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# MAA Annual Meeting: Update from SEMAC Cape Cod Cooperative Extension & Woods Hole Sea Grant

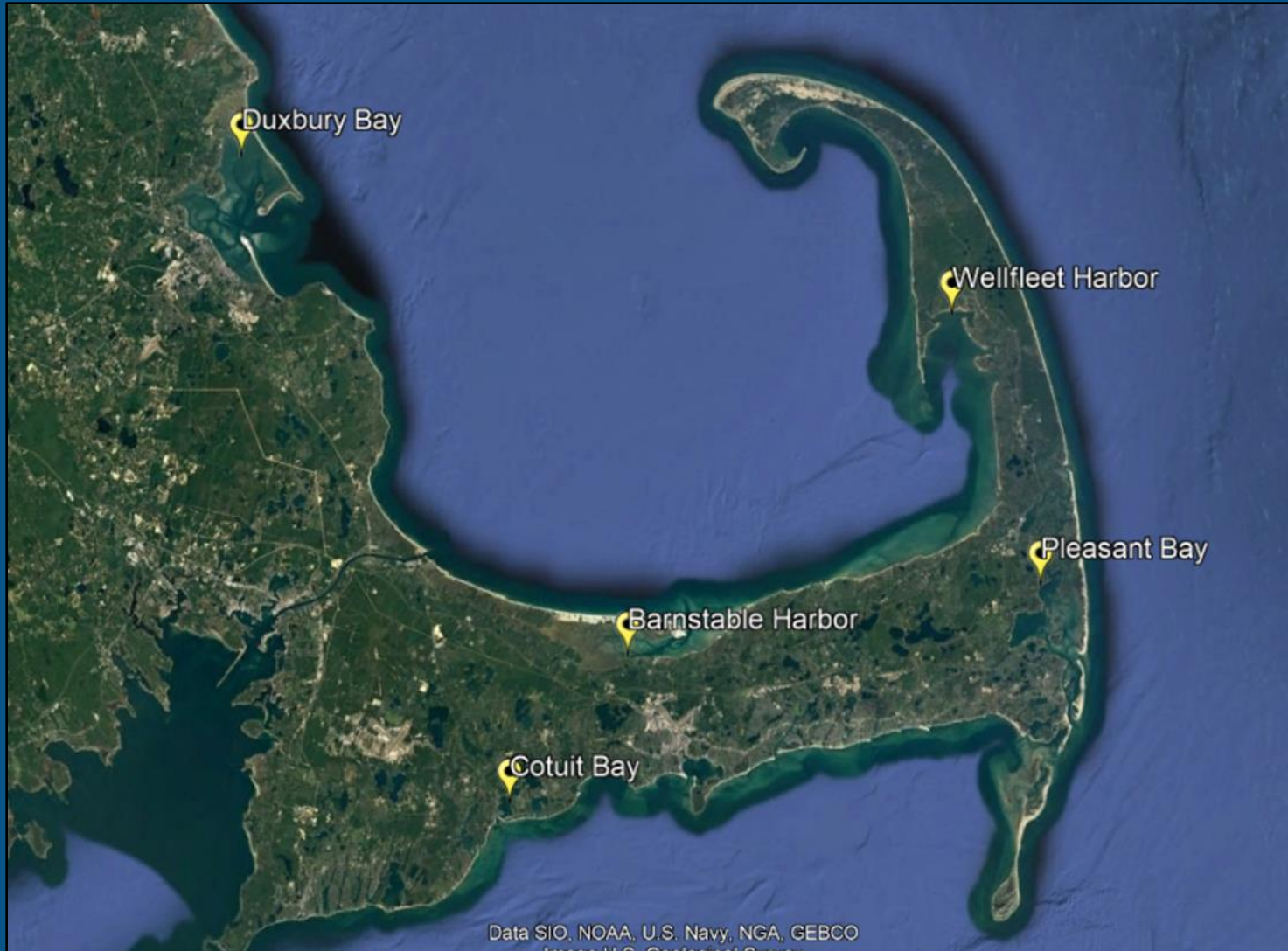
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Harriet Booth, Marine Resource Specialist

