

Instructions on how to use this presentation

- This presentation is an educational resource for municipal shellfish committees to share with their town council or board of selectmen.
- This presentation includes slides that are general to the state and Casco Bay region, as well as 'template' slides that are intended to be tailored to shellfish programs in individual towns.
- The template slides that should be revised include #2, 5, 6, 10, 11, 14, 24 & 25
- There is a handout to accompany this presentation that can be printed out (or emailed) and distributed before the presentation.
- The presentation and handout were created by interns from Bates College: Josie Carter and Natalie Moon, and reviewed by members and facilitators of the Casco Bay Regional Shellfish Working Group.
- Each slide contains notes as a resource for presenters.

(Name of Town)'s Shellfish Management Program

Presented by: (Name)

Date:

Clamming Overview



“The shellfish industry of tomorrow depends on the shellfish wisdom of today. Don't let these resources become just a story of the past; our combined efforts now can pay off for generations to come, with your help” - Harvester, Yarmouth, ME

Purpose of a Shellfish Management Program

- Goals: control access, maximize individual harvest, provide maximum utilization, maintain a sustainable yield, and increase the shellfish resource.
- Activities: setting the number and types of licenses, establishing conservation areas, restricting the amount/time/season of harvest, protection from predation with traps, etc.
- Tools: clam flat surveys, harvester questionnaires, committee meetings, enforcement, etc.

[Shellfish/Marine Resource Committee] in [Town]



Add names of individuals and their positions on the marine resource committee in the specific town including the shellfish liaison.

Add when the town shellfish or marine resource committee typically meets.

[Town Name's] Shellfish Management Program

Program's Importance to Town

- Ecological services
- Cultural heritage
- Economic benefits

Issues and Opportunities

- Increasing demand for local seafood
- Climate change
- Invasive Predators
- Limited shellfish resources

Actions Needed

[Fill in as needed]

Presentation Outline

- I. Importance of Fishery: ecology, cultural heritage, economic benefits
- II. Context
 - A. Value of Landings to the Casco Bay Region
 - B. Casco Bay Ecosystem
 - C. Casco Bay Ecology
 - D. Co-management in Maine and Internationally
 - E. Trends in landings
- III. Issues Facing the Shellfish Fishery
- IV. Opportunities for the Shellfish Fishery
- V. Casco Bay Regional Shellfish Working Group
- VI. Town-specific Agenda Items and Requests



I. Importance of Fishery to Town: Ecology

Water Purification

- Shellfish are filter feeders
- Take in water→ filter out plankton, algae, pollutants→ release filtered water

Protection from Erosion

- Shellfish buried in mudflats
- Hold sediment together
- Keep shoreline intact

Nutrient Cycling

- Shellfish consume plankton and detritus
- These contain nitrogen and phosphorous that could lead to algae blooms
- Maintain healthy oxygen levels

I. Importance of Fishery to Maine: Cultural Heritage

- Shell middens from the Wabanaki date back thousands of years ago
- Clam management began in the 1640's with the Colonial Shellfish Ordinance
- 1821: first Legislature after Maine becomes a state gives towns authority over clam harvesting, assuring that all community members could take shellfish at any time for personal and family use



I. Importance of Fishery to [Town]: Cultural Heritage

Add history of the shellfish fishery in the specific town. For example, shell middens have been discovered on the shores of Broad Cove in Cumberland.



