



RUTGERS

New Jersey Agricultural
Experiment Station

What Types of Seafood Come from New Jersey?

April 12, 2025

Douglas Zemeckis, Ph.D.

County Agent II (Associate Professor)

Marine Extension Agent for Ocean, Atlantic, and Monmouth Counties

Rutgers Cooperative Extension

zemeckis@njaes.rutgers.edu | 732-349-1152

NJ Agricultural Experiment Station

The NJ Agricultural Experiment Station (NJAES) was established in 1880 to carry out the land grant mission focused on serving the needs of NJ's residents, communities, and businesses through research and education.

Commercial Agriculture



Environment and Natural Resources



Fisheries and Aquaculture



Food, Nutrition, and Health



Home, Lawn, and Garden



Youth and Community Development



<https://njaes.rutgers.edu/>

Rutgers Cooperative Extension

- Rutgers Cooperative Extension (RCE) was established in 1914 and brought Rutgers faculty members into all of NJ's 21 counties.
- Mission: "...help the diverse population of NJ adapt to a rapidly changing society and improve their lives and communities through an educational process that uses science based knowledge".



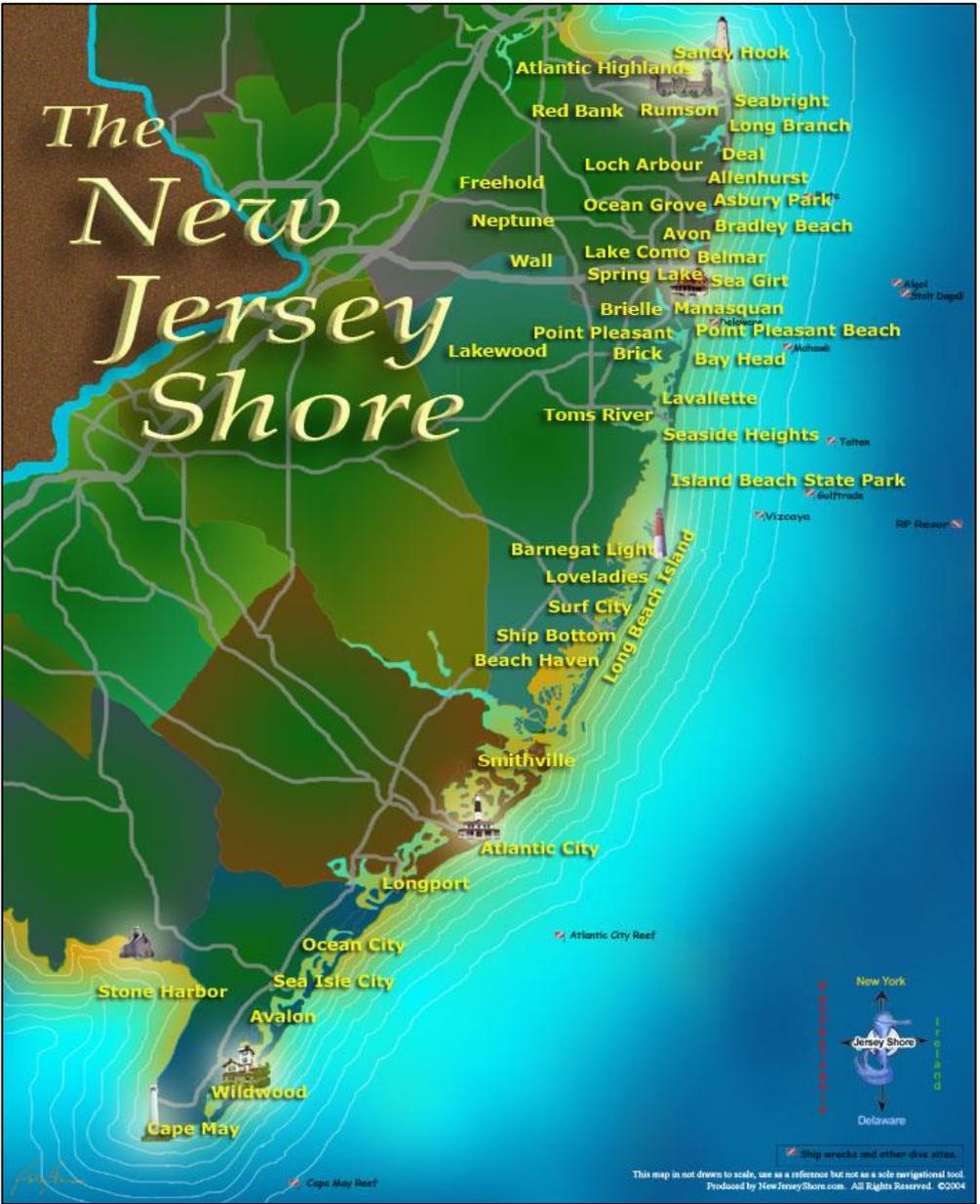
njaes.rutgers.edu/extension100years

<https://njaes.rutgers.edu/extension/>

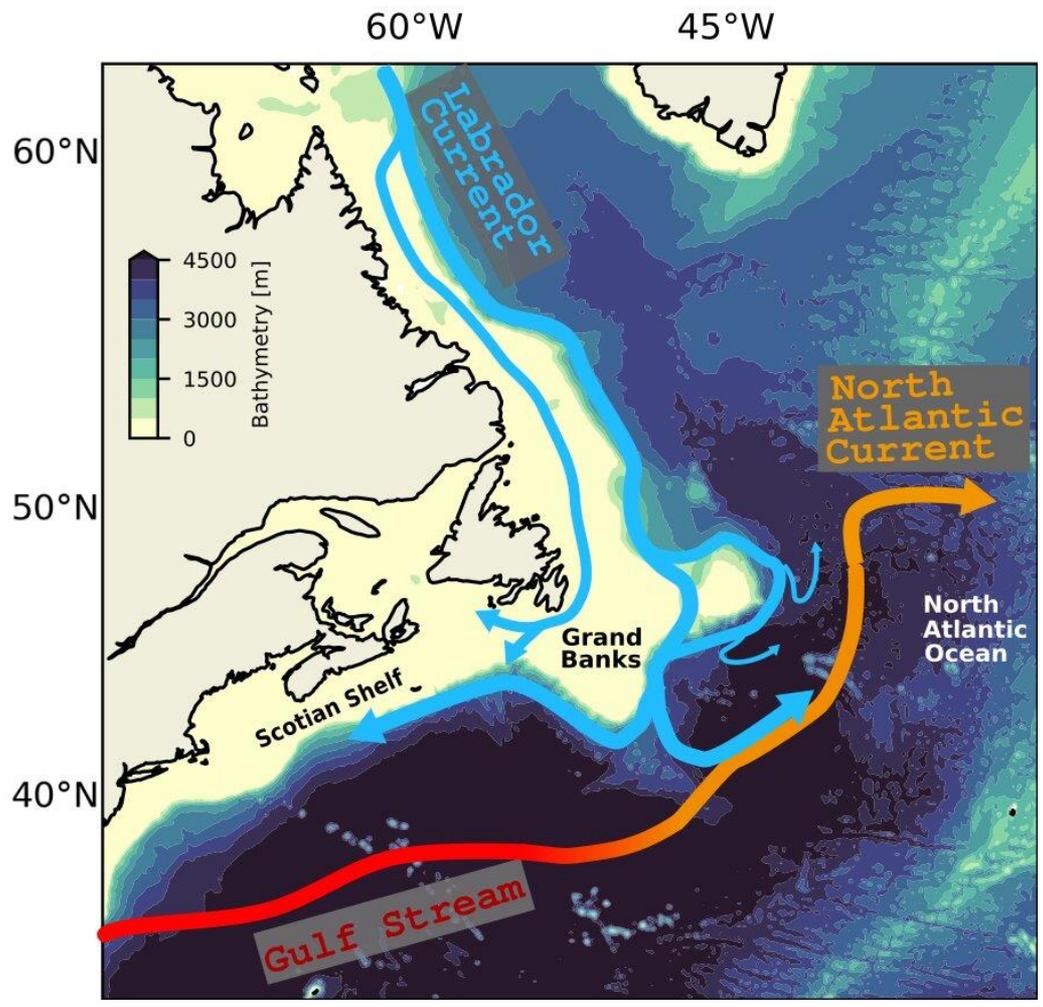
Agenda

- Coastal Oceanography
- Commercial Fisheries
- Recreational Fisheries
- Shellfish Aquaculture
- Jersey Seafood