Joshua Reitsma, Fisheries & Aquaculture Specialist

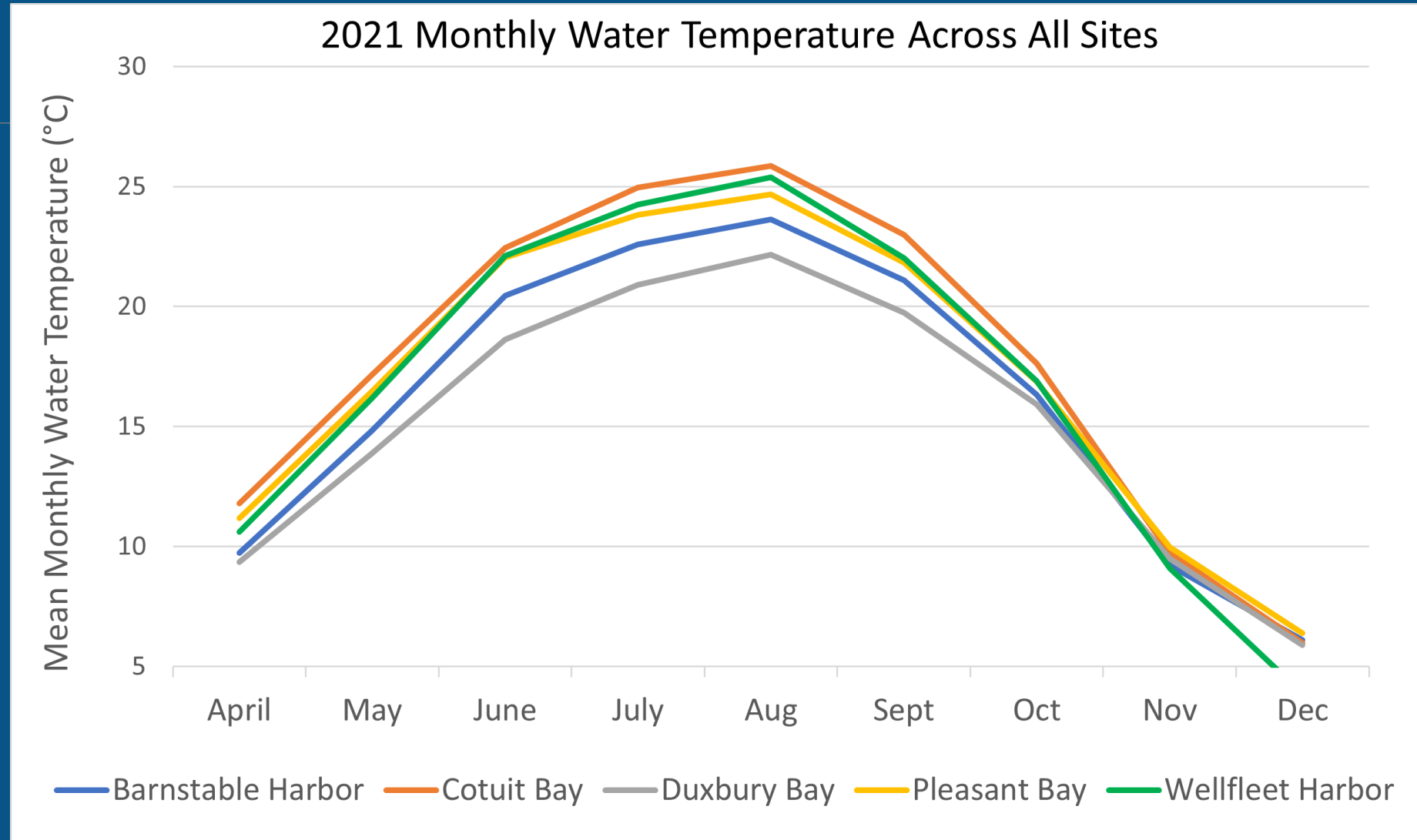
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# Water Quality Monitoring Program



- 2021 season complete
  - Successful transition to new sensors – YSI to In Situ
- Trial runs with telemetry system → real-time data transmittance at all sites
  - Currently only available for Cotuit Bay and Wellfleet Harbor

