

Oyster Culture & Water Quality
Workshop
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Summary

- Types of oysters and their fisheries
- History of oyster farming (Romans & RI)
- Oyster life cycle & Spat collection
- Various farming techniques
 - Nursery systems
 - Growout systems
- Site selection and water quality concerns
- Hatcheries for seed (for established farming areas)
- Marketing, processing, public health & HACCP

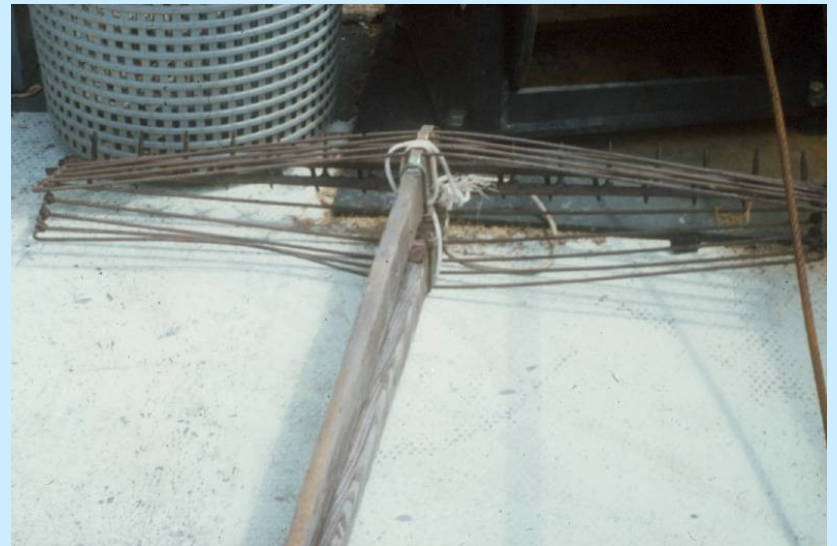
Mangrove oysters



Reef-building Oysters



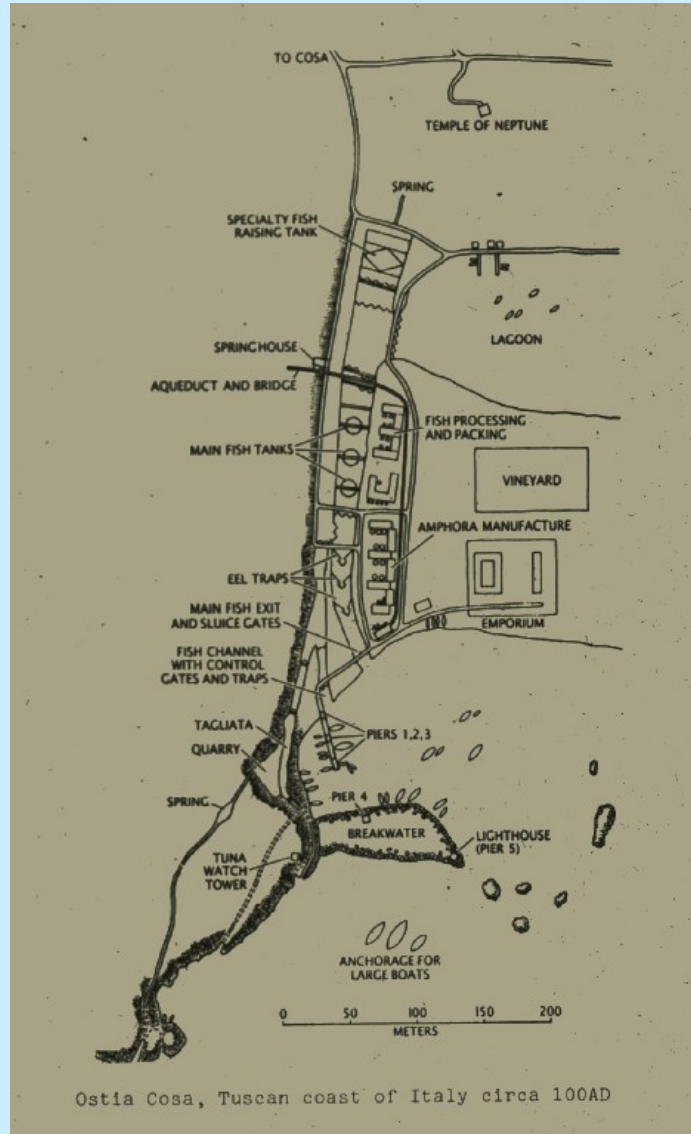
Oyster Fishery