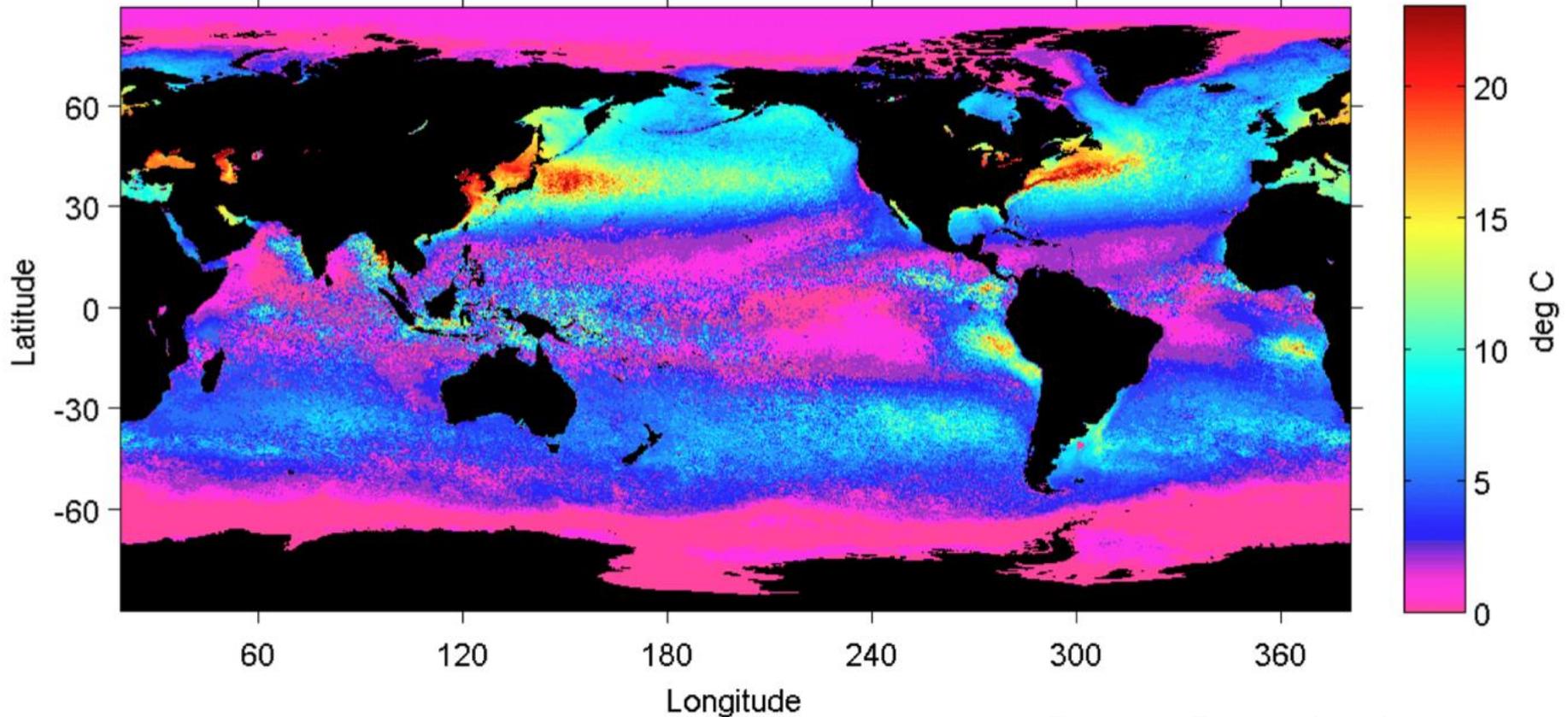


Coastal Oceanography



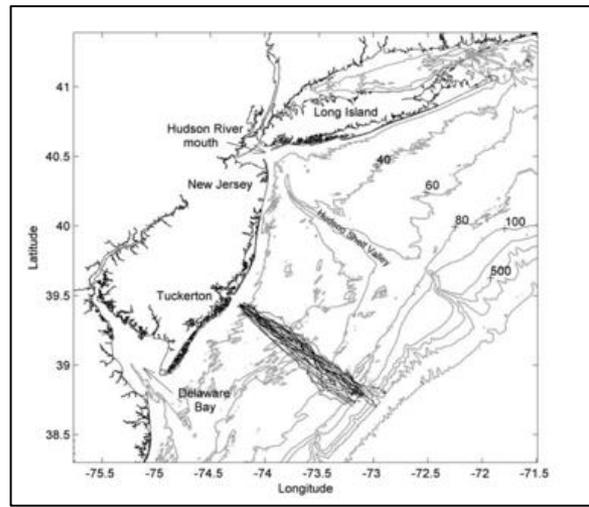
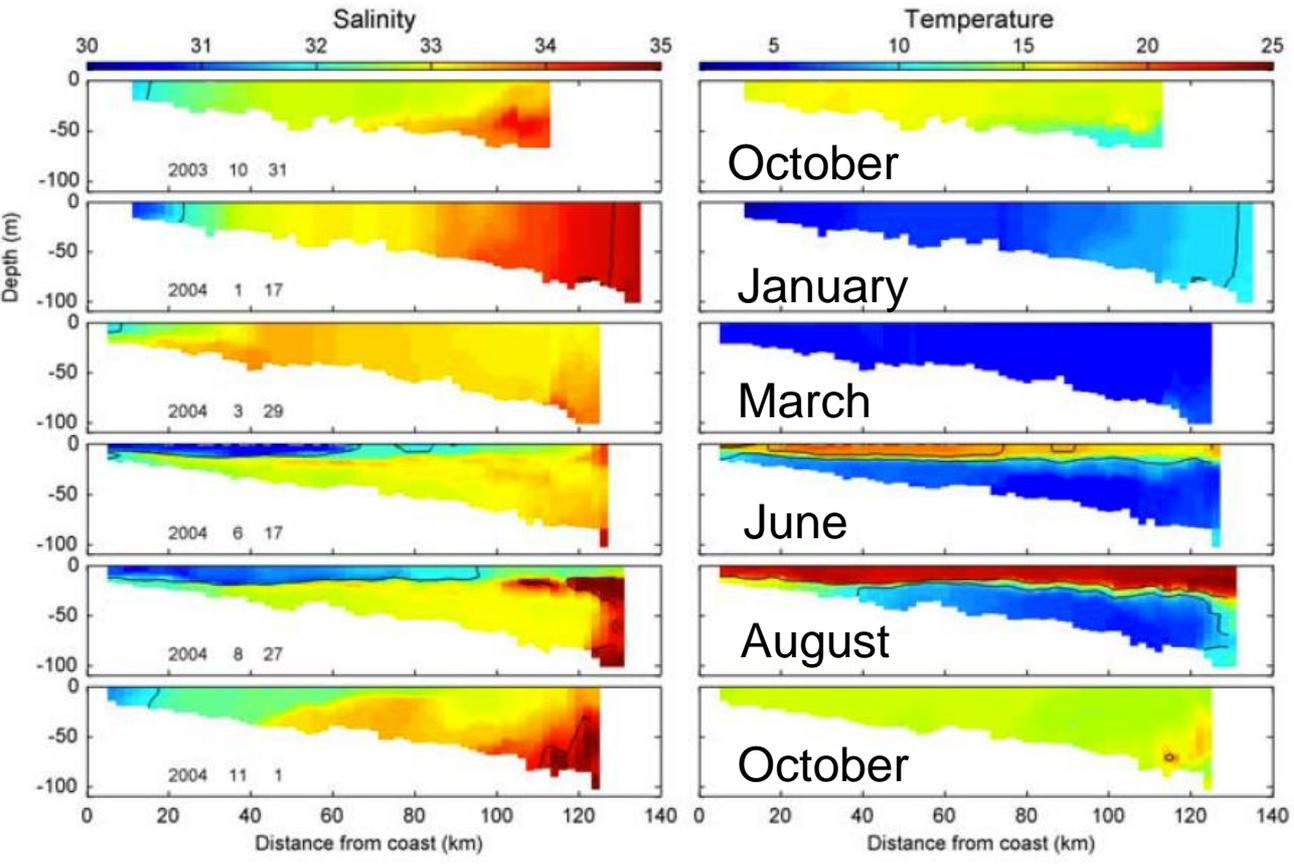
Coastal Oceanography

11 Year Mean Composite SST Summer/Winter Difference 1995-2005



Ramya Ramadurai., 2008

Coastal Oceanography

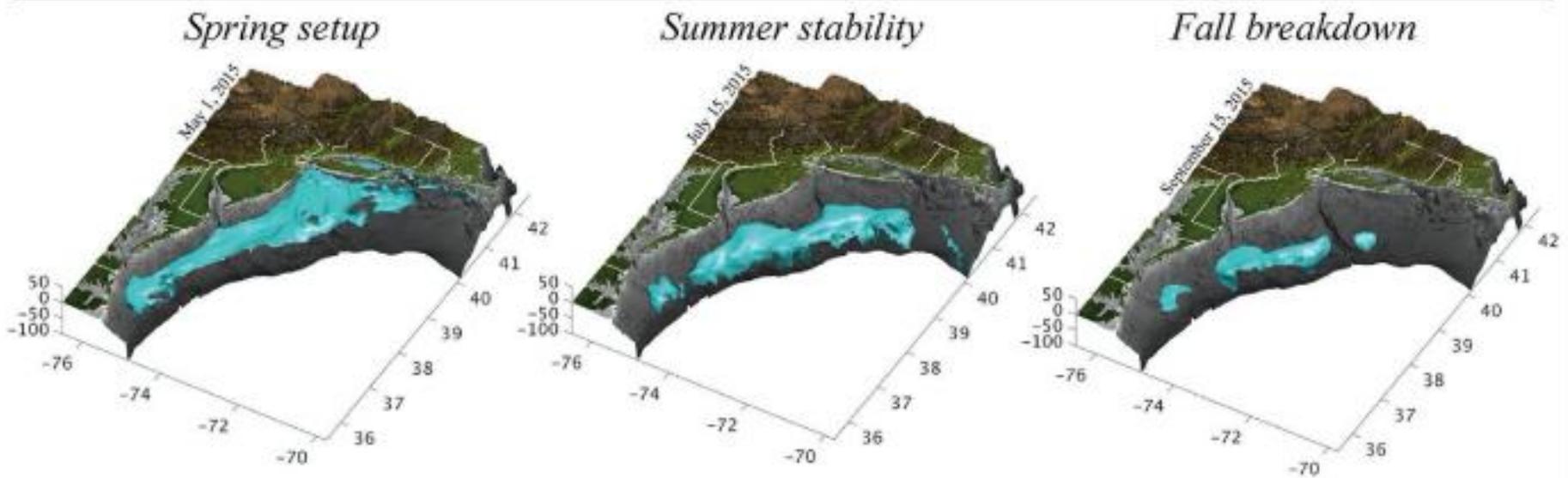


Castelao et al. 2008

Coastal Oceanography

Figure 2

Cold Pool Processes



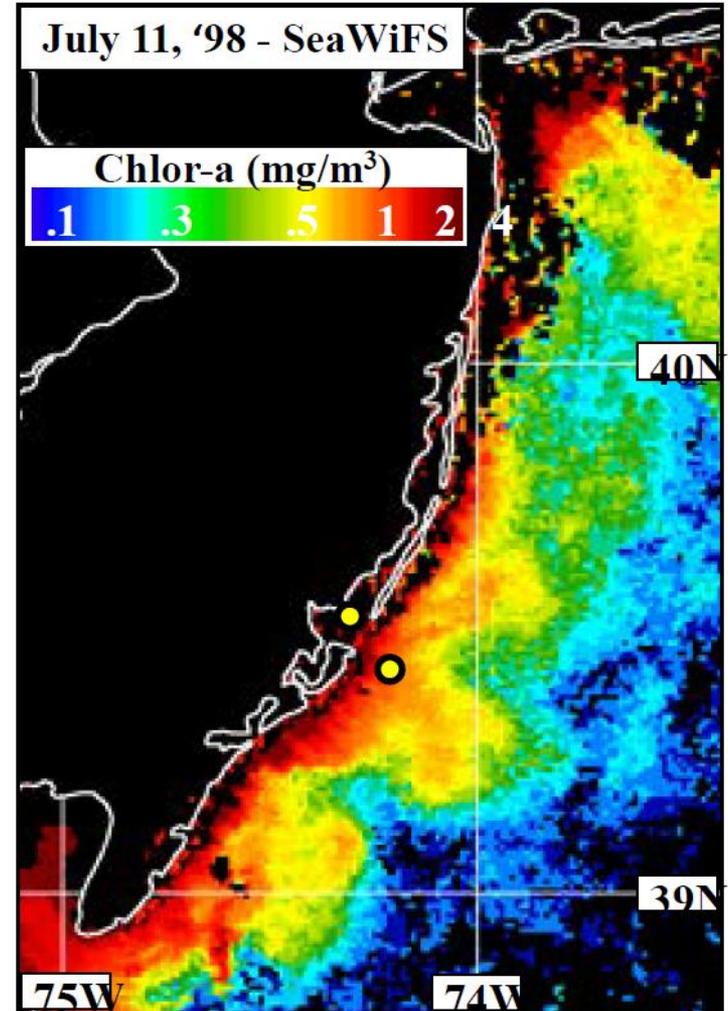
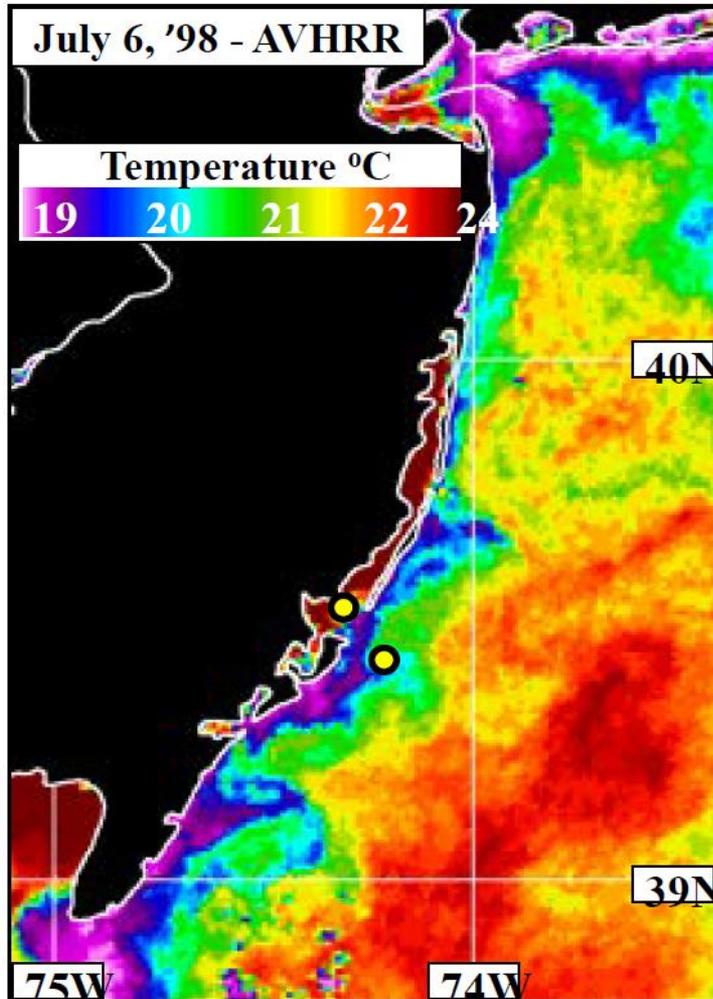
• Maturation • Migration • Spawning

• Migration • Refuge • Feeding

• Spawning • Refuge • Migration

Ecological Processes

Coastal Oceanography



New Jersey's Commercial Fisheries

- **Commercial Fisheries and Seafood:**
 >\$4.5 billion USD value added
 (5th highest state), 72,000 jobs
 in 2022 (NOAA, 2024)



