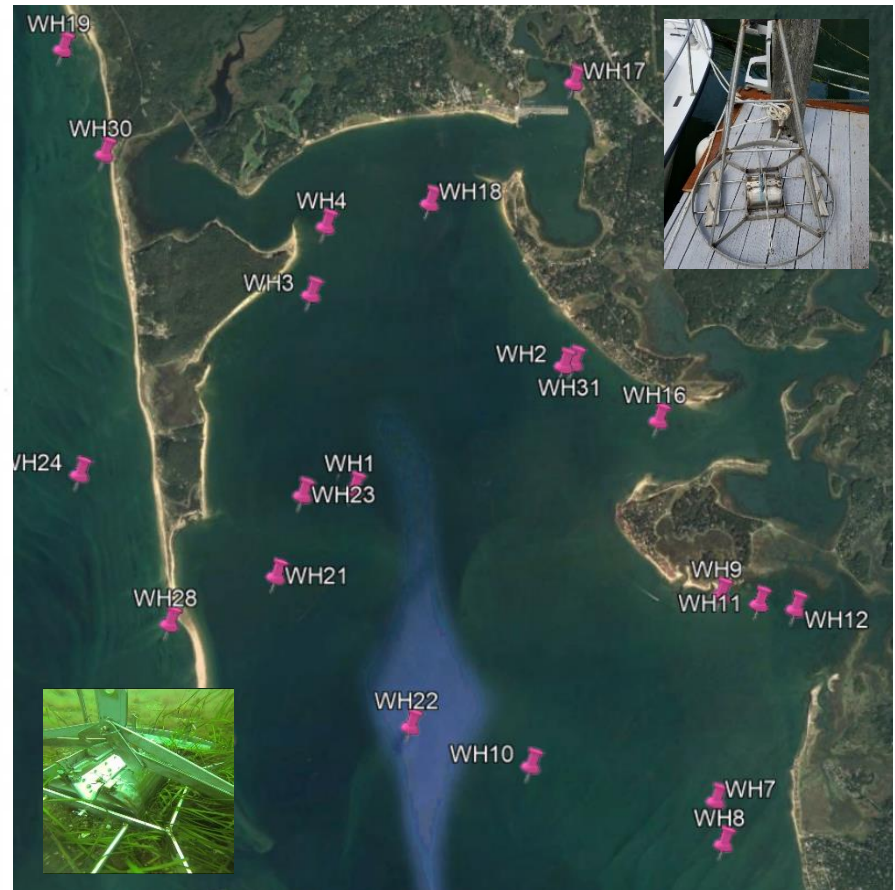
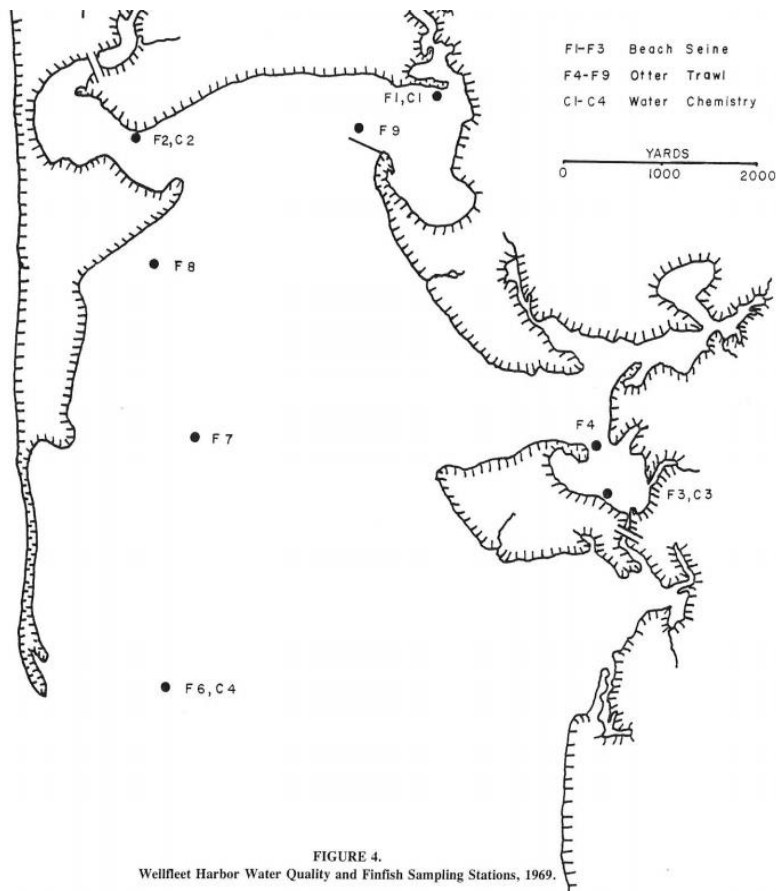
Pilot Study

- Over 1,500 Atlantic menhaden in a single seine haul at the town pier site during the August survey! Small fish, average length of subsampled catch 4.2 cm, i.e. 'peanut bunker'