# Water Quality Monitoring Program



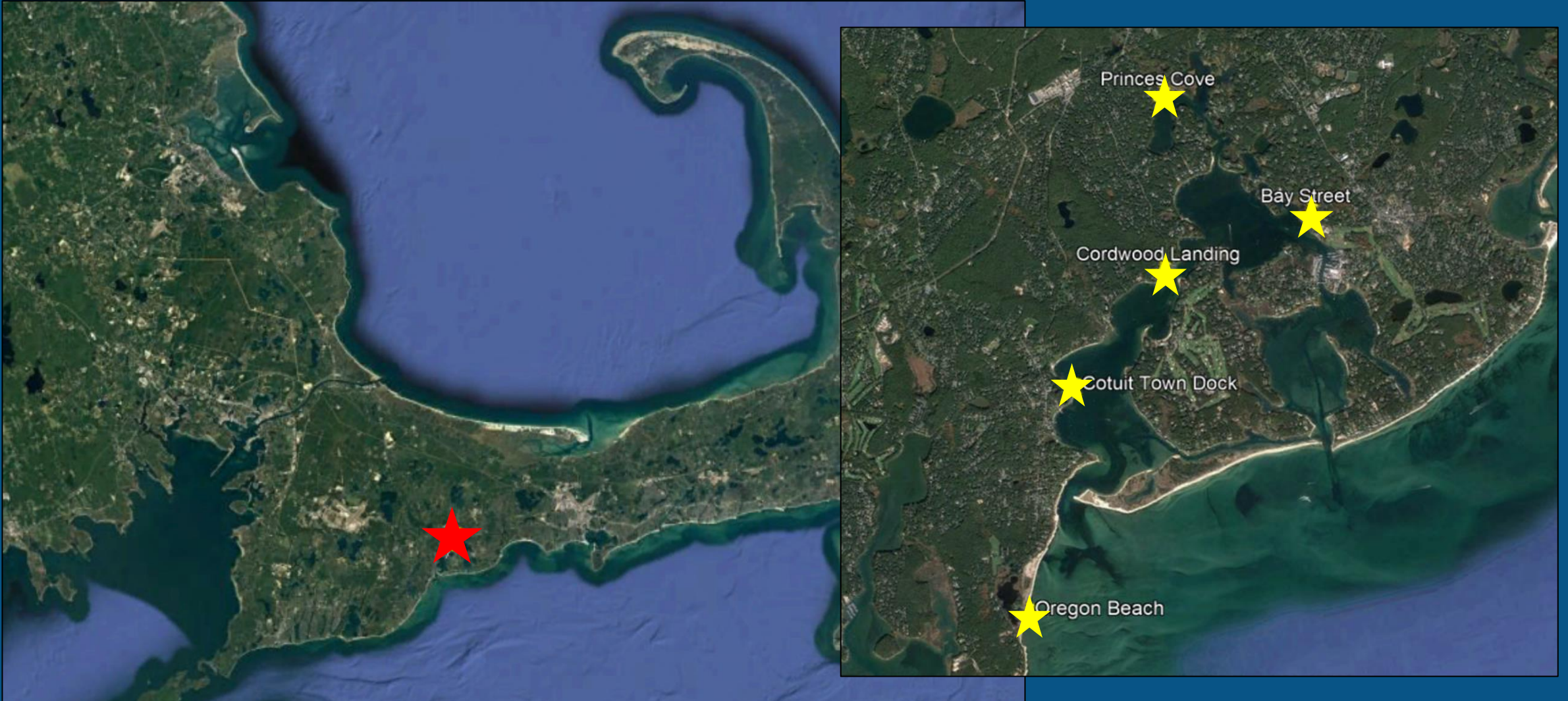
# Water Quality and Aquaculture Project in Three Bays

- How does water quality and ocean acidification affect shellfish growth and survival in their natural environments?
  - Natural gradient of conditions across 5 sites:
    - Princes Cove – highest nutrients, lowest dissolved oxygen
- ↓
- Oregon Beach – lowest nutrients, highest dissolved oxygen (in Nantucket Sound, more well-flushed)