New Jersey Oyster Boats



Oyster History 100AD



RI Oyster History



Providence Shucking Houses 1910



Oyster Life Cycle

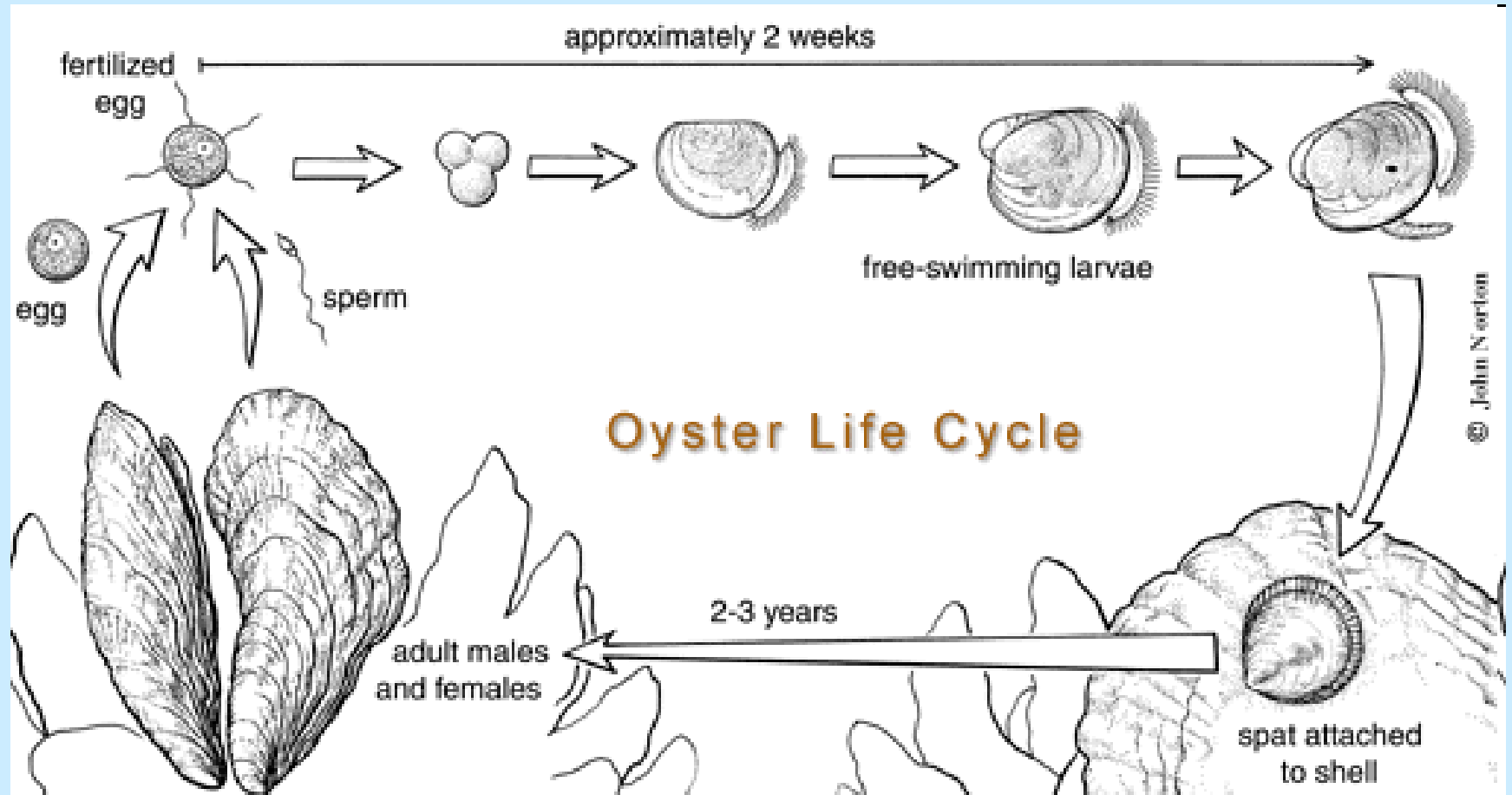
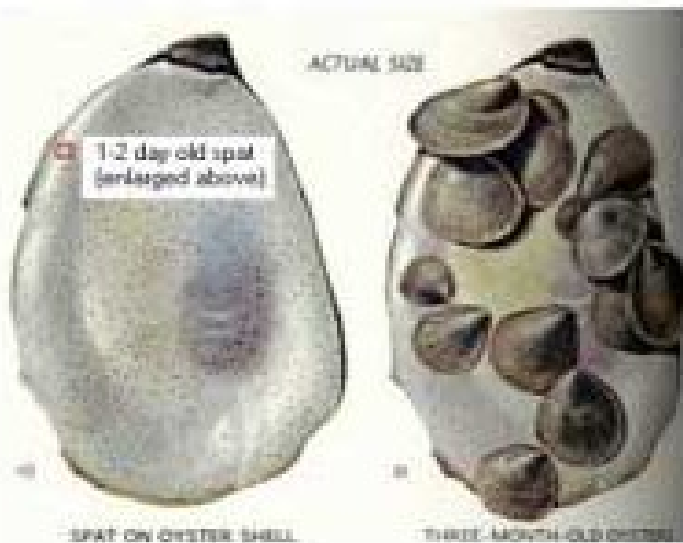
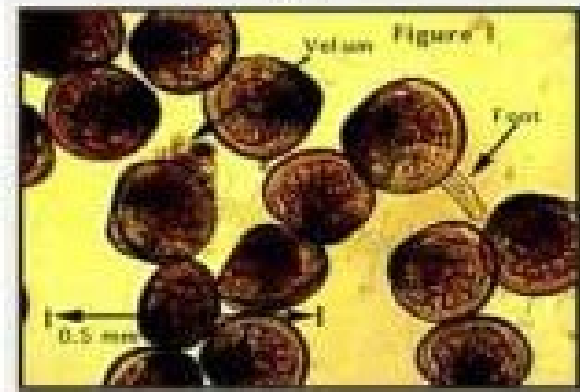
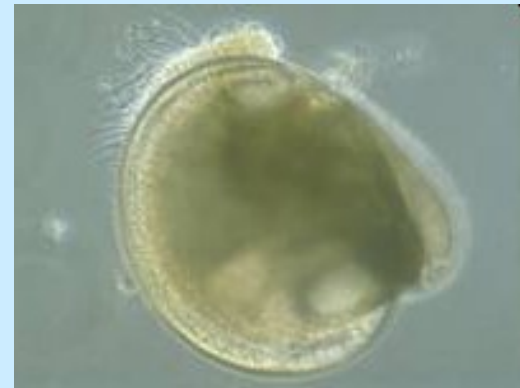