Atlantic Sea Scallop
(Placopecten magellanicus)



Atlantic Surf Clam
(Spisula solidissima)



Ocean Quahog
(Arctica islandica)



Longfin Squid
(Doryteuthis pealeii)



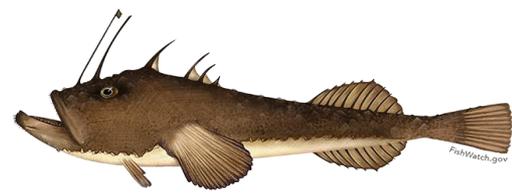
Illex Squid
(Illex illecebrosus)



Blue Crab
(Callinectes sapidus)



Summer Flounder
(Paralichthys dentatus)



Monkfish
(Lophius americanus)



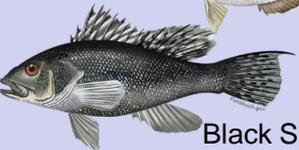
American Lobster
(Homarus americanus)

New Jersey's Commercial Fisheries

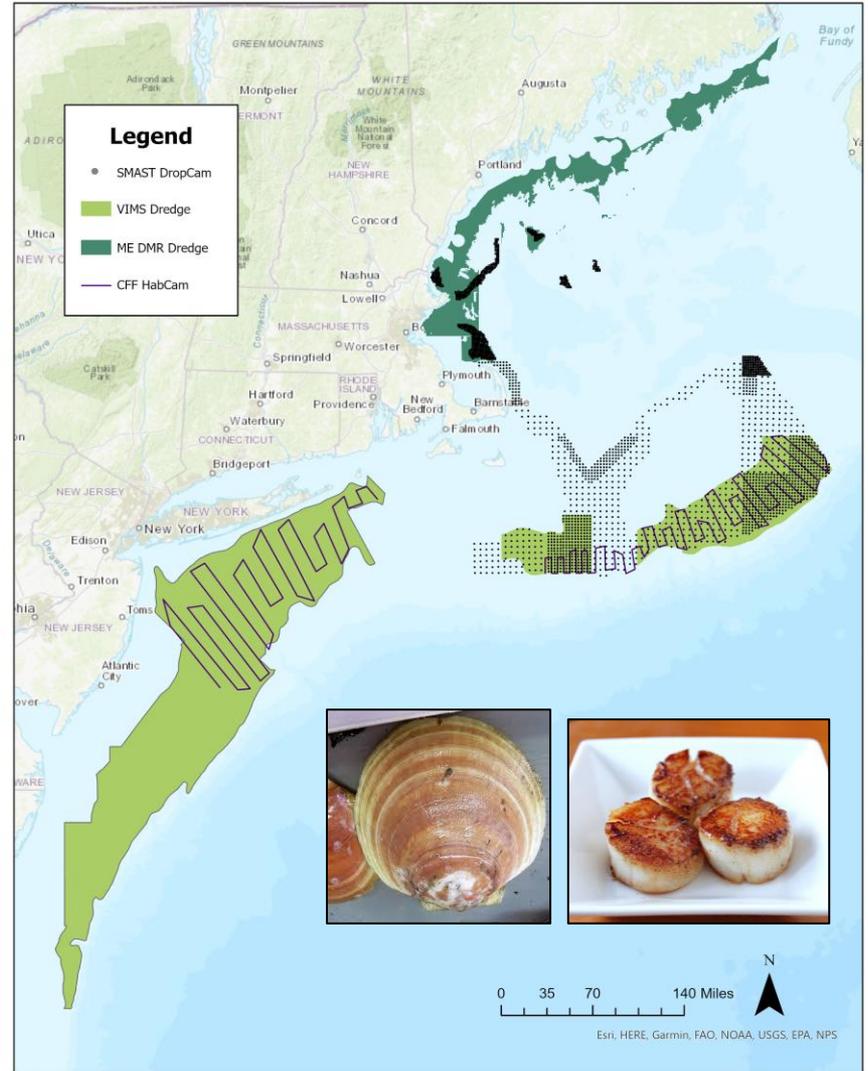
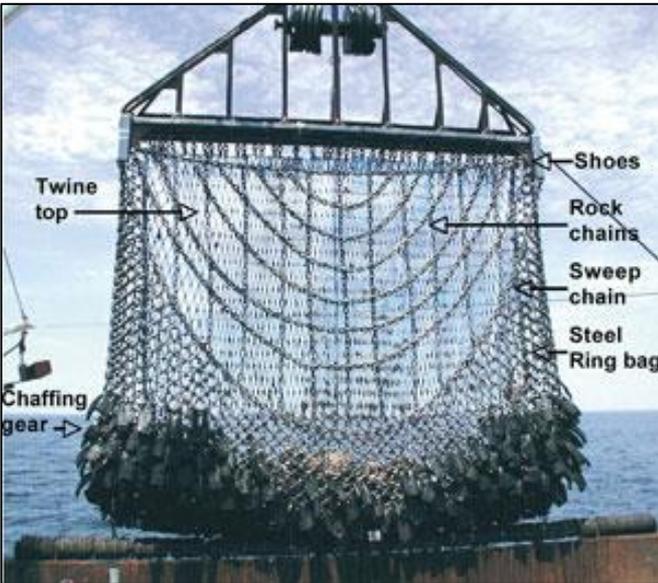
New Jersey's Commercial Fishing Ports



Top 5 Five Species by Value by Port (2015-2019)

Belford	Barnegat Light	Cape May/Wildwood	Port Norris
 Summer Flounder	 Sea Scallops	 Sea scallops	 Oysters
 Menhaden	 Golden Tilefish	 Illex Squid	 Blue Crab
 Loligo Squid	 Monkfish	 Loligo Squid	 Menhaden
 Scup	 Bigeye Tuna	 Menhaden	 American Eel
 Black Sea Bass	 Summer Flounder	 Surf Clam	 Whelks

New Jersey's Commercial Fisheries



New Jersey's Commercial Fisheries

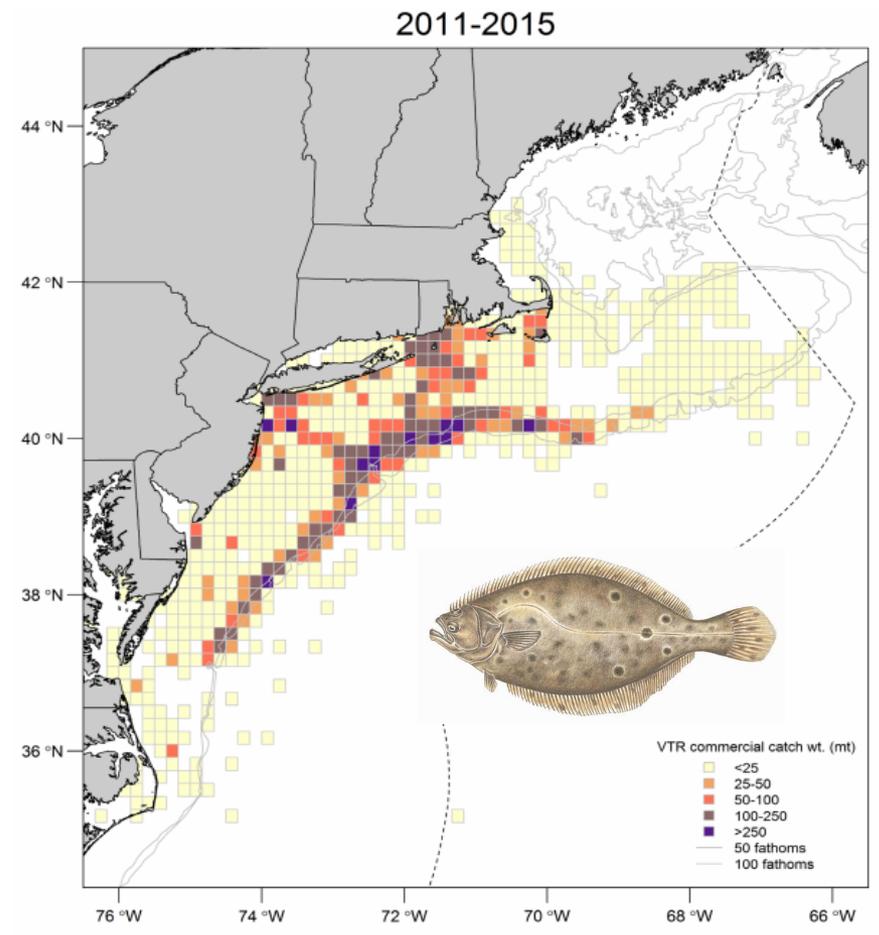
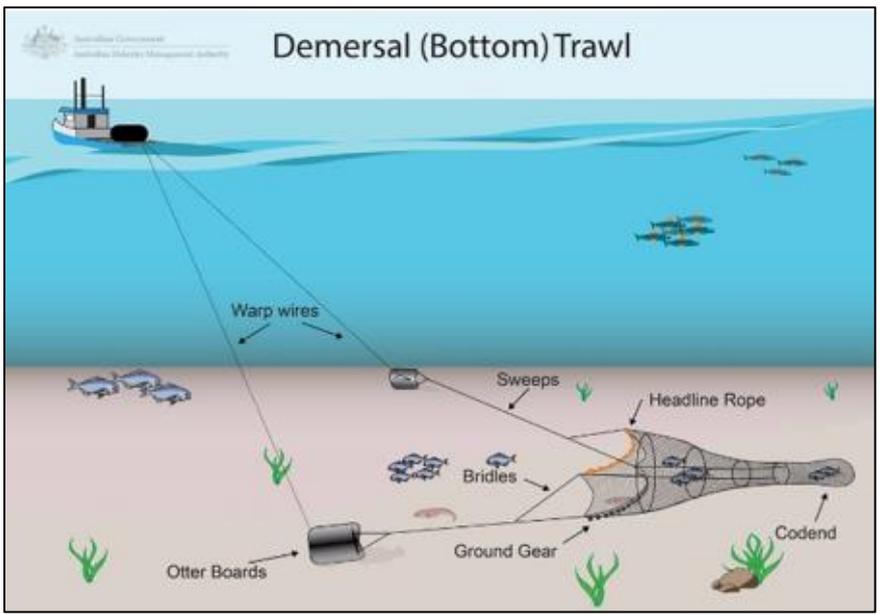
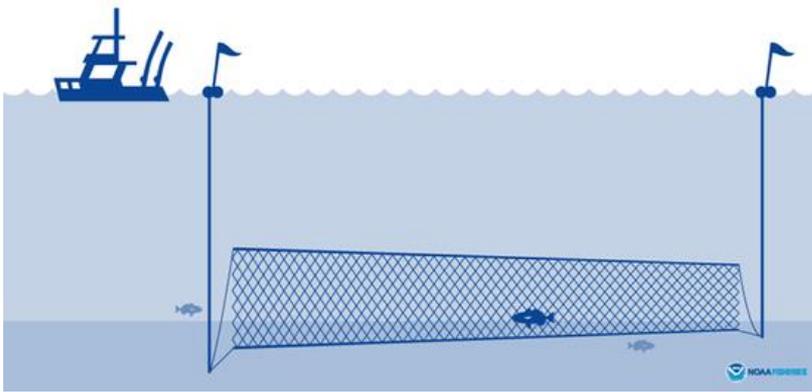
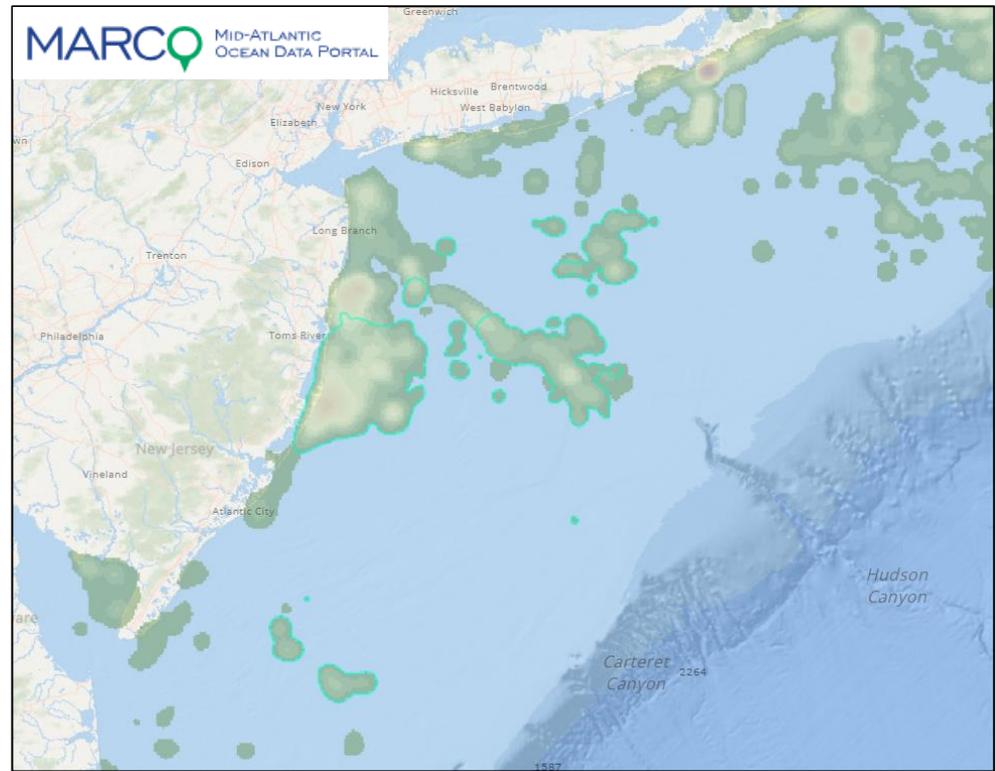
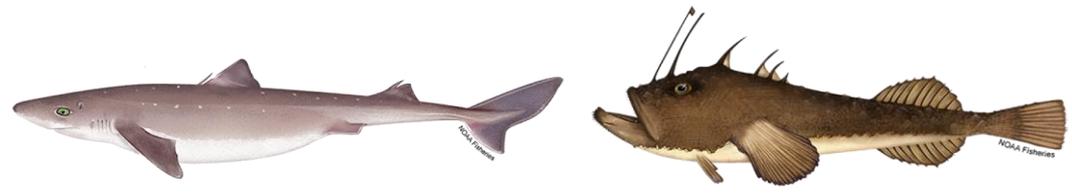