# Water Quality and Aquaculture Project in Three Bays





# Ocean Acidification Monitoring

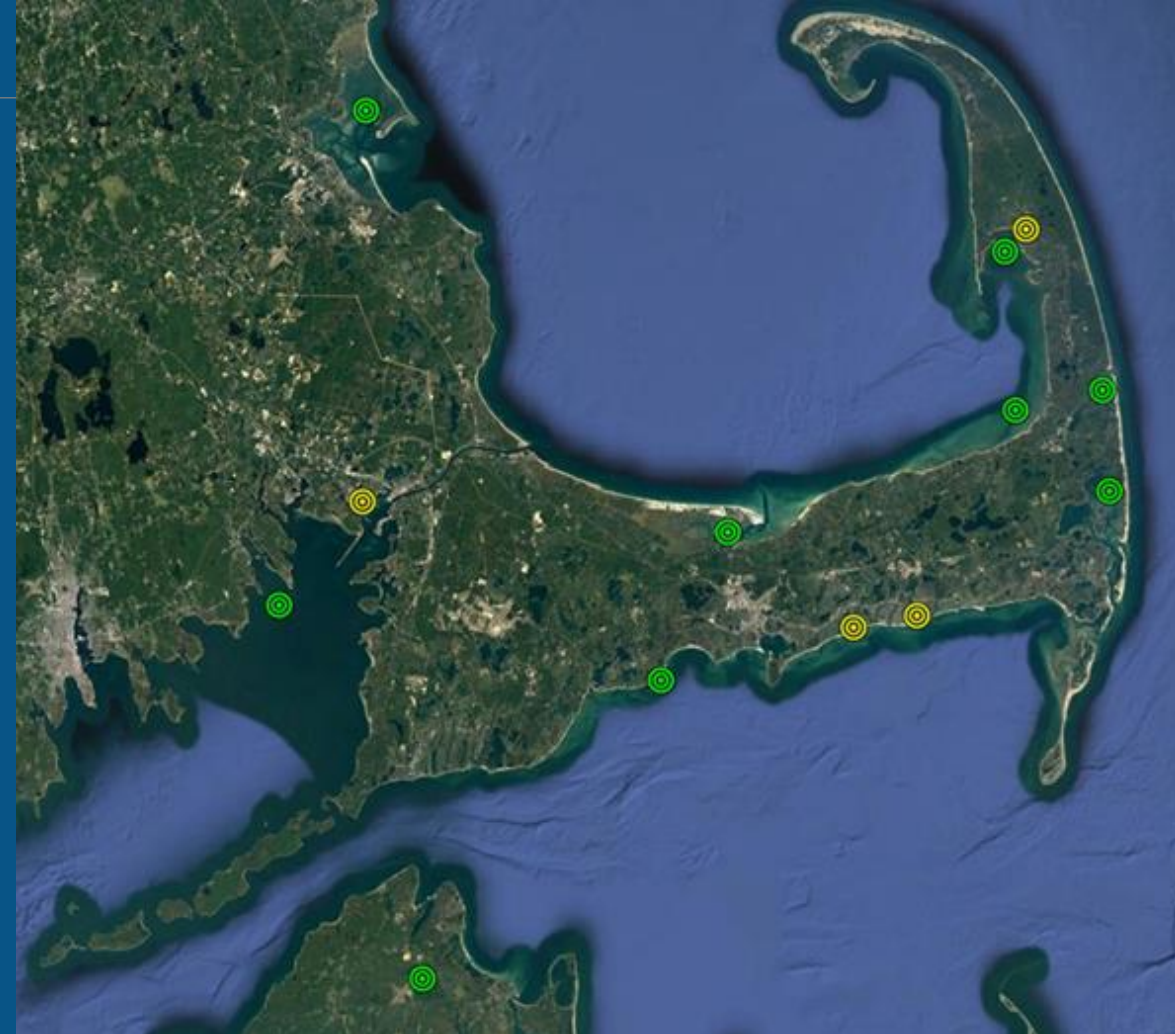


- Instruments that measure water **pH** and **total alkalinity** in natural environments
- Available to deploy at farms or other shellfish growing areas in 2022
  - If interested in looking at water/OA conditions at your growing site, contact [harriet.booth@barnstablecounty.org](mailto:harriet.booth@barnstablecounty.org).