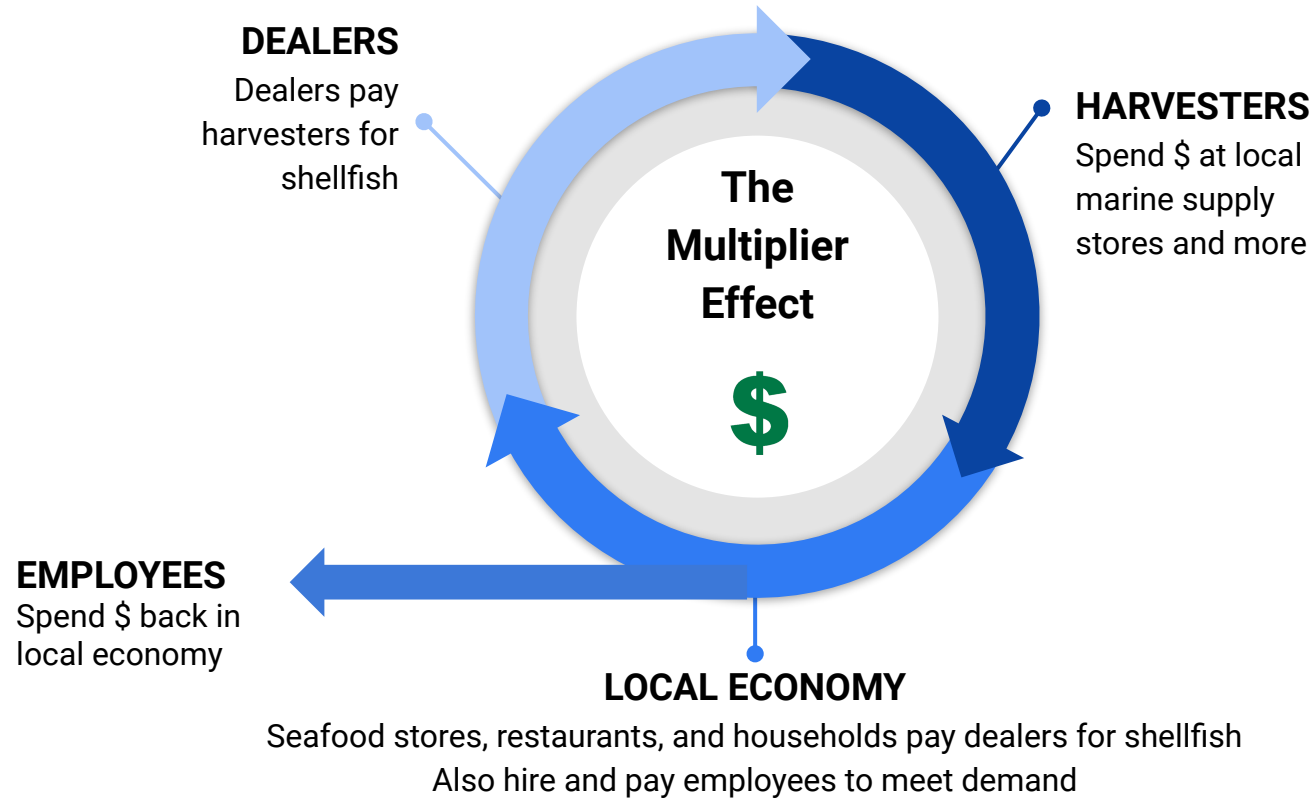
I. Importance of Fishery to [Town]: Jobs & Revenue from Shellfish Licenses

License Type	Number
Resident commercial	4
Non-resident commercial	1
Student resident commercial	
Student non-resident commercial	
Resident recreational	50
Non-resident recreational	5