Figure A10. Spatial distribution of commercial Vessel Trip Report (VTR) reported catch weight (landings and discards) binned to ten minute squares from 2011-2015.

New Jersey's Commercial Fisheries

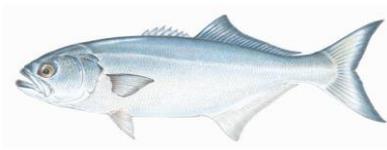


New Jersey's Recreational Fisheries

- **Recreational Fisheries:** \$1.2 billion value added, 14,000 jobs in 2018, and ~1 million anglers annually (NOAA, 2021)



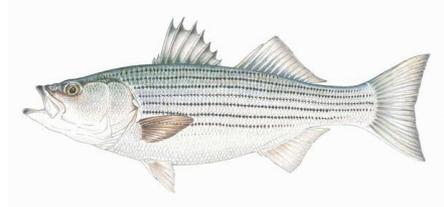
Summer Flounder
(*Paralichthys dentatus*)



Bluefish
(*Pomatomus saltatrix*)



Black Sea Bass
(*Centropristis striata*)



Striped Bass
(*Morone saxatilis*)



Tautog
(*Tautoga onitis*)



New Jersey's Recreational Fisheries

Recreational Anglers by Residential Area (thousands of anglers)

Download Table ▼

Angler Type	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
Coastal	662	581	607	515	507	447	411	NA	NA	NA
Non-Coastal	27	20	17	24	32	16	17	NA	NA	NA
Out-of-State	431	330	566	448	378	253	322	NA	NA	NA
Total Anglers	1,121	931	1,189	987	916	716	750	NA	NA	NA



NOAA. 2024. Fisheries economics of the United States, 2022.

<https://www.fisheries.noaa.gov/data-tools/fisheries-economics-united-states-data-and-visualizations>

New Jersey's Recreational Fisheries

Recreational Fishing Effort by Mode (thousands of angler trips)

Download Table ▼

Trip Mode	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021
For-Hire	388	532	494	450	234	215	289	292	124	263
Private Boat	7,107	6,476	6,260	5,013	4,741	4,848	4,432	4,357	5,702	5,010
Shore	10,659	8,759	10,259	9,021	8,877	7,225	7,772	8,732	10,192	7,938
Total Trips	18,153	15,767	17,012	14,485	13,852	12,288	12,493	13,380	16,017	13,211

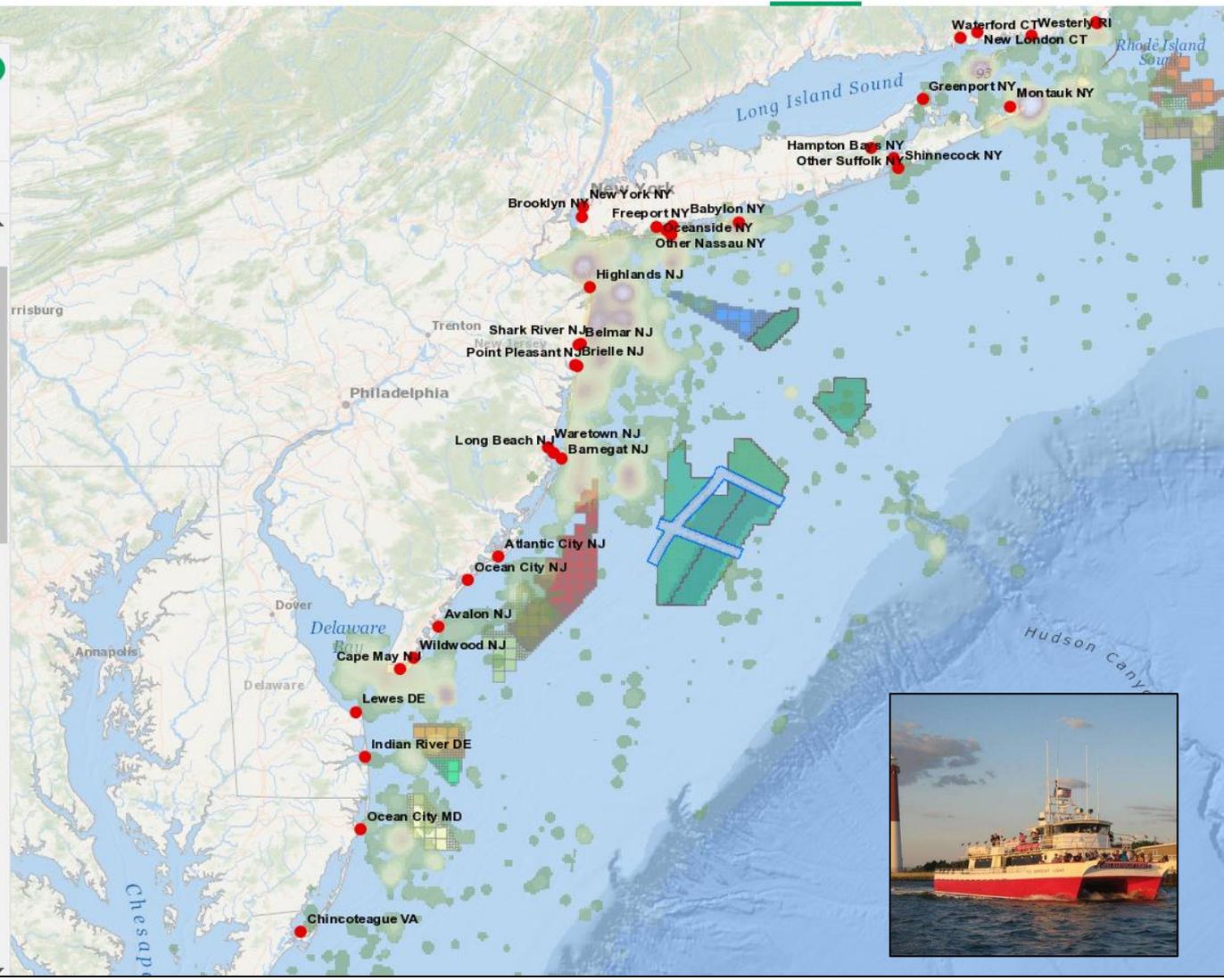


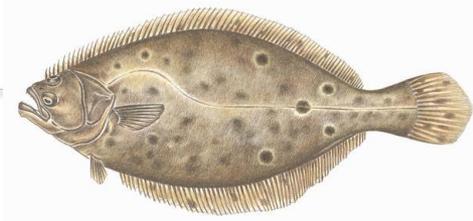
NOAA. 2024. Fisheries economics of the United States, 2022.

<https://www.fisheries.noaa.gov/data-tools/fisheries-economics-united-states-data-and-visualizations>

Search data

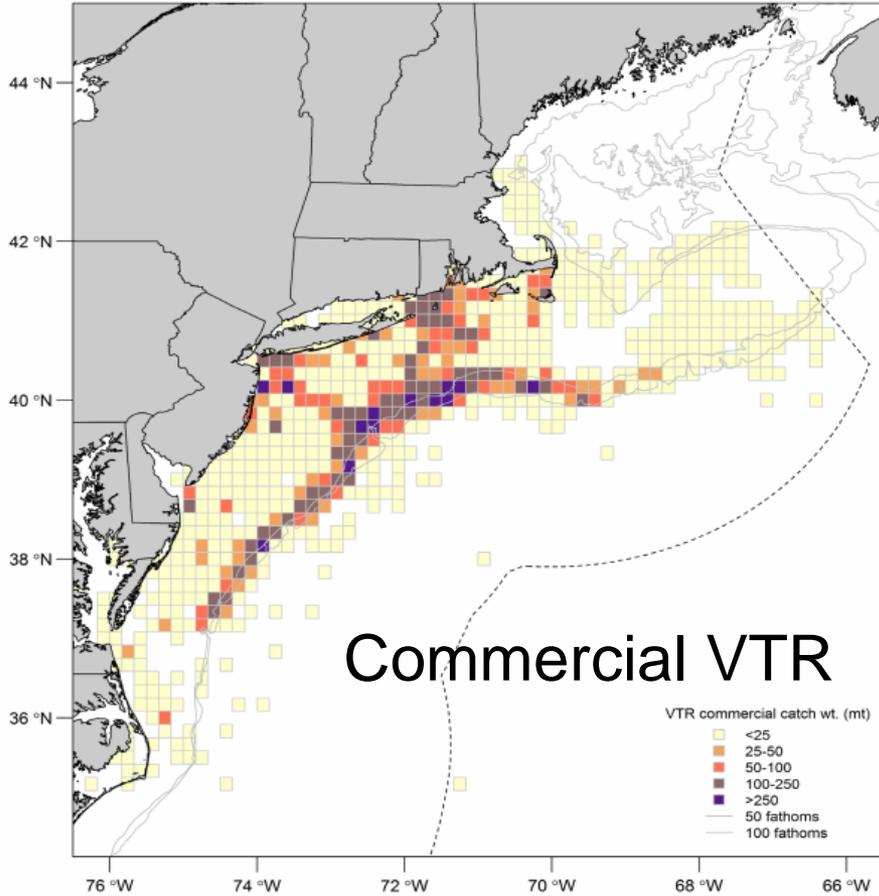
- Active • 6 MyPlanner **Data** Legend
- ARTIFICIAL REEFS
- ARTIFICIAL REEFS: NEW YORK PROPOSED EXPANSIONS AND NEW SITES
- ▶ COMMERCIAL FISHING - VMS
- ▶ COMMERCIAL FISHING - VTR
- FATHOM LINES
- ▼ RECREATIONAL FISHING
 - PARTY/CHARTER 1996-2000
 - PARTY/CHARTER 2001-2005
 - PARTY/CHARTER 2006-2010
 - PARTY/CHARTER 2011-2015
- ▶ MANAGEMENT AREAS: ATLANTIC SEA SCALLOP
- ▶ MANAGEMENT AREAS: ATLANTIC SPINY DOGFISH
- ▶ MANAGEMENT AREAS: DRAFT ALTERNATIVE MANAGEMENT AREAS
- ▶ MANAGEMENT AREAS: EXPIRED MANAGEMENT AREAS
- ▶ MANAGEMENT AREAS: HABITAT CONSERVATION
- ▶ MANAGEMENT AREAS: MONKFISH AND SKATE
- ▶ MANAGEMENT AREAS: NORTHEAST





