

# Supporting Municipal Co-Management of Shellfish and Community Engagement in Casco Bay



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# Project Background



<https://www.manomet.org/event/casco-bay-regional-shellfish-working-group-january-meeting/>

- Casco Bay Regional Shellfish Working Group
- Shared Focus Areas:
  - Multiple species management
  - Conservation projects
  - Sharing information across towns

# Aim, Objective, and Deliverable

## Aim

To provide resources for successful co-management of multiple species in the Casco Bay fishery to ensure a thriving fishery and healthy marine ecosystem in the future.

## Objective

Research best practices of other states (5 criteria)

## Deliverable

Comprehensive inventory of methods being used in four states to manage shellfish, specifically clams, resulting in a written summary report

A close-up photograph of several soft-shell clams. The shells are light-colored with a yellowish-brown hue, and some are open, revealing the pale, fleshy interior. The clams are piled together, creating a textured, layered appearance.

## Soft-shell clams

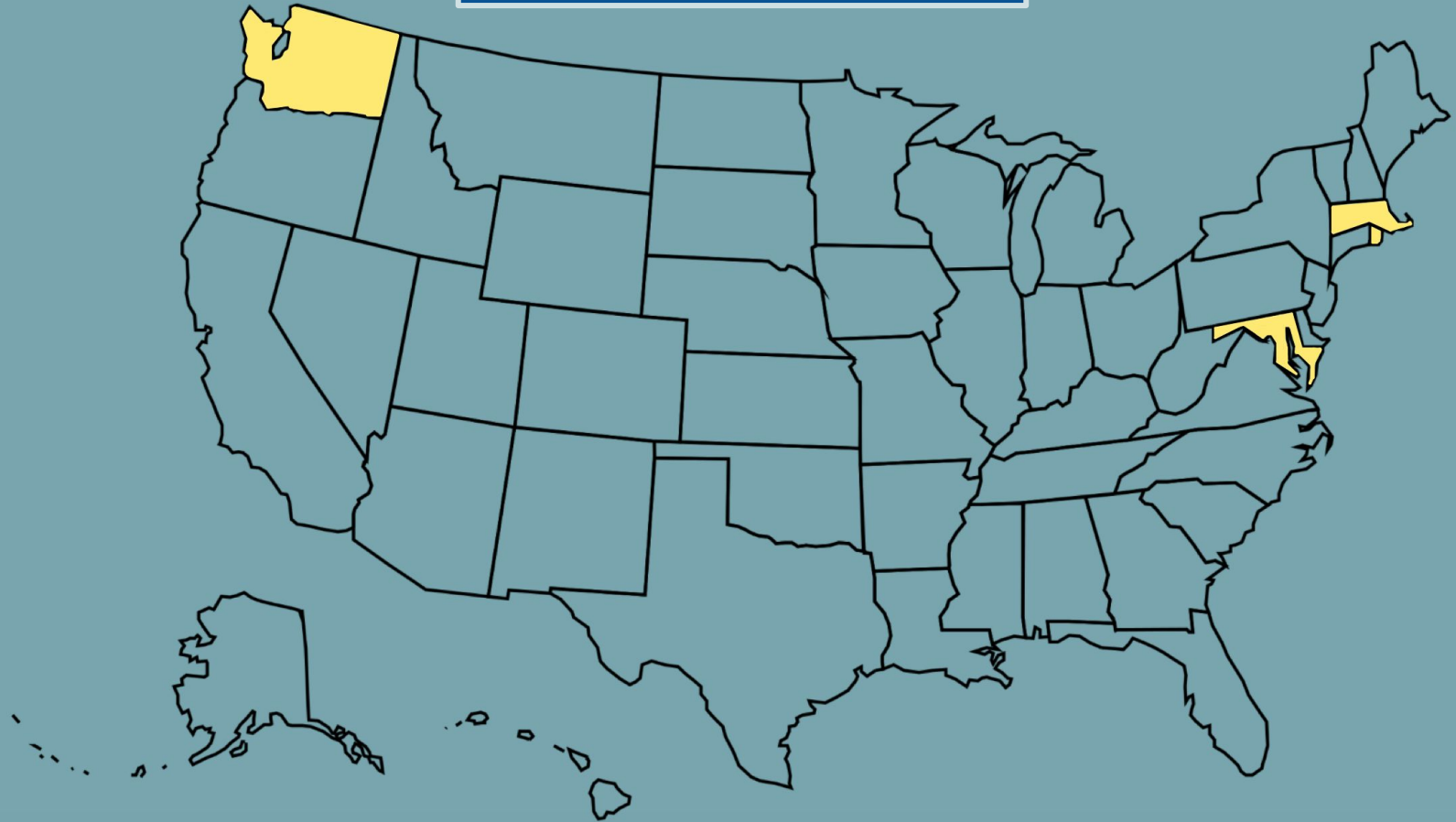
<https://hhltmaine.org/nature-notes/soft-shell-clams/>

A photograph of a woven basket filled with quahogs. The clams are dark-colored with prominent, concentric ridges on their shells. They are piled high in the basket, which has a visible woven pattern.