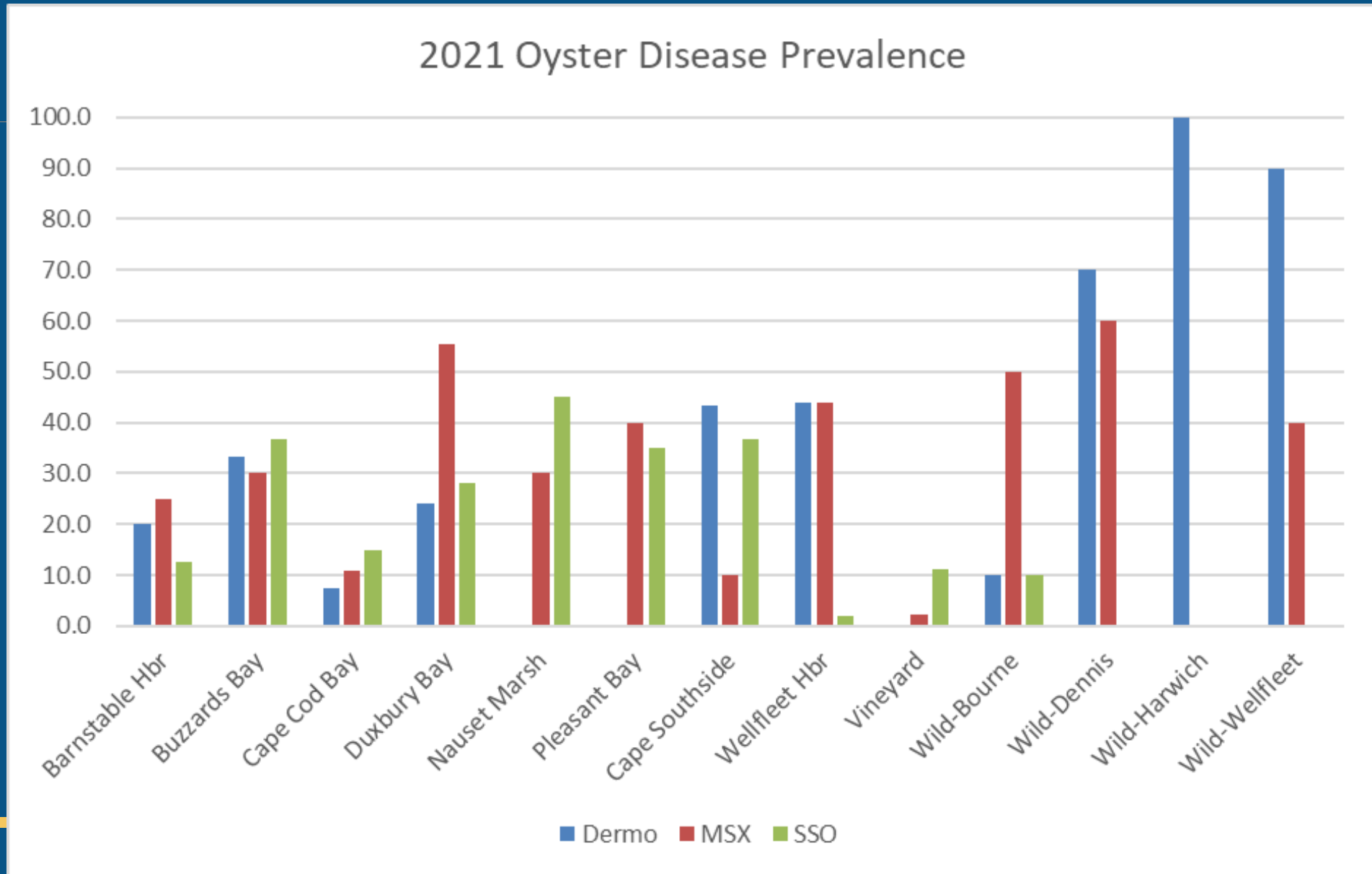


# Disease Research Network (DRN) - Oysters

Oysters from ~40 sites  
Results averaged from  
multiple farms per region  
4 wild oyster sites – sentinel