Summer Flounder

2011-2015



2011-2015

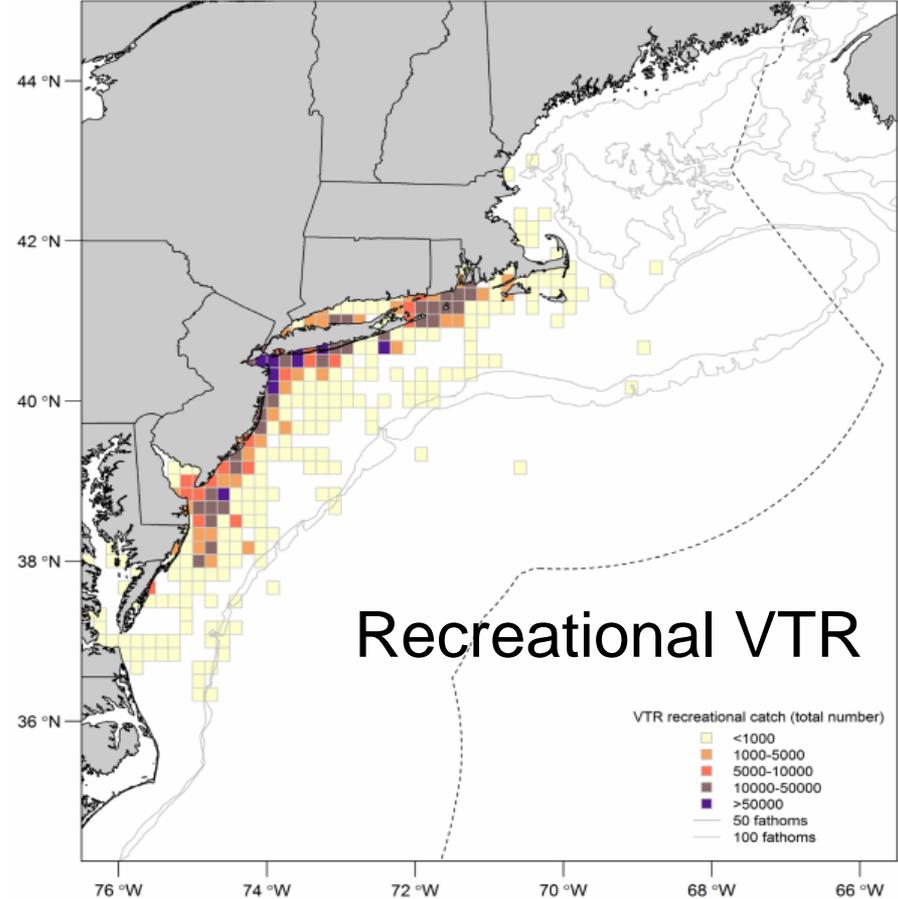
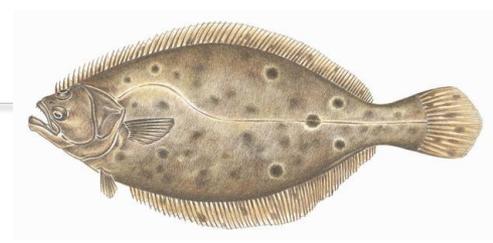


Figure A10. Spatial distribution of commercial Vessel Trip Report (VTR) reported catch weight (landings and discards) binned to ten minute squares from 2011-2015.

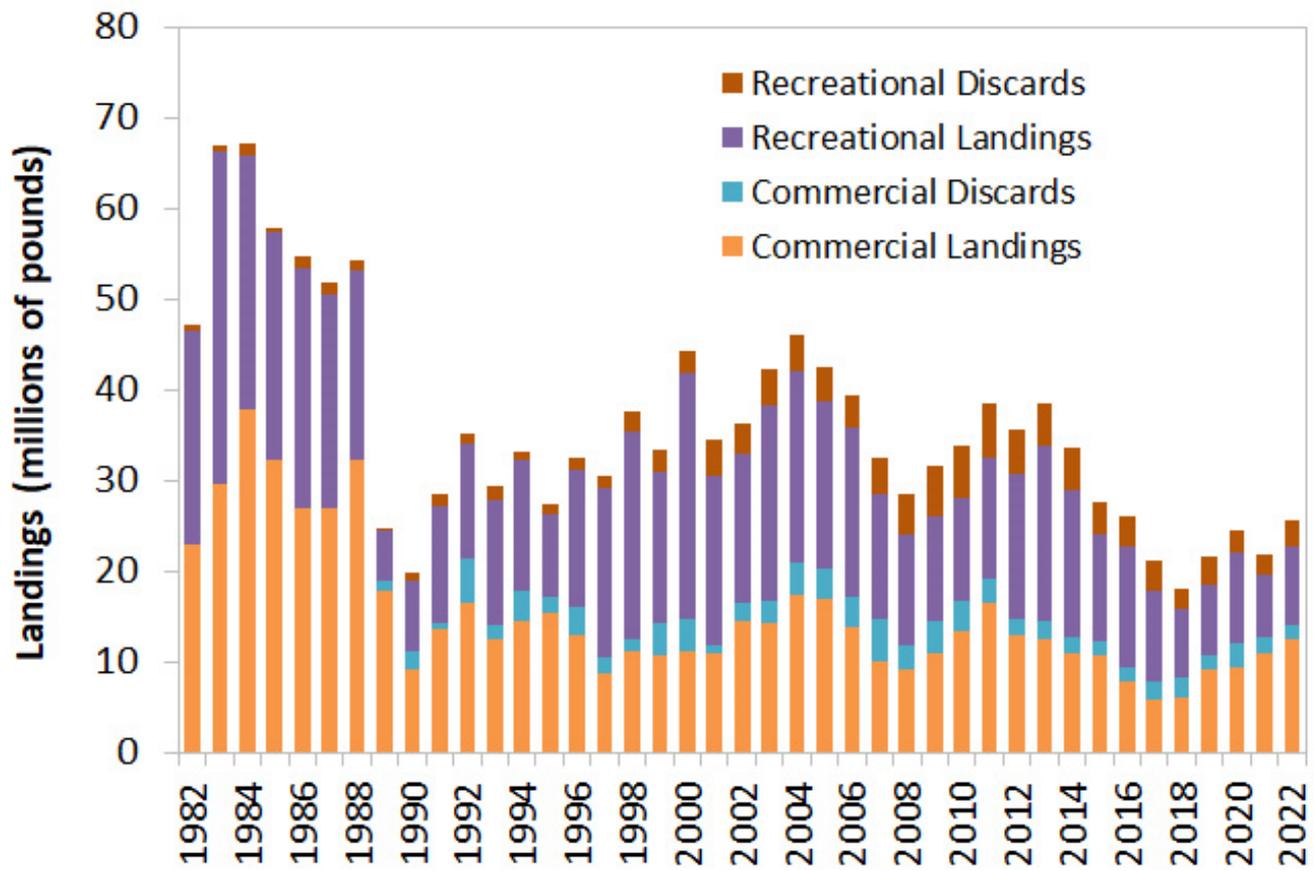
Figure A21. Spatial distribution of recreational (party and charter boat) Vessel Trip Report (VTR) reported catch (total number) binned to ten minute squares from 2011-2015.



Summer Flounder

Summer Flounder Commercial and Recreational Landings & Dead Discards

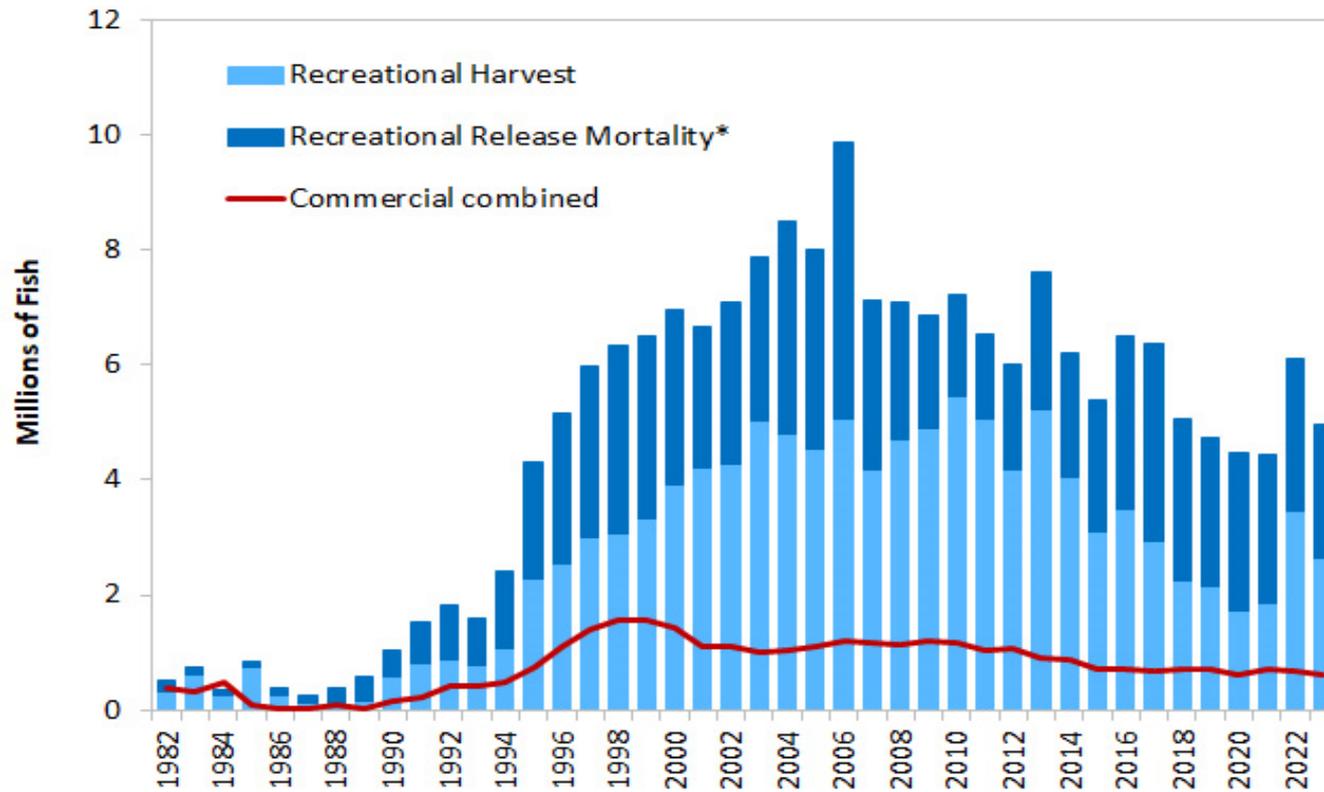
Source: Northeast Fisheries Science Center, 2023