## Quahogs

<https://www.rimonthly.com/celebrate-local-clams-quahog-week/>

# Study Area



# Methods

1. Conduct research and interviews for MA, WA, RI, MD
2. Code interview data for 5 categories, summarize findings
3. Write and finalize MA, WA, RI, MD shellfish management literature review
4. Suggest ideas for Casco Bay based on data

# Key Informant Interviews

- 9 total interviews with key informants from all 4 states were conducted
- Questions on governance, licensing, reporting, surveying, monitoring, conservation
- Qualitatively coded these categories

N: Can you tell me a little bit about any conservation work the state does?|

G: We also run the contaminated relay program, which, right now, the source of quahogs is Taut (sp?) River. And municipalities contact myself and the dredge boat captains, I permit them, and I oversee the entire program, to where they pay the dredge boat captains so much a bushel, to bring the quahogs to them, and they plant them in approved or conditionally approved areas, and then we let them deparate for a minimum of three months, so that they can spawn also, and then after that we check them and then the town can open up after that. We also run an aquaculture program, which I think there's probably around 300 aquaculturalists now in MA, give or take a few. And we do all the permitting, the site surveys, everything that goes along with dealing with the towns. We also run a harmful algal bloom section, which is generally red tide, amnesic shellfish poisoning, diuretic shellfish poisoning, all these different things that are in the water at certain times of the year, planktonic, that can make shellfish inedible. At that point, there's just a whole list of things that we do. We deal with the towns one-on-one all the time, we deal with the Mass DET, which is another state agency, who has their jurisdictions. I mean Divisions does an awful lot, but for shellfish those are the general highlights. There's a few more but those are the big ones that take up the most of our time.

# Results: Licensing

## Findings

	License Type
Rhode Island	Master with species endorsements
Massachusetts	Town by town, mostly master
Maryland	Master with species endorsements

## Ideas Moving Forward

- Species-specific endorsements



# Results: Reporting

## Findings

	Frequency	Who Reports	Type of Data
Rhode Island	Every 2 weeks	Dealers	Landings in electronic database
Massachusetts	Annual (harvesters), landings	Harvesters and Dealers	Number of bushels and location, landings
Maryland	Weekly (harvesters), monthly (dealers)	Harvesters and Dealers	Location and date per bushel (harvesters), location and number of bushels, sales (dealers)

## Ideas Moving Forward

- Level of data desired
  - Best way to obtain this data
  - Frequency of reporting
- Tracing data back to towns

# Results: Surveying

## Findings

	Survey Type	Frequency	Standardized?
Rhode Island	Suction Sampling, Dredge	Annual	Yes, done by state
Massachusetts	Systematic biological sampling along transect	Case by case basis	Towns follow state protocol
Maryland	Dredge	Annual	Yes, done by state

## Ideas Moving Forward

- Standardized survey protocols and best practices

# Results: Monitoring

## Findings

	Monitoring
Rhode Island	Shellfish safety: Department of Health
Massachusetts	Shellfish safety: Division of Marine Fisheries Towns conduct rainfall monitoring
Maryland	Shellfish safety: State Water Quality Unit

## Ideas Moving Forward

- Could monitoring partnerships between municipalities and the state be created or enhanced?
  - Town involvement in testing can prevent closures