Diagram from Maryland Sea Grant



Oyster Life Cycle

Sampling for veligers



Test collectors

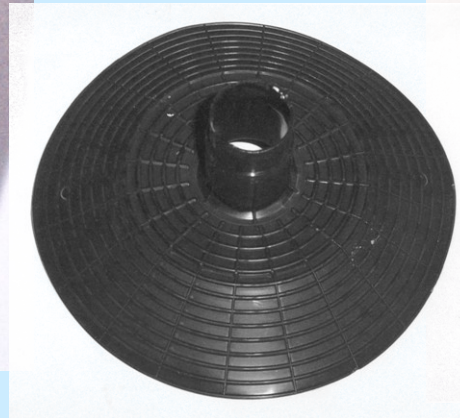
- Set in water for defined period of time
- Monitor appearance of spat and fouling
- Note peak period of spatfall
- Used to inform best time to put production collectors into water



English roof tile spat collectors



Chinese hat spat collectors



Sydney Rock Oyster Spat



Philippine spat collection



Philippine spat collectors



Banjul Area Wetlands



Dagupan City Estuary, Philippines



Estuary w/ Polyculture



Philippine spat set



Spat collectors & growout



Culling for nursery culture



Nursery systems



Pearl Nets -- nursery

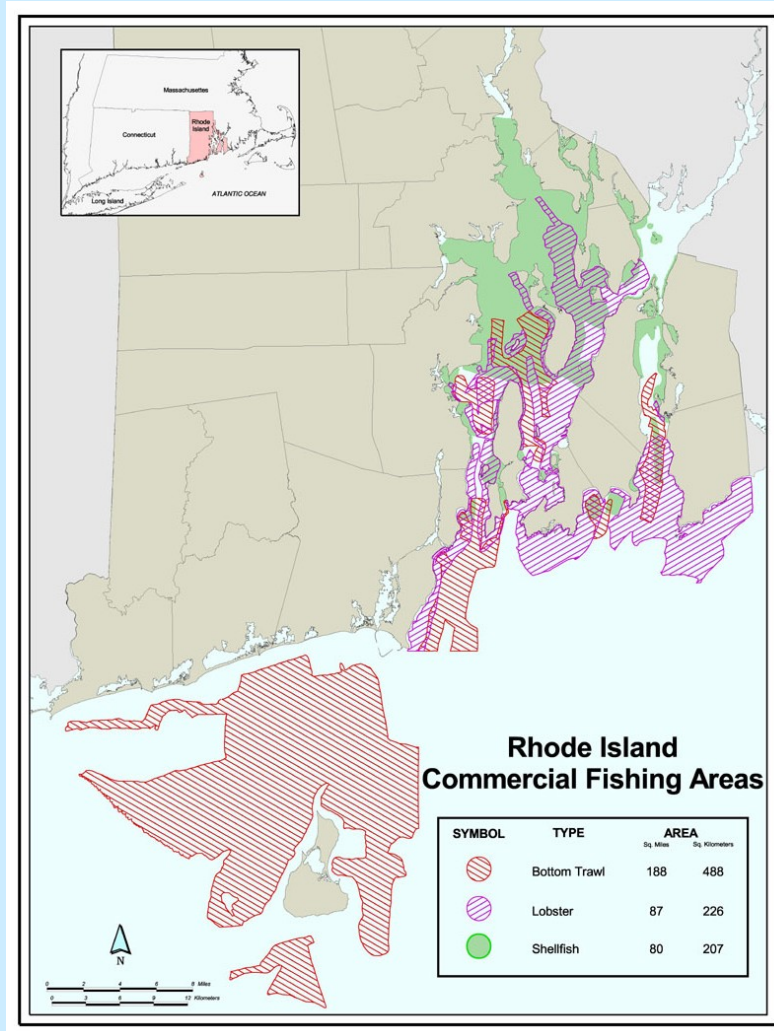


Nursery to growout

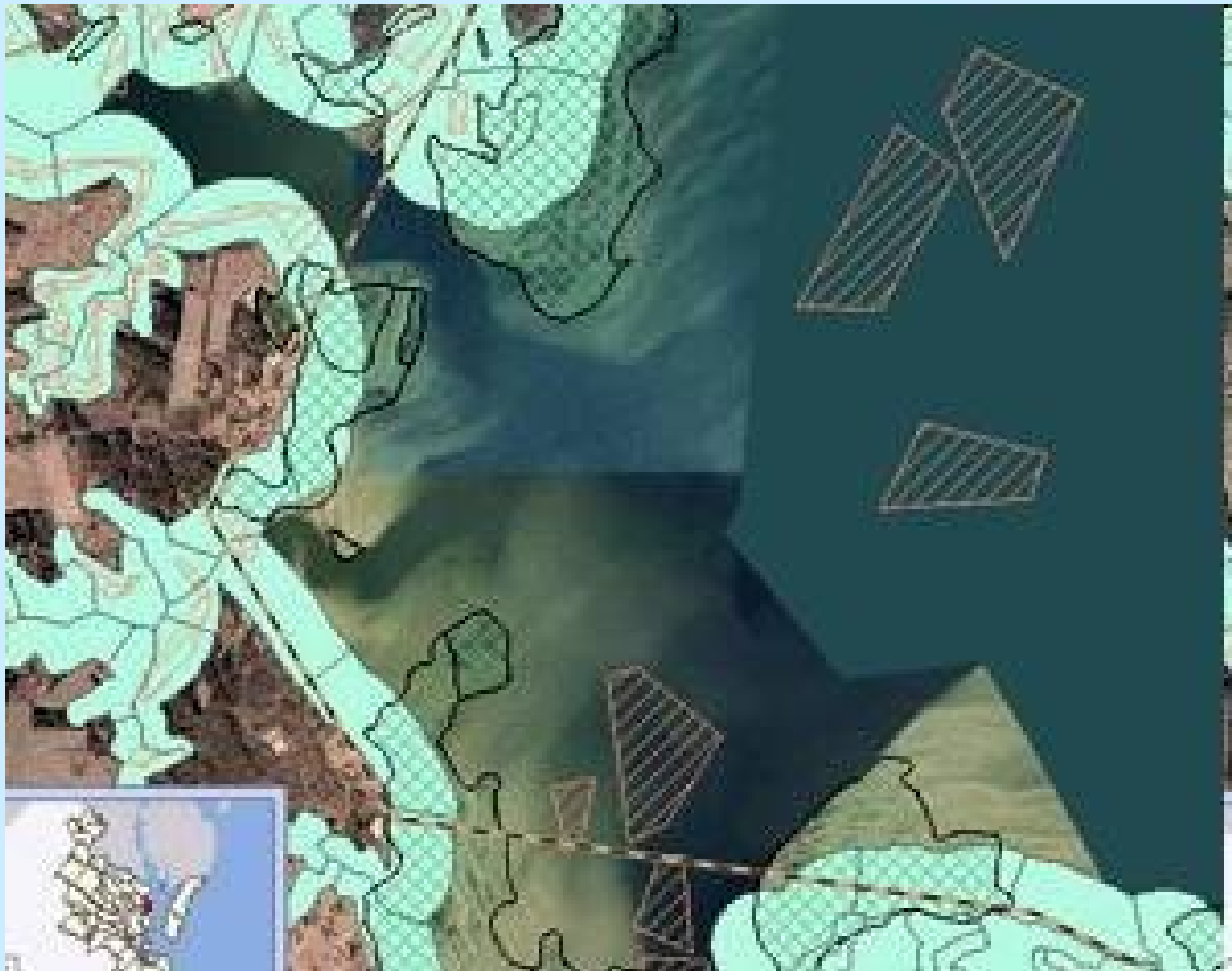


Growout Site Selection

Commercial Fishing areas of RI



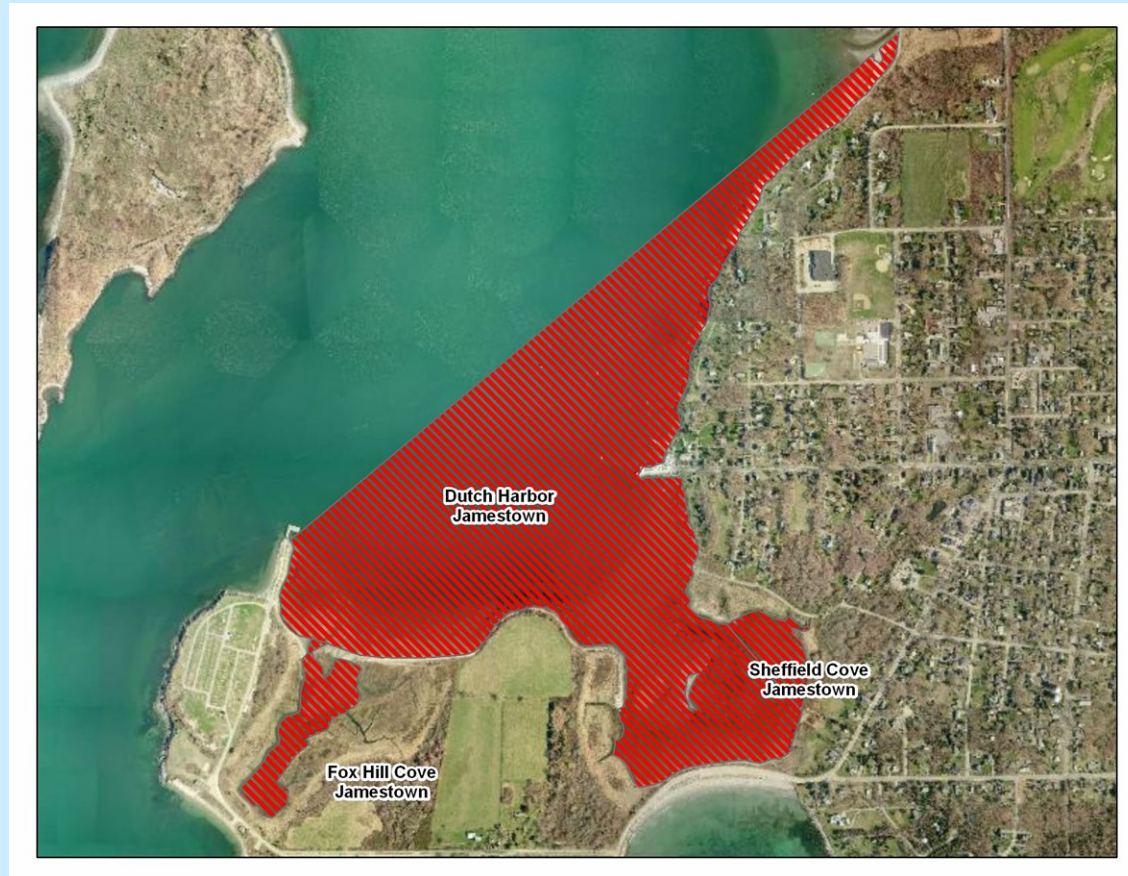
GIS mapping of oyster lease sites in Virginia