I. Importance of Fishery to Town: Economic Benefits



I. Importance of Fishery to Town: Economic Benefits

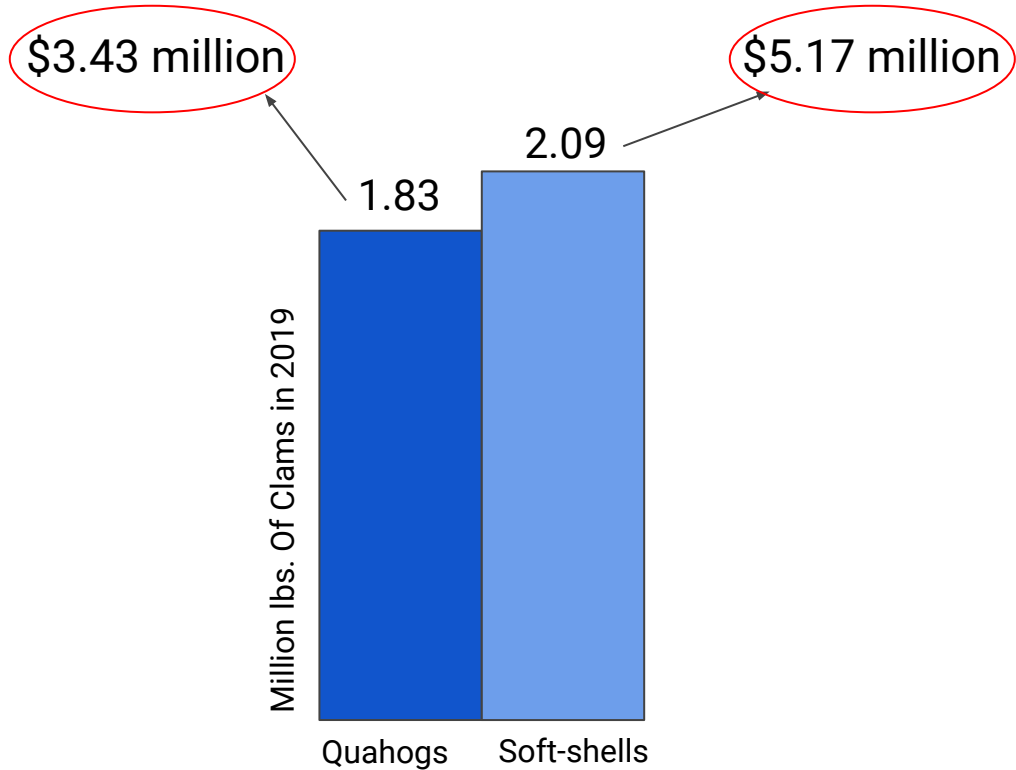


I. [Town] Specific Shellfish Information

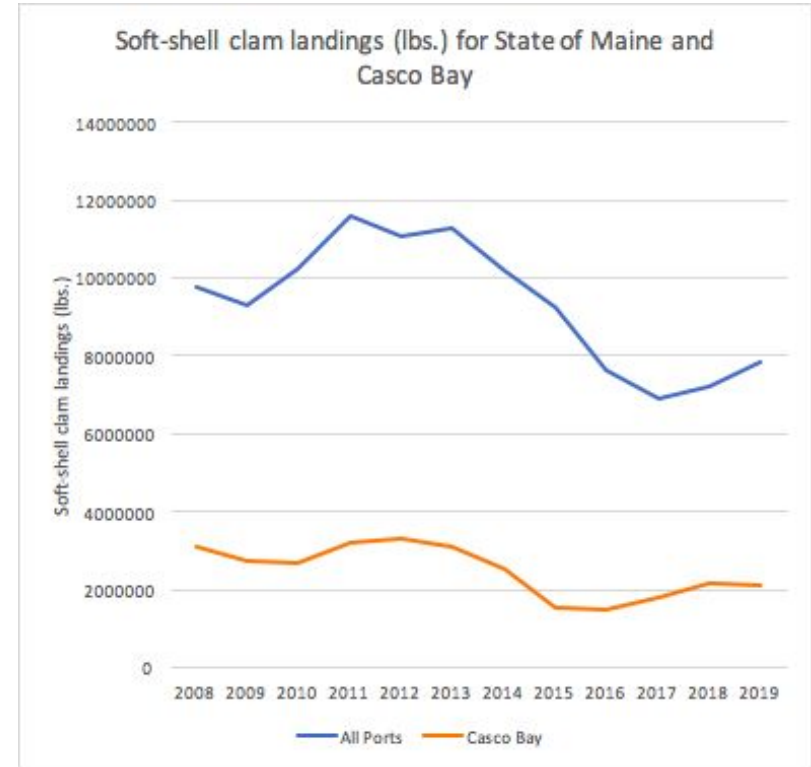
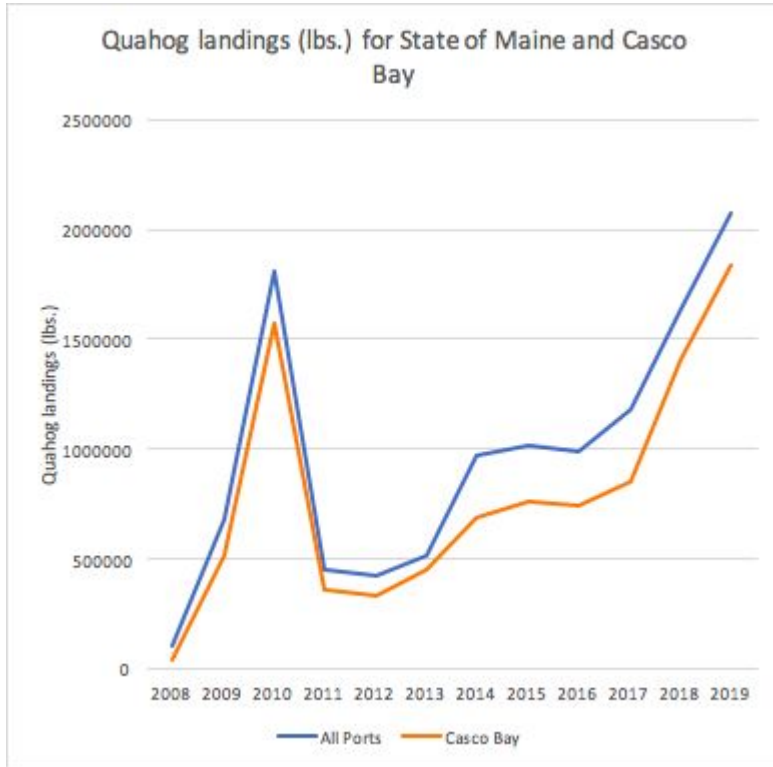
- *If a town has specific shellfish information unique to their community, use this slide to present it. For example, present Yarmouth's clam festival or Brunswick's quahog restoration efforts.*