# Results: Conservation

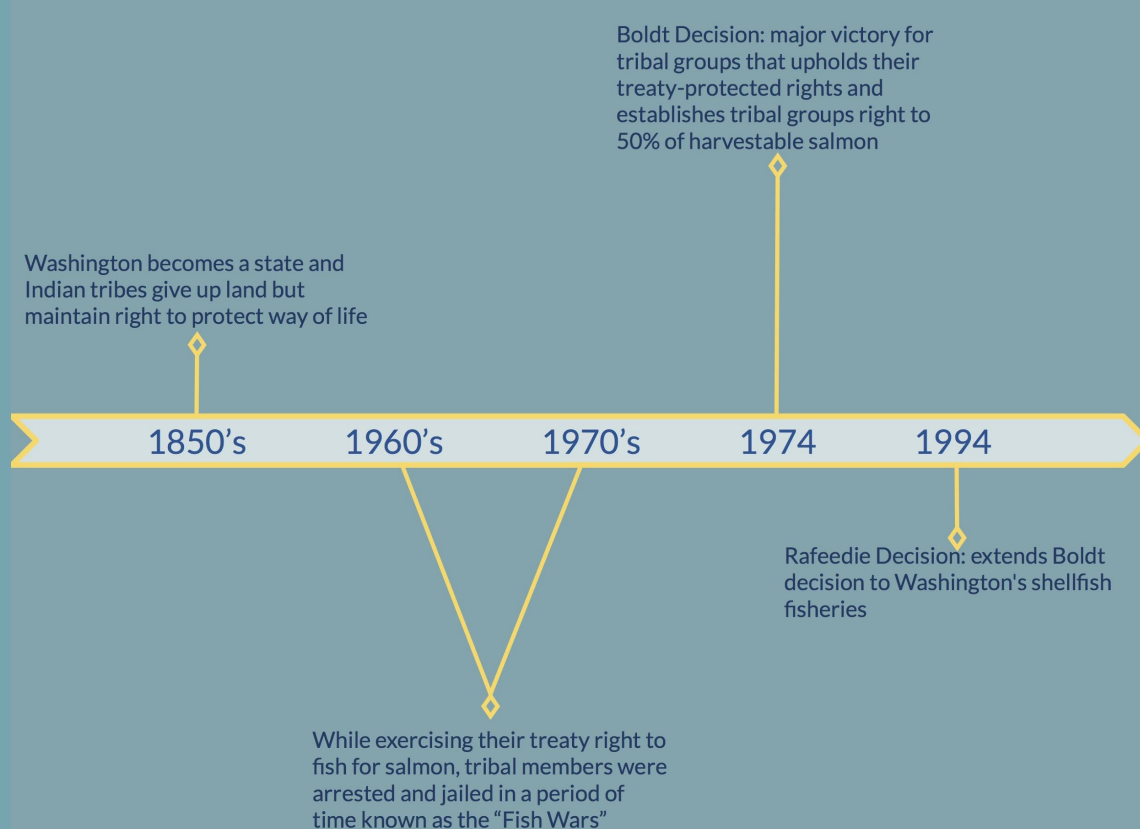
## Findings

	Conservation Projects	Harvesters Participation Requirements
Rhode Island	Shellfish Management Areas and Re-laying of clams	None
Massachusetts	Contaminated relays (by individual towns & state)	None
Maryland	No conservation projects	None

## Ideas Moving Forward

- Continue with conservation projects identified in past meetings by harvesters themselves
- Expand contaminated relay projects

# Washington State Case Study



# Washington State Case Study

## Geoducks



Geoduck

<https://wdfw.wa.gov/species-habitats/species/panopea-generosa>

### Life History

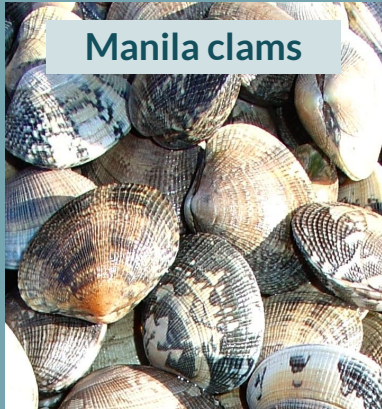
- Average geoduck is 2.07 pounds and can live 160+ years
- Found in soft substrate in both subtidal and intertidal zones

### Tribal Co-management in Washington

- Fishery established in 1970
- Tribal and state ecosystem managers conduct biological surveys and use a deterministic age-structured equilibrium yield model to assess populations
- 50:50 TAC split between tribal groups and state
- State sells quotas in competitive bid process
- Tribal harvesters collect geoducks for commercial, ceremonial, and subsistence purposes

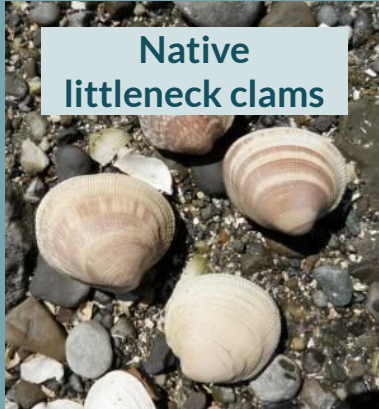
# Washington State Case Study

## Manila clams & Native littleneck clams



Manila clams

<http://www.penncoveshellfish.com/manila-clams>



Native littleneck clams

<https://wdfw.wa.gov/species-habitats/species/leukoma-staminea>

### Life History

- |                                    |                                    |
|------------------------------------|------------------------------------|
| ● <3 inches                        | ● <3.5 inches                      |
| ● Burrow 2-6 inches into substrate | ● Burrow 4-6 inches into substrate |
| ● Upper Intertidal zone            | ● Mid-intertidal zone              |

### Tribal Co-management in Washington

- Surveying done in systematic random line transect protocol
- ~35/131 active beaches survey per year to determine biomass
- 50:50 TAC split between tribal groups and state
- State
  - Recreational fishery (no commercial sale or licence)
  - Sell seaweed and shellfish license for ~ \$18/year
  - Reseeding to maintain recreational fishery
- Tribal groups
  - Harvest for for commercial, ceremonial, and subsistence purposes
  - Reseeding on heavily harvested commercial beaches

# Washington State Case Study

## Takeaways

- When survey protocols are shared between co-managers it is easier to compile and analyze data
- Active communication between co-managers is important for maintaining a healthy fishery
- Pre-season surveying to determine TAC prevents over harvesting
- Enforcement of regulations ensures fisheries long term health



# Overview of Ideas Moving Forward

## Licensing

- Species-Specific Endorsements

## Reporting

- Level of data desired
  - Best way to obtain this data
  - Frequency of reporting
- Tracing data back to towns

## Surveying

- Standardized survey protocols and best practices

## Monitoring

- Could monitoring partnerships between municipalities and the state be created or enhanced?
  - Town involvement in testing can prevent closures

## Conservation

- Continue with conservation projects identified in past meetings by harvesters themselves
- Expand contaminated relay projects