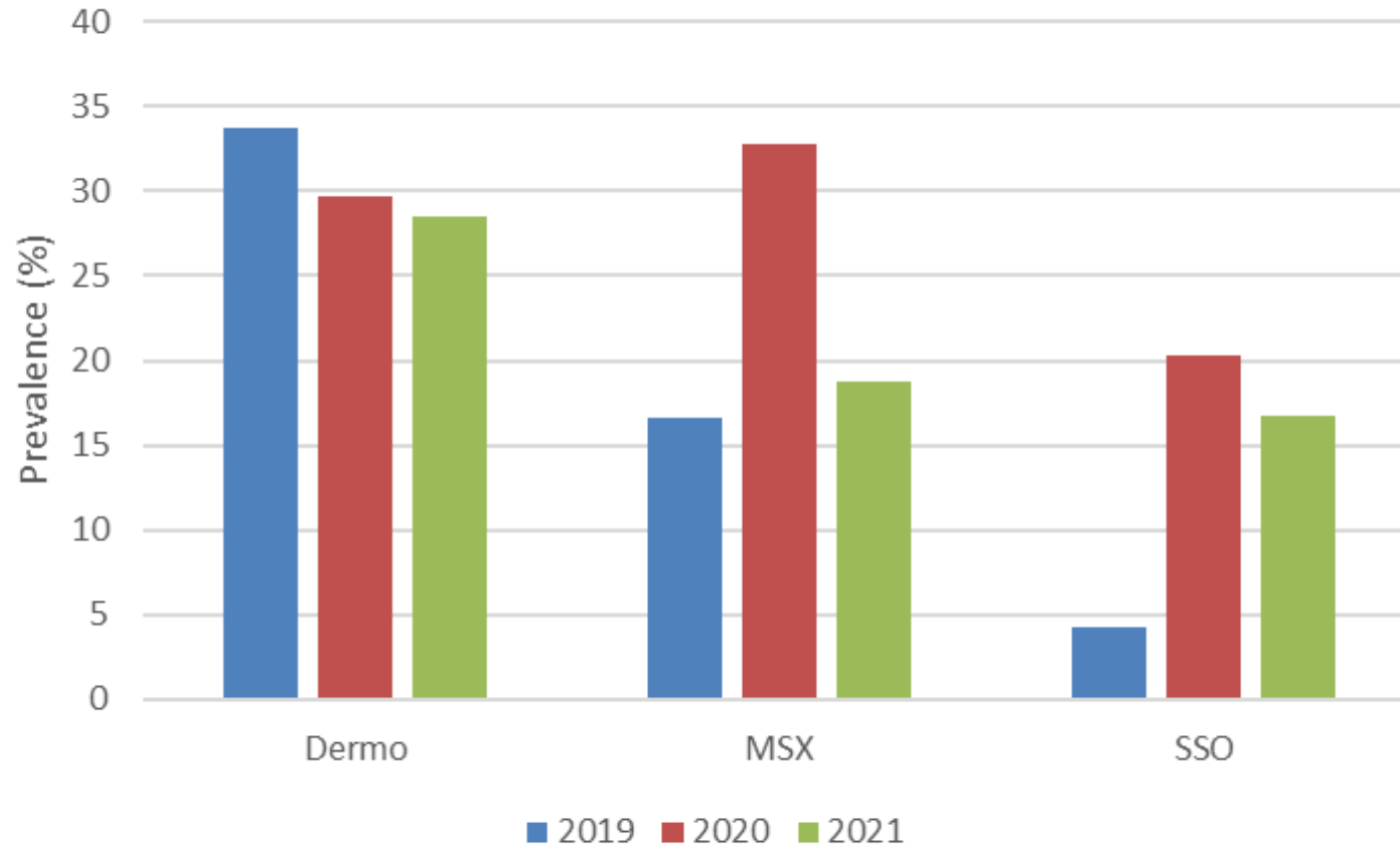


# Oyster pathogen prevalence in 2021





Comparing Disease Prevalence 2019 to 2021



- Dermo intensity up slightly
- 90% of sites sampled had at least one pathogen

# Quahogs - disease



- A lot of interest in developing resistant or tolerant strains
  - Work underway with QPX
  - Proposed for neoplasia

Quahog Health Report Summary - 2021								
Location	# sites	Year	# of hatchery strains	Hemacytic Neoplasia (HN)		QPX		Notes
				# Sites +	% infected	# Sites +	% infected	
Wellfleet, surface	7 sites	2019 class	5	7	43-100%	0	0	6 of 7 sites had >75% prevalence of HN
Wellfleet, sediment	7 sites	2019 class	5	7	3-27%	0	0	all samples positive, much lower prevalence of HN
Barnstable Harbor	4 sites	2019 class	2	2	0-13%	3	0-7%	low levels of both, 1 site completely clean
Other areas	3 sites	2019 class	2	0	0	0	0	all sites had clean pathology