II. Context: Value of Landings - Casco Bay Region

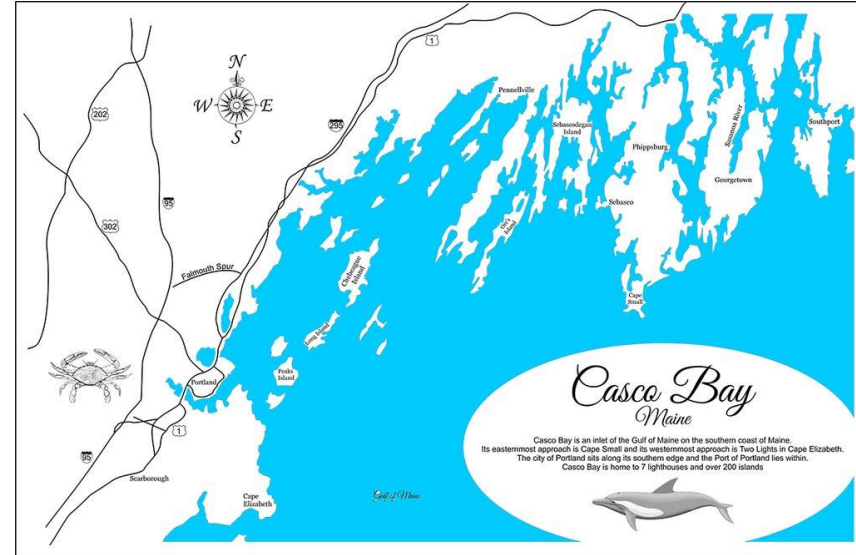


II. Context: Trends in Landings



II. Context: the Casco Bay Ecosystem

- Encompasses 14 coastal communities
- The Casco Bay watershed is nearly 1,000 square miles
 - It includes 42 communities
- Several rivers empty directly into Casco Bay
- Contribute nutrients and marine life to the Gulf of Maine
- Provides habitat for 850 species of marine life and 150 species of birds
- Home to $\frac{1}{4}$ of Maine's population and $\frac{1}{3}$ of the total jobs in the state



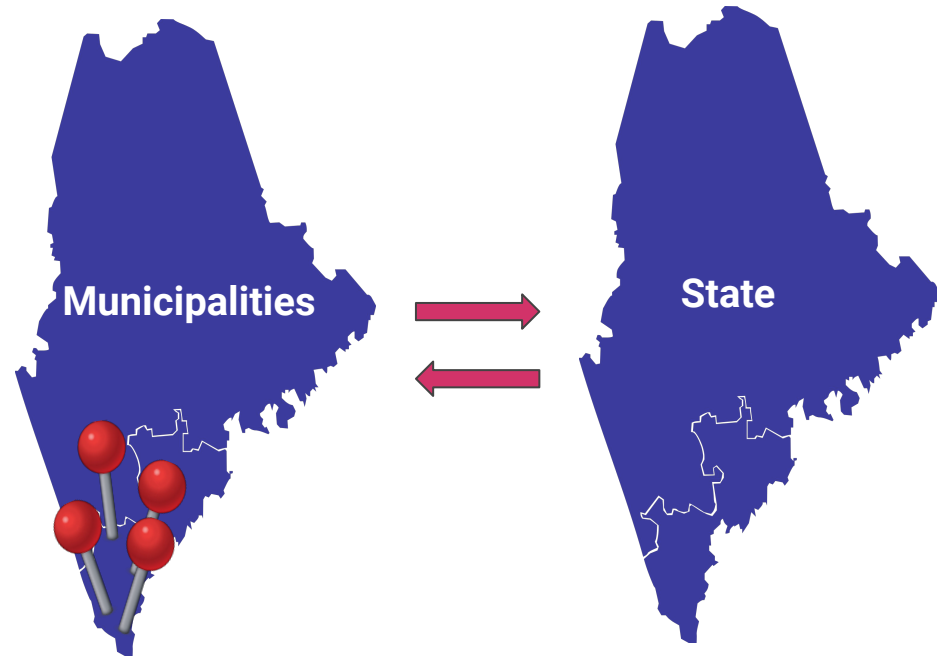
II. Context: Casco Bay Ecology

- Casco Bay is an estuary.
 - Rivers add nutrients while tides contribute oxygen rich seawater
 - Winds, tides, and currents mix nutrients throughout the water column and the Bay
- The actions of one town in the Casco Bay region impact the health of the whole Bay's ecosystem.
- Casco Bay is saltier than many other estuaries.
- Salinity variations in the Bay are due to mixing of freshwater inputs with Gulf of Maine waters.