Proposed Study

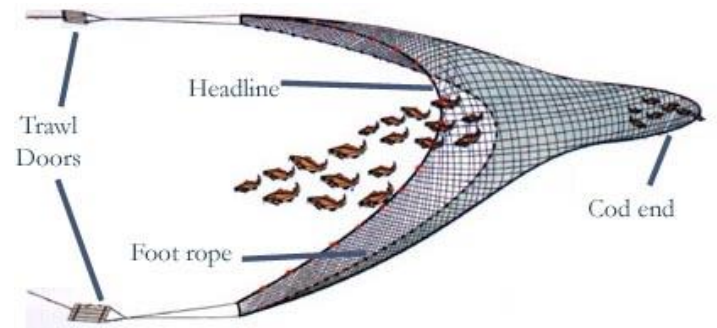
- Revisit Curley *et al.* systematic trawl survey sites, as well as a subset of CCS benthic habitat mapping stations



Proposed Study

- Monthly subtidal surveys April 2021 – March 2022

R/V *Kingfisher*, 20' (~7 m) center-console shallow-draft vessel, 90 hp outboard engine



30' sweep otter trawl, used by MADMF & CCS

Proposed Study

- Monthly subtidal surveys April 2021 – March 2022



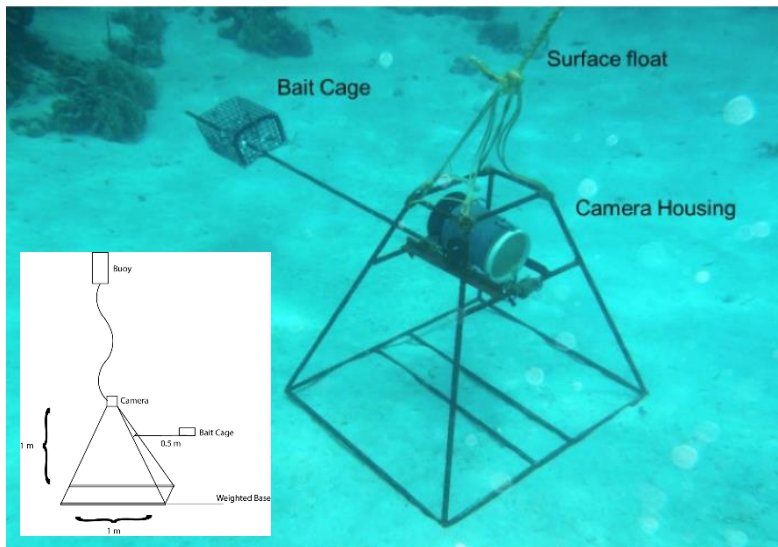
Lightweight commercial bay scallop dredge



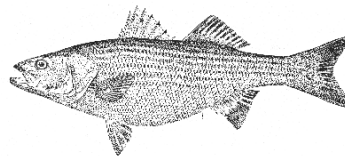
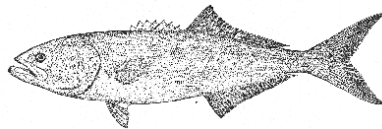
Proposed Study

- Monthly subtidal surveys April 2021 – March 2022

Additional sampling methods will include benthic grab samples, baited traps, and baited remote underwater video (BRUV)