Water quality monitoring

- Compliance with EU Standards (http://ec.europa.eu/food/international/trade/im_cond_fish_en.pdf)
- Compliance with US Standards (<http://www.issc.org/>)
- Water quality generally based on total coliform or fecal coliform standard (USA TC standard is 70 MPN/100mL; FC = 14MPN/100mL). Multiple tube fermentation technique standard in US; Filtration method okay for EU)
- Coliform data difficult to interpret in tropics (exhibit caution when using)
- Water quality standards part of comprehensive chain from the estuary to consumer's plate
- Water quality bounds in cooperation with enforcement authorities

Shellfishing closures



<http://www.dem.ri.gov/maps/mapfile/shellfsh.pdf>

Growout -- Bottom Culture



Growout systems – bottom cages



Growout Systems – bottom bags



Growout systems – transient gear



Fouling of bags with colonial ascidians



Bottom gear tending



Work boats



Longlines



Longlines



Lantern nets



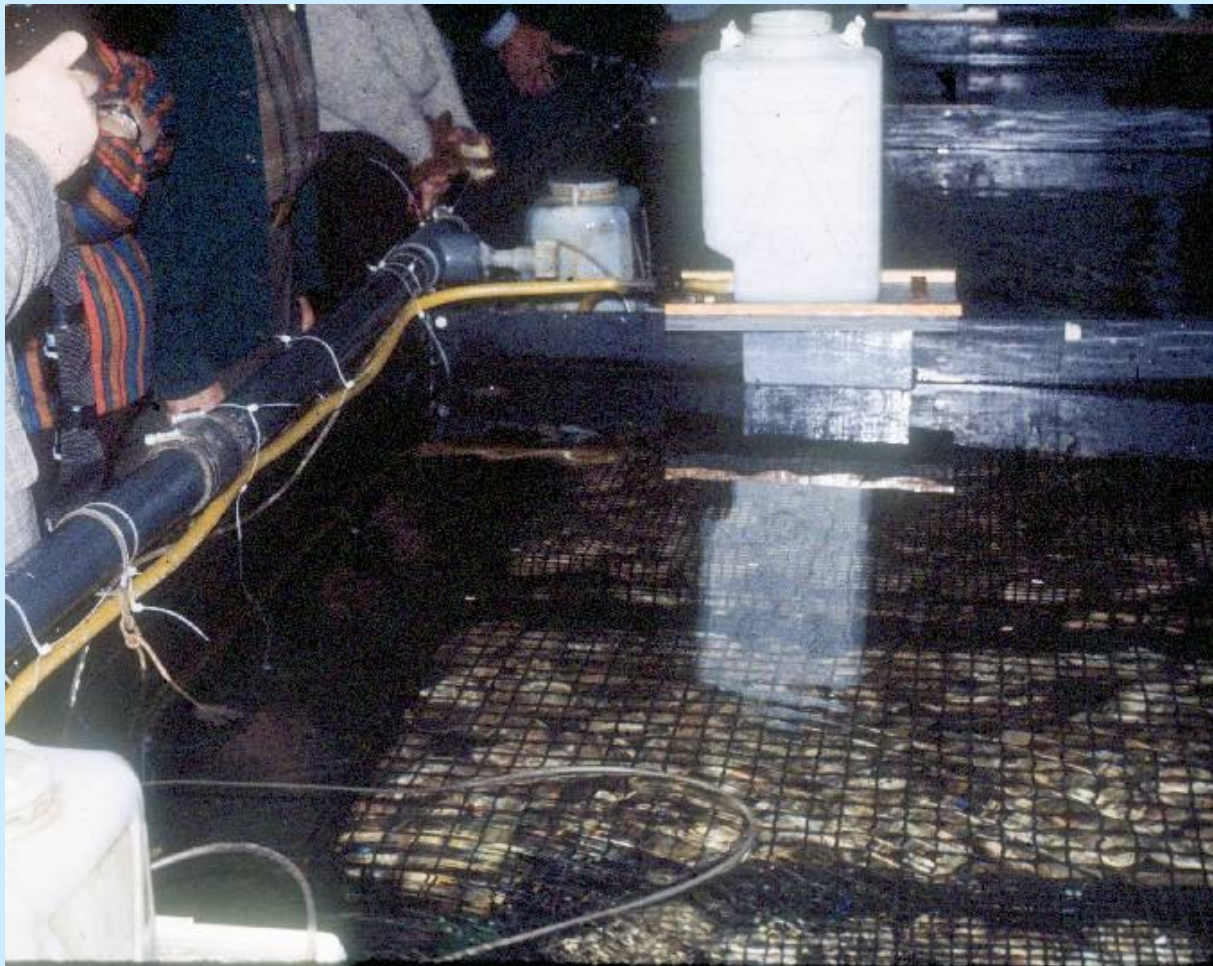
Filling Lantern net