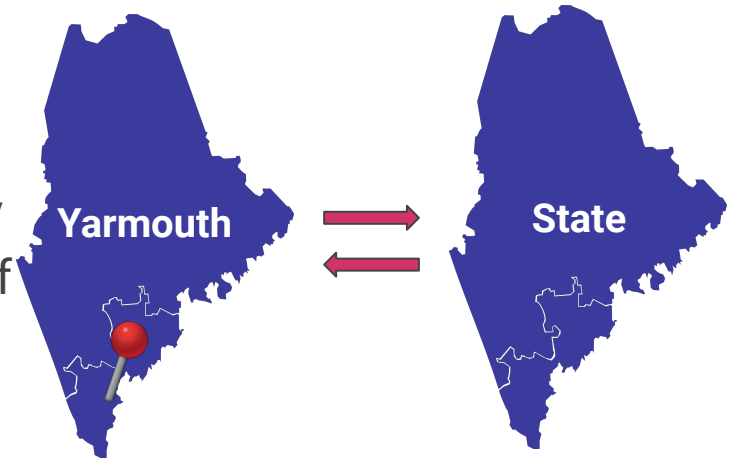
II. Context: Co-management

- Implemented locally across the globe
- Promotes sustainable resource use
- Ensures that shellfish harvesters have a role in the management decision making processes
- Critical to ensuring a successful fishery going forward



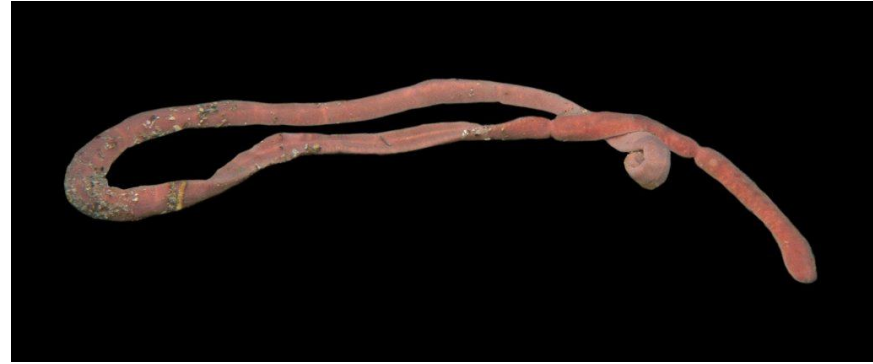
II. Context: Co-Management in Maine

- Shellfish that exist in the intertidal zone are co-managed by the State and municipalities
- The Maine Department of Marine Resources (DMR) is responsible for shoreline point-source pollution surveying, water quality testing, and the related opening and closing of flats
- Municipalities are responsible for creating ordinances and determining license numbers
- An effective mechanism for addressing issues and promoting conservation efforts



III. Issues Facing the Shellfish Fishery

- Gulf of Maine is one of the fastest warming bodies of water
 - Affects shellfish through environmental changes
- Increased rate of clam predation by milky ribbon worms and green crabs
- Ocean acidification
- Water quality closures
 - Biotoxin, bacterial, and rainfall
- Limited entry fishery
 - Demand for licenses exceeds supply
- Limited access to the intertidal



VI. Opportunities for the Shellfish Fishery:

- Harvester-driven conservation projects, utilizing available grant funding and technical assistance
- Increasing water quality monitoring partnerships between towns and states
 - Can help towns reopen closed areas by determining what events are causing pollution (i.e., conditionally approved areas based on bacteria levels)
- Expand predator control efforts for green crabs and explore mitigation options for milky ribbon worms
- Reseeding or relaying clams to restore populations and boost harvest




V. Casco Bay Regional Shellfish Working Group (CBRSWG)

- Encompasses 13 towns
- Created in 2019 with the purpose of facilitating improved co-management and conservation
- Primary goal includes improving communication and collaboration, sharing information, resources, and tools to equip municipalities to manage wild intertidal shellfish in a changing ecosystem.



VII. Current Agenda Items in [Town]

- License Allocations: *[include specific town information as fits]*
 - Budgets: *[include specific town information as fits]*
 - Ordinance Changes: *[include specific town information as fits]*
 - Conservation Closures: *[include specific town information as fits]*
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VII. Request for [Town Council/Board of Selectmen] Action

- *If [Town] made a specific ask of the TC/BS use this slide to re-state ask and have TC/BS vote on it at this meeting*