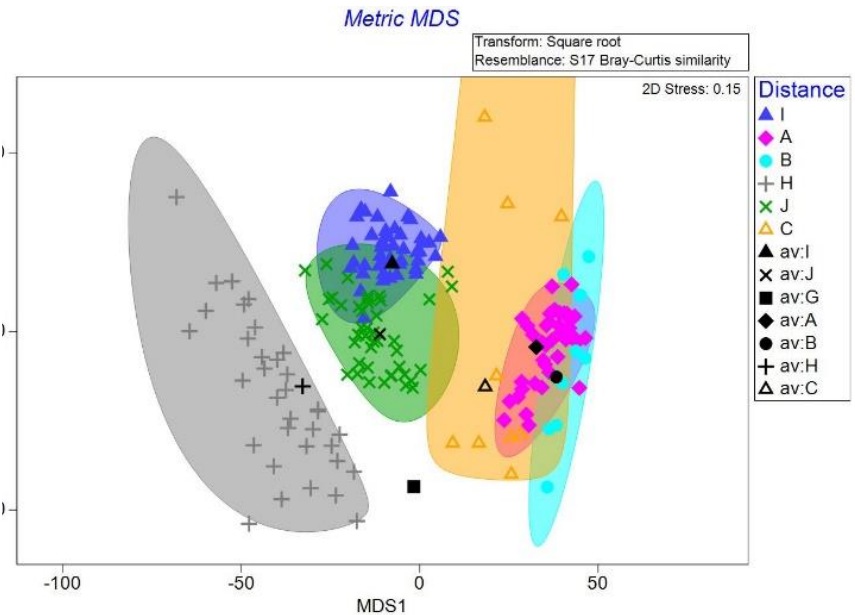
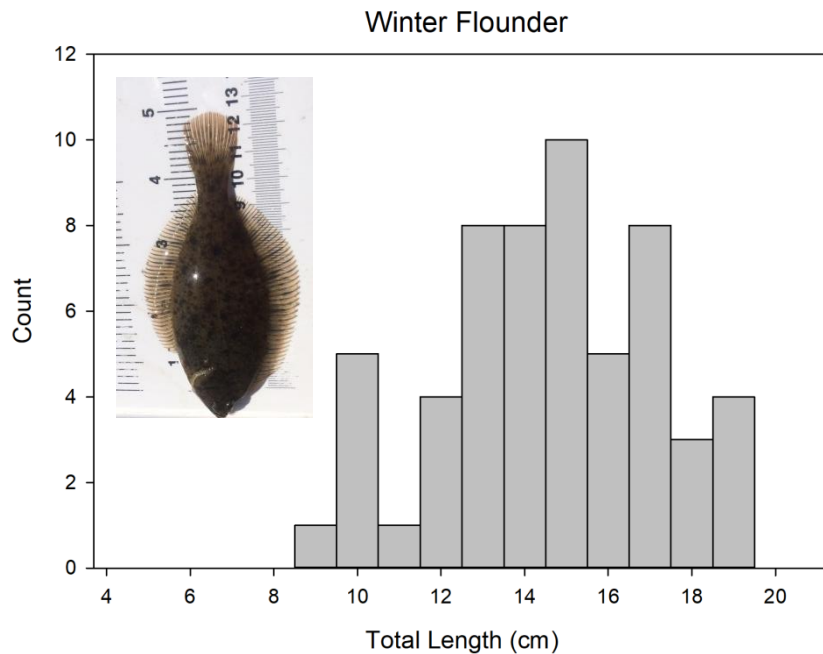
<https://www.gilsharkconservation.com/baited-remote-underwater-video-bruv/>



Proposed Study

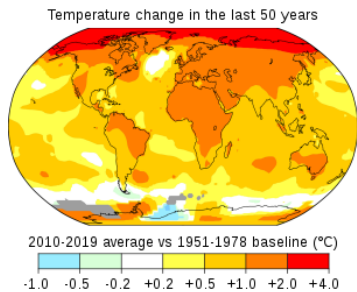
- Analytical approach, incorporating multiple data sets

Data from the pilot seine study and this project will be analyzed for comparison with previous studies and to develop an understanding of relationships between fish/shellfish species and their habitats.



The Bigger Picture

- Establish a baseline, develop a framework for long-term monitoring, and make sure we're asking the right questions!



https://www.mass.gov/files/styles/embedded_half_width/public/herring_river_looking_toward_east.jpg?itok=uM8QF7KS

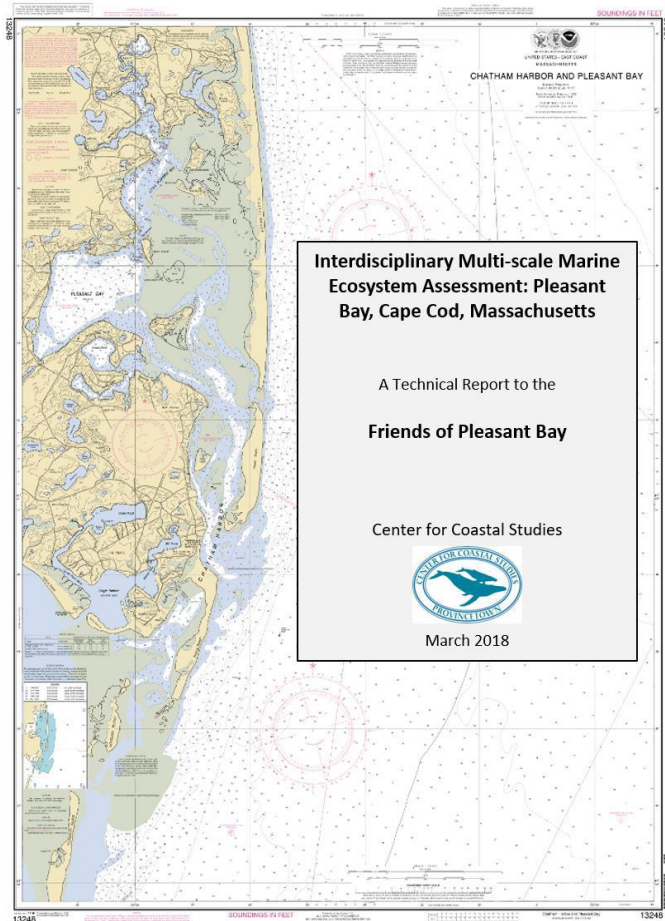


<https://provincetownindependent.org/wp-content/uploads/2020/10/De-La-Brue-CC%80re-Dredge-Report-Bloom.jpg>



The Bigger Picture

- Consider these results in a broader, ecosystem-level context



<https://coastalstudies.org/interdisciplinary/>