# Surf (Butter) Clams

## Compared 2 genetic strains

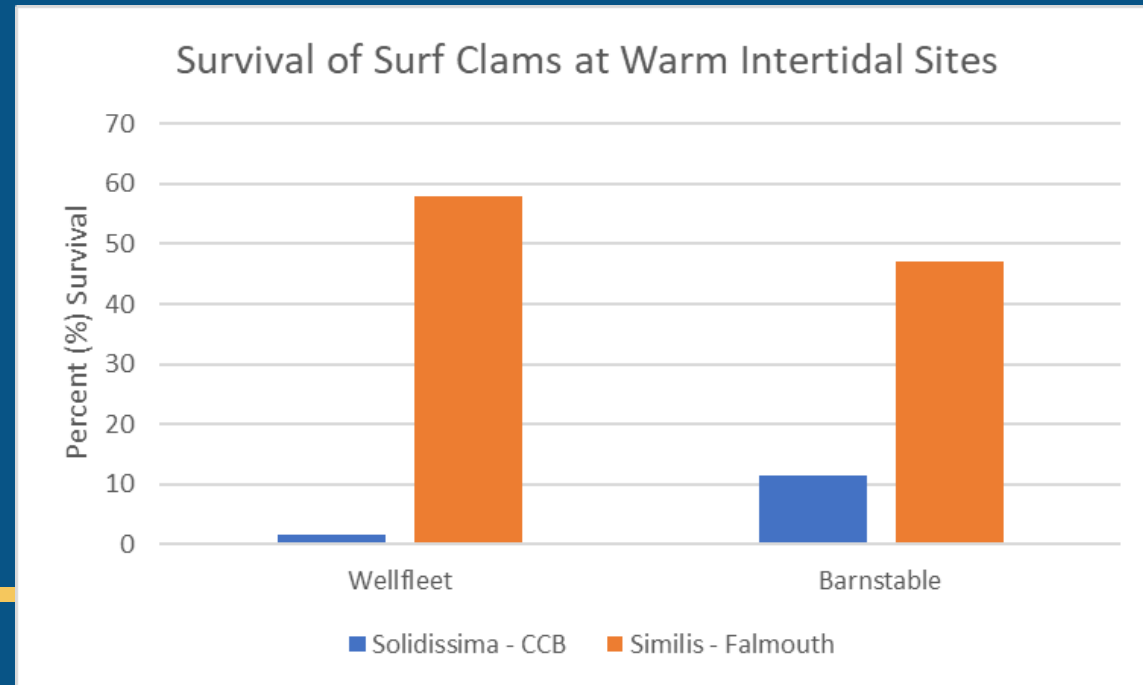
- *S.s. solidissima* (Cape Cod Bay strain)
- *S.s. similis* (Falmouth “southern” strain)

## Grew similarly

- >2” in 2<sup>nd</sup> season

## Survival better with southern strain

- Especially in warmer intertidal areas





# Mini-grants – Bird Deterrents

Late start, will continue  
following next year

Many ideas

- Kites
- Gear modifications/alterations
- Streamers/Monofilament
- Motion activated light pulses
- Random water spray



# Review of MA BMP's

Last edited in 2004

Time to update?

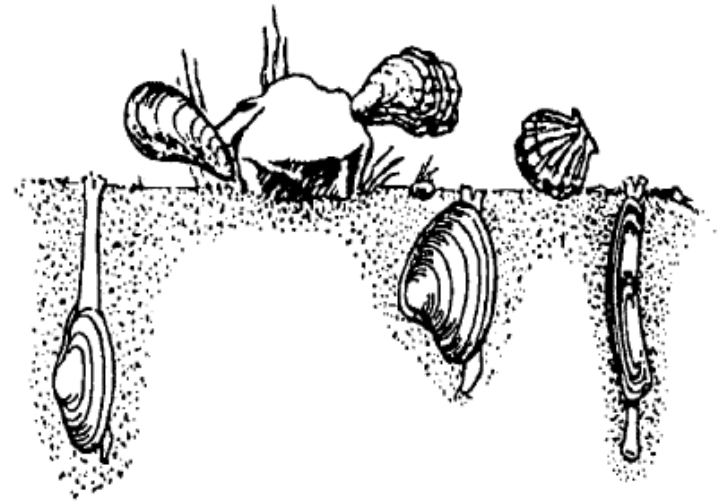
What needs changes?

Are new sections needed?

Grower stipends to review thru SEMAC funds

## Best Management Practices for the Shellfish Culture Industry in Southeastern Massachusetts

(Version 09-04a)



Developed by:  
Massachusetts shellfish growers  
in collaboration with  
the SouthEastern Massachusetts Aquaculture Center  
with support provided by the Massachusetts  
Department of Agricultural Resources and the  
USDA Risk Management Agency



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# Thanks!

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