Striped Bass

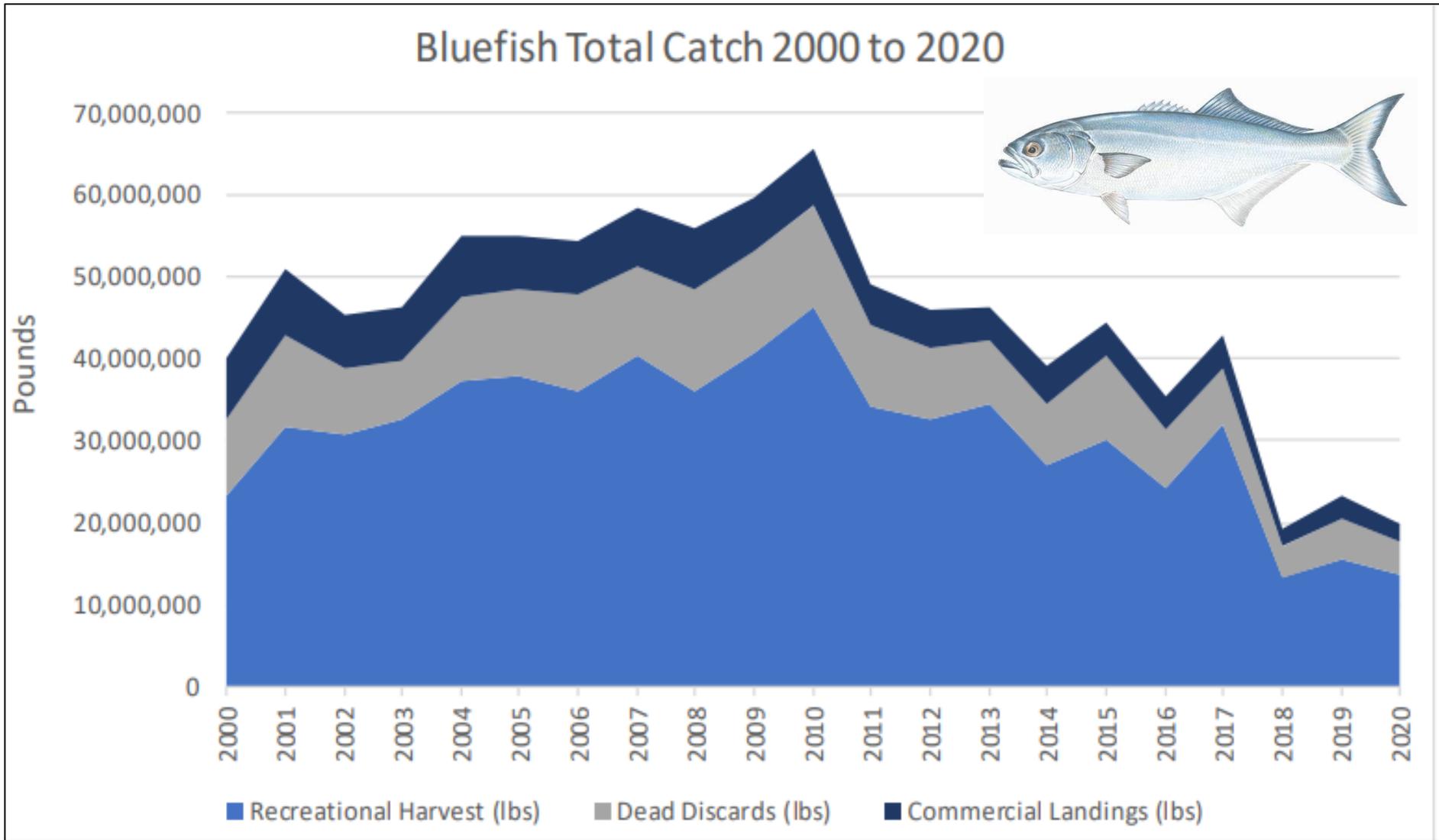
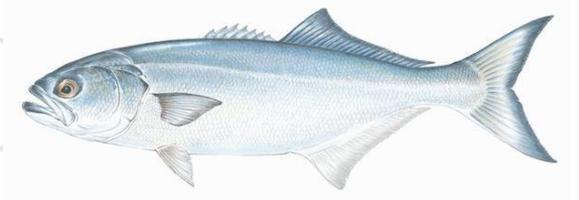


**Atlantic Striped Bass Commercial Landings and Discards
& Recreational Landings and Release Mortality**

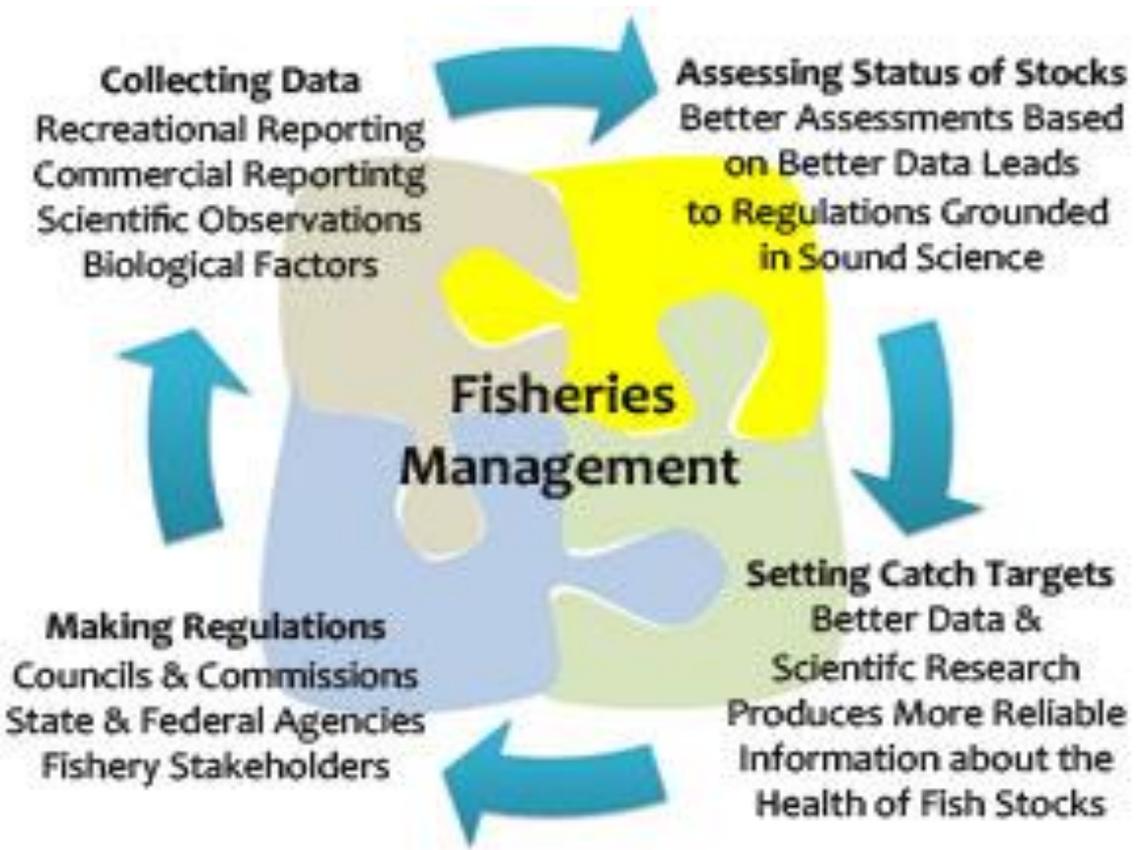


* 9% of fish released alive are assumed to die because of being caught.

Bluefish Total Catch 2000 to 2020



Fisheries Management 101



NOAA
FISHERIES



MID-ATLANTIC FISHERY MANAGEMENT COUNCIL



New England Fishery Management Council



NEW JERSEY DIVISION OF **Fish and Wildlife**



NOAA FISHERIES

Overfishing and Overfished Stocks as of December 31, 2024

Legend

- On Overfished List: 42 stocks
- On Overfishing List: 23 stocks

1. Non-FSSI stock
2. Stock is fished by US and International fleets under a formal international agreement
3. The geographic boundary of this stock extends from Mexico south and west to the Palmyra Atoll.

North Pacific

- Blue king crab - Pribilof Islands¹
- Blue king crab - St. Matthew Island¹

Pacific

- Chinook salmon - Queets Spring/Summer^{1, 2}
- Chinook salmon - Klamath River Fall
- Quillback rockfish - California¹

Pacific and Western Pacific

- Swordfish - Eastern Pacific^{1, 2, 3}

Western Pacific

- Striped marlin - Western/Central Pacific^{1, 2}
- Seamount Groundfish Complex - Hancock Seamount¹
- ● Oceanic Whitetip shark - Western/Central Pacific^{1, 2}
- ● Silky shark - Central/Western Pacific¹

Atlantic Highly Migratory Species

- ● Blacknose shark - Atlantic
- ● Blue marlin - Atlantic^{1, 2}
- ● Dusky shark - Atlantic¹
- ● White marlin - Atlantic^{1, 2}
- ● Scalloped hammerhead - Atlantic
- ● Porbeagle shark - Atlantic^{1, 2}
- ● Sandbar shark - Atlantic
- ● Bigeye tuna - Atlantic^{1, 2}
- ● Shortfin mako - North Atlantic^{1, 2}

Gulf of Mexico

- Cobia
- ● Greater amberjack
- ● Gag - Gulf of Mexico
- Lane Snapper

Caribbean

- ● Goliath grouper¹
- ● Nassau grouper¹
- ● Queen conch¹
- Caribbean spiny lobster - Puerto Rico

New England

- ● Atlantic cod - Georges Bank
- ● Atlantic cod - Gulf of Maine
- ■ Windowpane - Gulf of Maine/Georges Bank¹
- ■ Witch flounder
- ■ Yellowtail flounder - Georges Bank¹
- ■ Yellowtail flounder - S. New England/Mid-Atl.
- ■ Thorny skate - Gulf of Maine¹
- ■ Atlantic halibut¹
- ■ Atlantic salmon¹
- ■ Atlantic wolffish¹
- ■ Ocean pout¹
- ● Red hake - Southern Georges Bank/Mid-Atl.
- ■ Atlantic herring
- ■ Atlantic mackerel - Gulf of Maine/Mid-Atl.

Mid-Atlantic

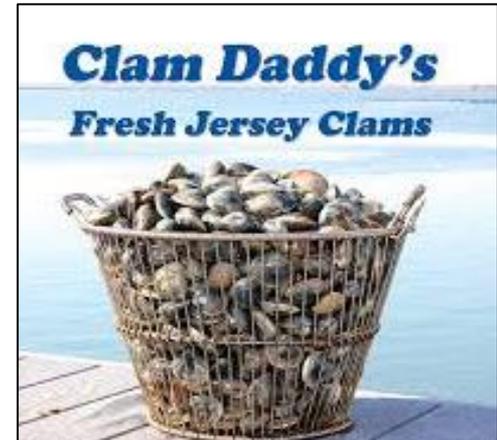
- Summer flounder - Mid-Atlantic
- Tilefish - Mid-Atlantic

South Atlantic

- ■ Hogfish - Florida Keys/East Florida¹
- ● Red snapper - South Atlantic
- ■ Red pogy
- ● Snowy grouper
- ● Gag - South Atlantic
- ■ Red grouper - South Atlantic
- ● Blueline tilefish - South Atlantic