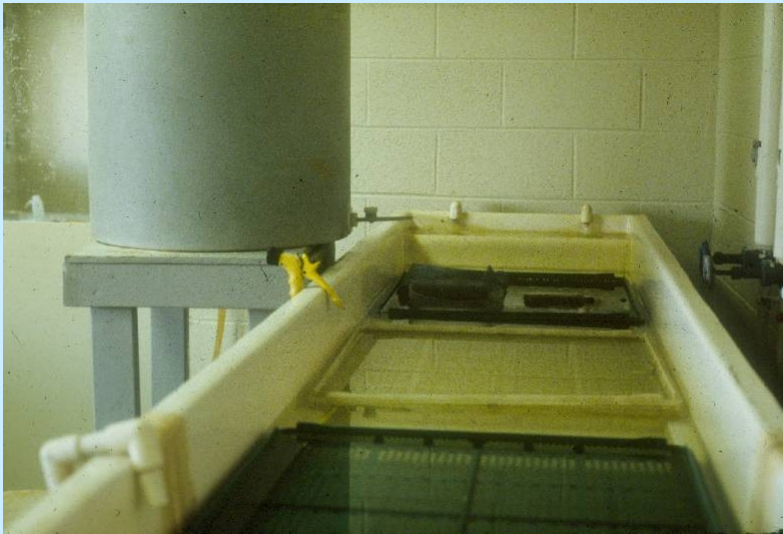
Hatchery – phytoplankton tanks



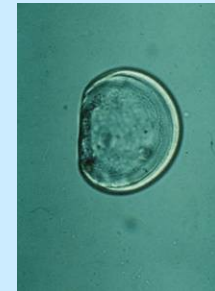
Broodstock conditioning



Spawning induction



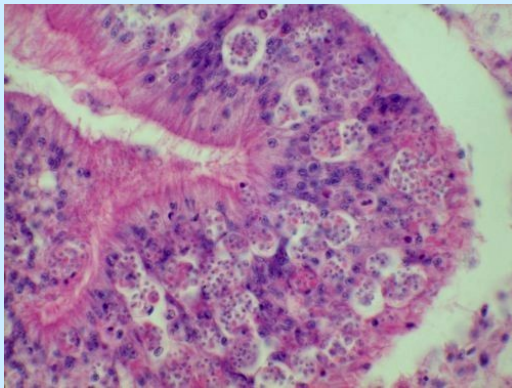
Larval rearing



Managing larvae



Disease monitoring



Hygiene of oyster meats

- Protocols established by EU & ISSC in US
- Minimization of bacterial propagation from farm to plate
- Temperature control is critical!
- HACCP concept = producers & marketers in develop a plan based upon controlling contamination at critical control points; gov't then approves, implements according to EU or ISSC standards & enforces

Marketing



Marketing



Matunuck
• OYSTER BAR •

629 Succotash Road
• East Matunuck, RI •

 Hours: Monday - Thursday: 11:30 am - 9 pm
Friday & Saturday: 11:30 am - 9:30 pm
Sunday: 11:30 am - 9 pm

629 Succotash Road • South Kingstown, RI • 401-785-4202

<http://www.rhodyoysters.com/>

Marketing



Depuration (required by EU)



<http://www.americanmussel.com/>

Finishing ---Claire's of France



Thank You for Your Attention