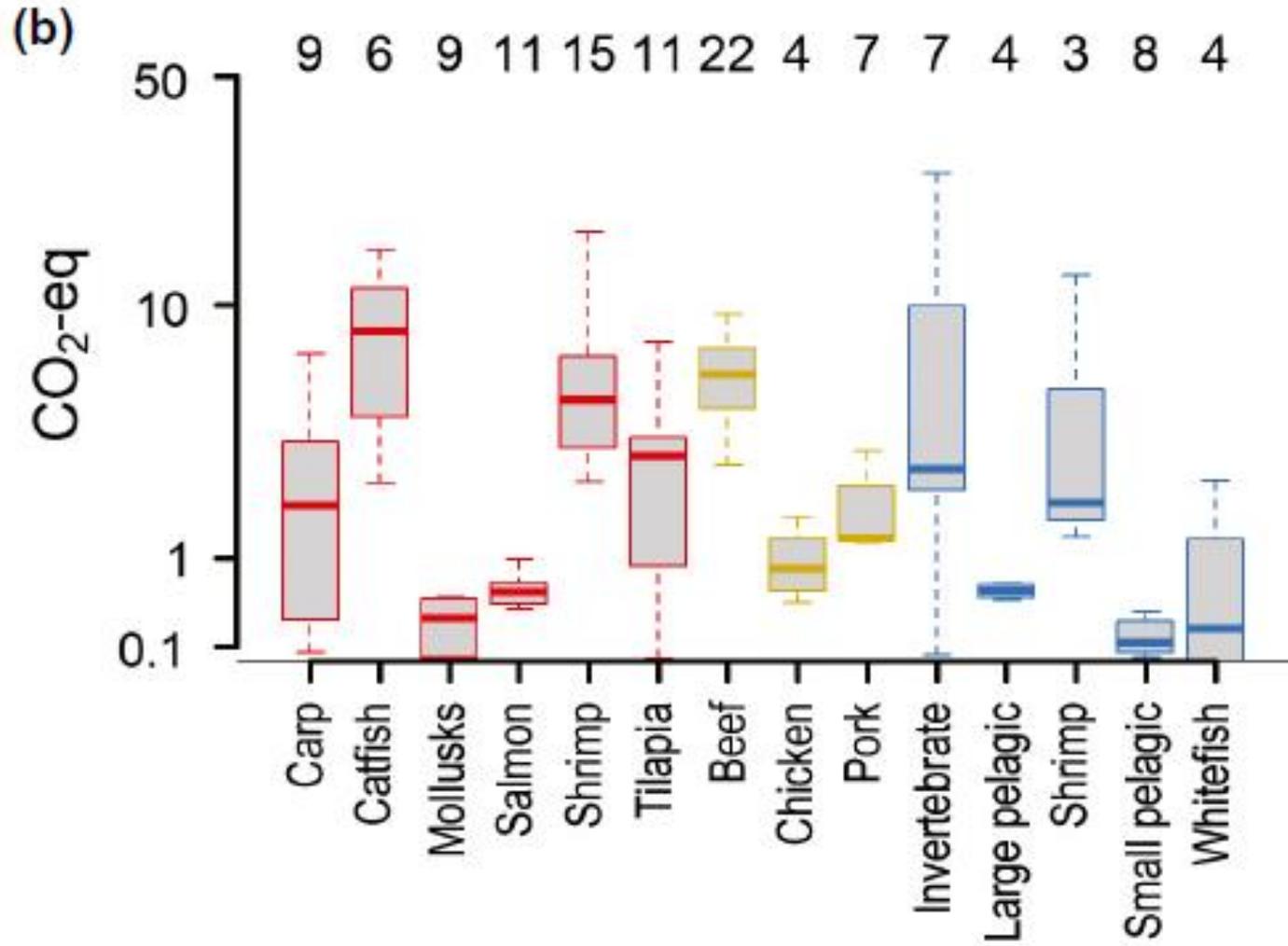
Marine Aquaculture in New Jersey

- Focus is on shellfish, primarily oysters and hard clams.
- Long-term shift from principally wild-harvest fisheries to aquaculture.



Ecosystem benefits provided by Oysters





Hilborn et al. (2018)

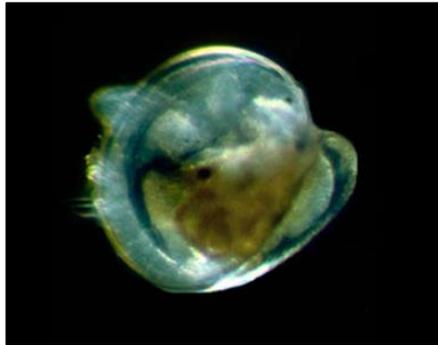
Oyster Aquaculture



Cultivating the Eastern Oyster, *Crassostrea virginica*. Wallace (2001)

https://www.agmrc.org/media/cms/9008383432fs_28E8EB79FF3AA.pdf

Oyster Aquaculture



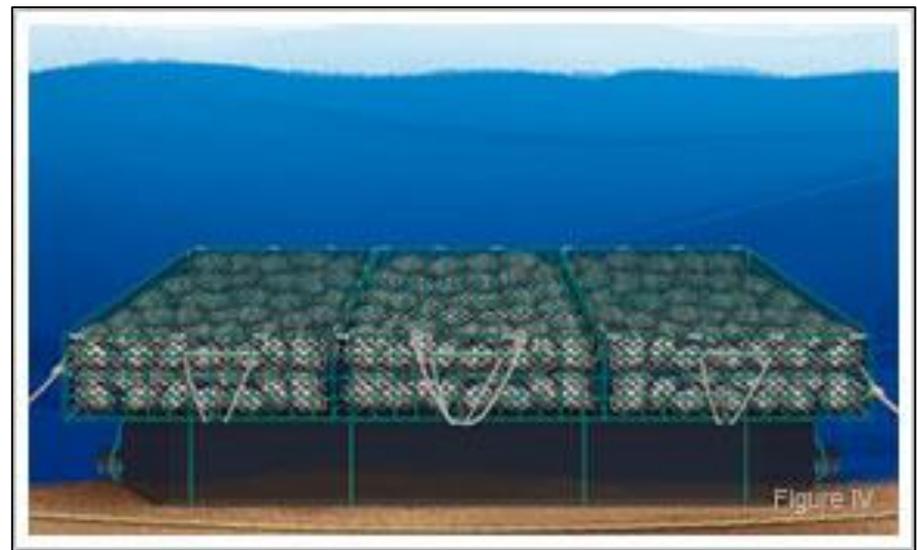
Cultivating the Eastern Oyster, *Crassostrea virginica*. Wallace (2001)

https://www.agmrc.org/media/cms/9008383432fs_28E8EB79FF3AA.pdf

Rack and Bag



Oyster Cages



Floating Cages



Hard Clam Aquaculture



Hard Clam Aquaculture



Hard Clam Aquaculture

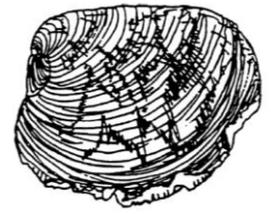


Figure 1.
Crab damage to
hard clam shell.

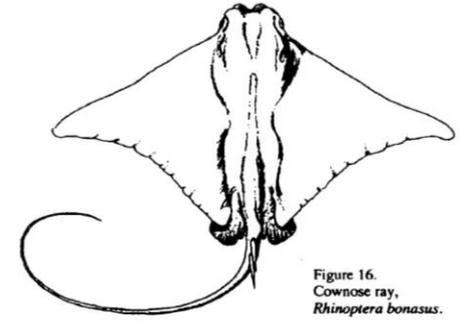


Figure 16.
Cownose ray,
Rhinoptera bonasus.

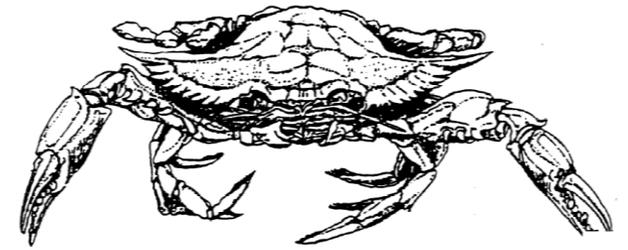


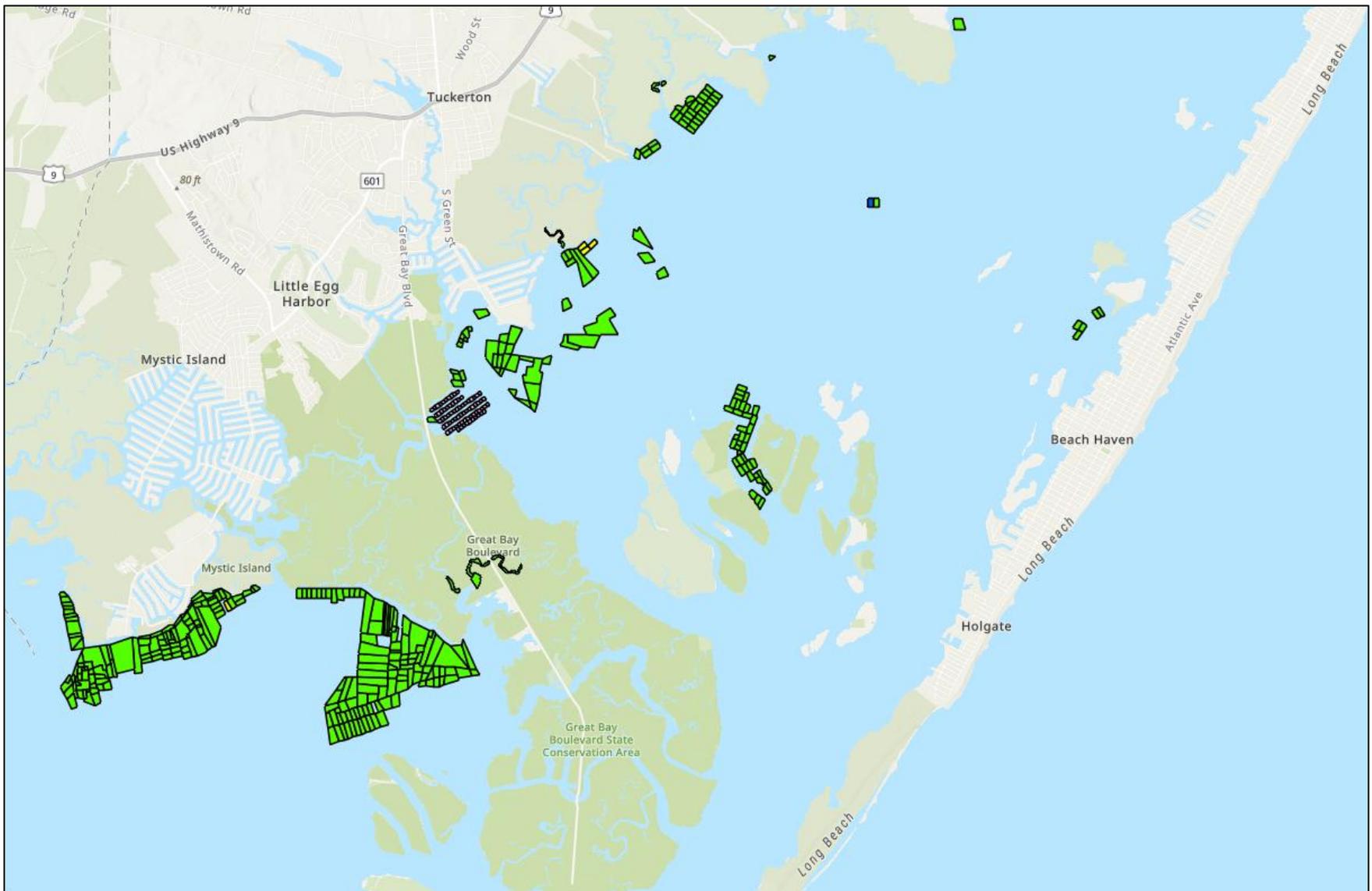
Figure 11.
Oyster drill, *Euplura caudata*,
a major oyster predator.



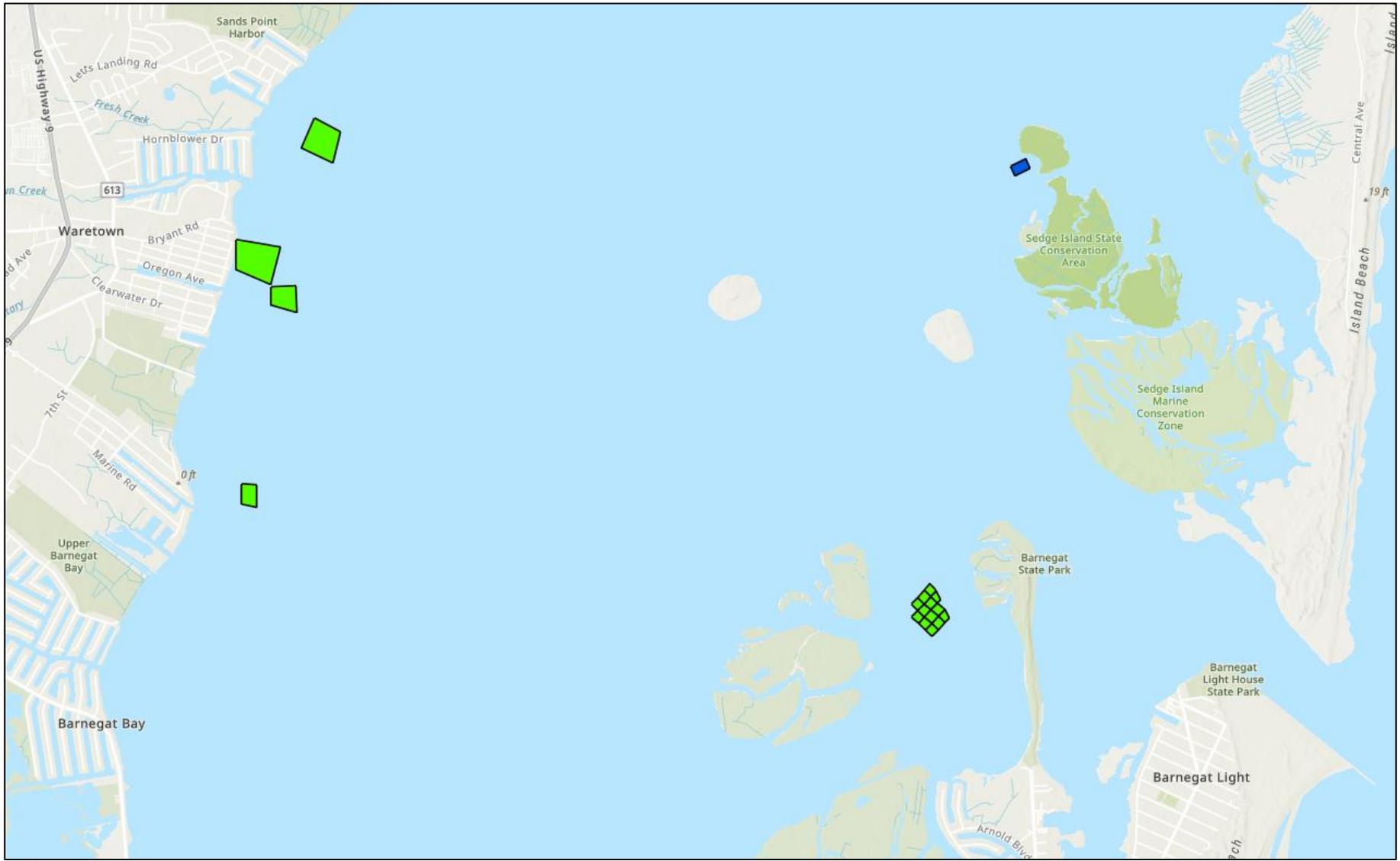
Figure 12.
Oyster drill, *Urosalpinx cinerea*,
normally grows to 1/2 to 1 inch
(12 - 25 mm) in length.

Predator Control Screens

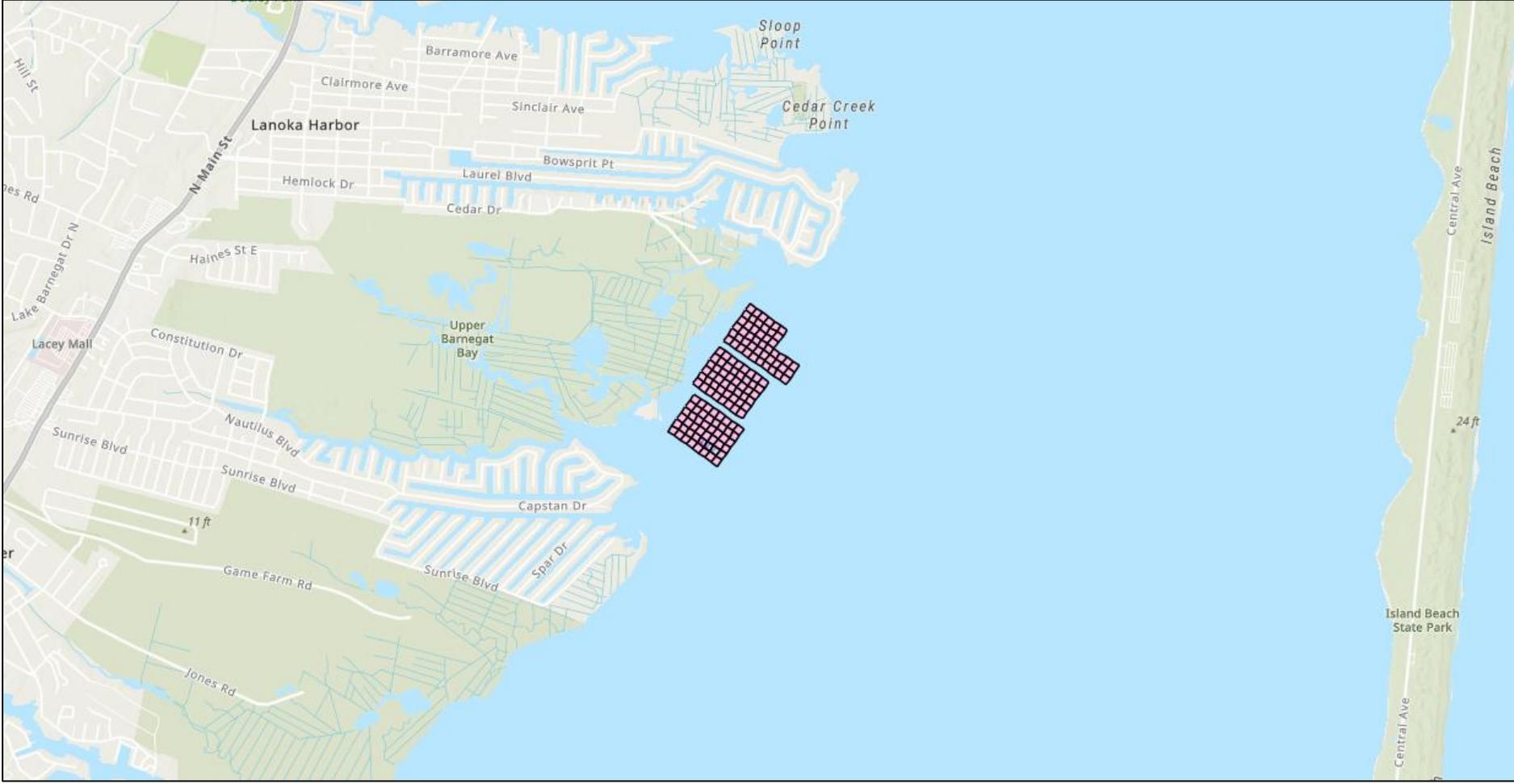




New Jersey Aquaculture Siting Information Tool



[New Jersey Aquaculture Siting Information Tool](#)



[New Jersey Aquaculture Siting Information Tool](#)

New Jersey Seafood Finder

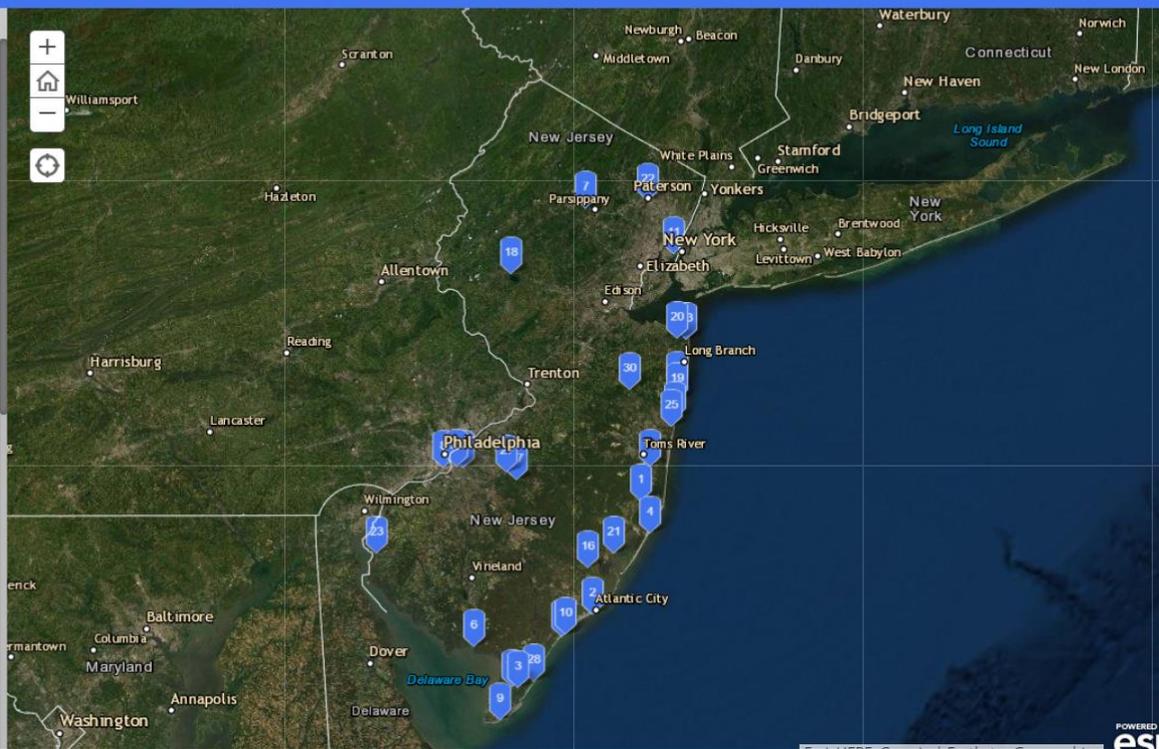
Click [HERE](#) for more information.   

Business closures during the COVID-19 pandemic have severely impacted New Jersey's seafood industry and supply chain. The state and federal governments are working to support seafood businesses which sell seafood products that have been landed, grown or harvested in New Jersey. This application, created through a collaboration between the NJ Division of Fish & Wildlife (DFW), the NJ Department of Agriculture and Rutgers, allows the public to quickly locate businesses near them. This website is for informational purposes only. The information posted on this site has been provided by the businesses themselves. The information does not represent a



- Markets
- Restaurants
- Delivery/Pick-up
- Distributor

 1 Ahearn's Seafood Market	 2 Barbera Seafood Market	 3 Bayside Seafood	 4 Boulevard Clams
 5 Brigantine Oyster Company	 6 Cape May Salt Oyster Farms	 7 Denville Seafood	 8 Fishadelphia
 9 H & H Seafood	 10 Jay's Crab Shack	 11 Jersey City Fish Stand	 12 Jody & Jodee's Fishery
 13 Lusty Lobster	 14 M & M Seafood	 15 Matthews Seafood Market	 16 Maxwell Shellfish



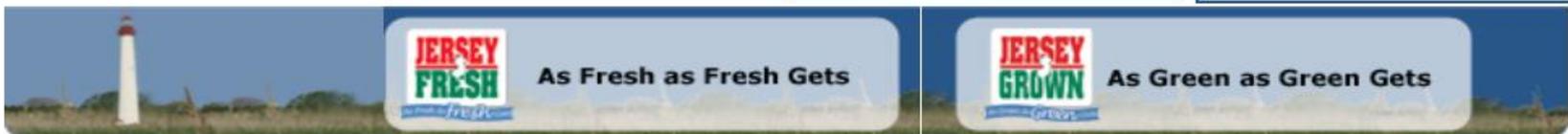
<https://www.nj.gov/dep/njseafood>



from the garden state...it's a shore thing



jersey seafood links	recipe of the month	video tips	headlines
<ul style="list-style-type: none">  cooking & health  events calendar  jersey seafood program  aquaculture  publications  contacts  just for kids 	 <p style="text-align: center;">Recipe of the Month</p> <p>This month's Jersey Seafood highlighted recipe is Barnegat Light Scallops with Creamless Creamed Corn by Chef Bryan Gregg of Escape Montclair, his 2015 Jersey Seafood Challenge -winning dish. >>archived recipes</p>	 <p style="text-align: center;">Video Tips</p> <p>Need help in preparing seafood and want to learn more about the seafood industry? View our library of videos.</p> <p><i>Ask for Jersey Seafood at your local supermarket or fish market.</i></p>	 <p style="text-align: center;">2015 Jersey Seafood Challenge</p> <p>Congratulations to Bryan Gregg, Chef/Owner of Escape Montclair, who won the 2015 Jersey Seafood Challenge with his Barnegat Light Scallops dish. Read more...</p> <p>>>archived headlines</p>





RUTGERS UNIVERSITY

Cooperative Extension

New Jersey Agricultural Experiment Station



Teaching Evaluation

Douglas Zemeckis, zemeckis@njaes.rutgers.edu, 732-349-1152