Clam (Quahog) Farming

Class Outline
- Overview of grow-out – Terminology
- Planting
  - Seed Sizes
  - Site Preparation
  - Planting Densities & Methods
- Netting
- Florida Bags
- Net Maintenance
- Fouling
- Tears & Repairs
- Risk of Ice
- Harvest
  - Methods
  - Throwback Maintenance
- GUESTS

Field Grow-Out
BMP 1-3  LAYOUT AND PLACEMENT OF NETS
- Prepare site for field planting seed (n) from nursery
- Seed (v) and net (v) runs
- Maintain nets (tears, fouling) for at least one year, until animals are at least 1” long
- Harvest run ideally when at least 50% of crop is legal
  - Keep in mind, though, that larger quahogs lose value
  - Work run methodically
- Replant undersized quahogs in ‘throwback’ run
Seed Size

- For quahogs, ideal planting at 12+ mm
  - Can plant smaller with appropriate mesh size
  - Larger seed are less vulnerable to predation
    - Thicker shell
- For soft shell clams, ideal planting at 12+ mm
  - Planting soft shell clam seed under 6-7 mm is risky as they are highly mobile
  - Larger seed are less vulnerable to predation
    - Buried deeper

Site Preparation: Trenching

BMP 2.5 MANAGEMENT OF NETTING

- Determine the number and size of runs you intend to plant
  - Runs are often 50’ or 100’ long and 12’ wide
- Lay out first run, using tape measure
  - Straight line will help
- Dig trench along one long edge
  - Depth varies, but at least 3’
**Site Preparation: Raking**

- Rake the entire area clean
  - Remove any and all predators!
  - Also remove rocks, large clams, etc.
  - Makes later harvest easier
  - Seems to make the substrate easier to dig into

**Getting the Net Started**

- Open up the net and lay ABOUT 6-12" of it across the trench
- Lay rebar down over net, into the trench
- Pin the net down along that one edge
- Spread out net and place remaining rebar along BUT OUTSIDE the other three edges
Pinning Down One Edge

- 3/8" or ½" rebar is recommended
- Staples or u-hooks work better if ridged
- Be sure to cross pin with staples

U-hooks (from above)
Folding Back the Net
- Fold the net back like the page of a book
- The laid out rebar defines the area to be seeded as well as the lines to be trenched
- Trench the remaining 3 edges

Planting Methods
- Try to keep seed spread out evenly
- Stay in from edges about 1’
  - Seed will move themselves around
- Only plant if you have time to cover the seed!
Seeding

Planting Densities

- Lower densities improve growth and can lower disease risk.
- Recommended upper limit of under 75 per square foot.
- Lower limit?

Netting

- Larger mesh will foul less.
- Many farmers will only use mesh that is smaller than the seed.
- Usually comes in sheets that are 14’ across.
**Netting Styles**

- Pulled flat
- Held up with spreaders
- Floats under net

**Florida Bags**

- Very common method in Florida
  - Loaded with 850 seed/bag
  - Pinned down on farm bed
  - Hauled when ready for harvest
  - Not common in MA

**Net Maintenance**

- Fouling/Sand
  - Clean and/or replace
- Tears & Repairs
  - Boat strikes
  - Repairs ASAP
- Risk of Ice
  - Despite risk, many feel that the risk of removing nets before ice is too great
  - Predatory birds come through and can feed heavily upon open beds
**Fouling**

- Brush the nets
- Helps to have some water over the nets when doing this
- NO chemical treatment
- Be aware of other users
  - Brushing releases silt
- Stay ahead of fouling
  - Can go out of control quickly

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**Try to Keep the Mesh as Open as Possible**

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**Threat of Ice**

- Ice can freeze to nets and pull them out
- Need to replace nets as soon as threat of ice is gone
- Retrieve all lost nets!
  - Loose gear entraps
  - Loose gear is a bad symbol for the industry
Harvest

- Bull raking and hand scratching are common methods
  - Bull raking requires water over run
  - Narrow window on tidal range
  - Hand scratching is typically done dry
- Be methodical! Easy to lose track of where you ended

Hydraulic Harvester

Harvest: Sorting Catch
Throwbacks

- Replant like-sized seed together
- Monitor growth and survival
- Be cautious digging runs with a high rate of throwbacks in the winter months as the seed may not dig in

Cultivating Surf Clams (aka “Butter” Clams)

Current Aquaculture of Shellfish

- Why explore other options?
What are the options?

- Razor clams?
  - Early NRAC projects

- Blood Arks (clams)?
  - Very basic pilot testing done so far

- Bay Scallops?
  - Historical projects
  - Current project

Surf Clams!

Wild – legal harvest size
Aquaculture – legal harvest size

4 sites – variety of conditions

Intertidal Sites
Subtidal Sites
Active surf clam seed...

Why they need containment...
Survival
• Survival (as of Nov/Dec) ranged:
  • Bottom plant, 0% (mounded or torn net) – 75%
  • Oyster bags, 0% (high intertidal heat) – 99%
  • FL bags, 65% (damaged) – 97%
  • Winter kill?

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Soft Shell Clam Farming

Peter Burns
Boat Meadow Sea Farm
Eastham, MA

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31 gal. flower pots
500 softshell clams/pot
1/6" mesh over top
“1” after couple months
Size ready to plant under net
Don’t move around as much
Postscript:

- Clams grew out nicely to 2.5" near end of second Summer
  - But... during August heat they started to die
- If... clams are not naturally occurring at a site, may be a reason.
  - Try a small batch, low investment, to try out.
- This Summer Peter will be trying some hard shell clams for the first time in a long time.
  - He notes, "they used to be a good crop but the prices were low."
- "With improved prices it make sense to do littleneck and hopefully DMF does not put Vibrio reg on little necks."

Next Week

- Predators, Pests, and Diseases
- Guest Speaker
  - Roxanna Smolowitz
    Veterinary Pathologist
    Roger Williams University

Stand up and STRETCH

GROWING QUAHOGS

Or, making money with your hard-shelled little friends
INTRODUCTION

- A general introduction to quahog growing
- Not every possible way, but the most common method
- Take notes

WHY GROW QUAHOGS

- Diversifying
- Spreading the risk

AQUACULTURE

- The new reality
- NGOs and other well-meaning idiots
OYSTERS, OYSTERS EVERYWHERE
Being pushed as an answer to everything; water quality (nitrogen mitigation, oceanic acidity, you name it).
The result? Tens of millions of oysters flooding the market...
And the price falls....

GROWING COST
Seed
Mortality
Housing
Labor

If your seed cost after mortality is 8-10 cents each, the same cost for housing (bags, racks, etc.) what have you. About the same and another 10-20 cents labor. You have something like 25-30 cents into each oyster.

If meat oysters are selling for around a quarter each?

WHY DIVERSIFY?
- Diseases can and will wipe out single species operations.
- Markets and prices change, generally not for the better.
- Seed and seed size availability changes all the time.
- Spread your sales... and income... over the year.
**Fundamentals of Shellfish Farming**

Clam field planting & growout

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**TERMINOLOGY**

- **Run**
- **Density**
- **Clam Sizes**

**WHAT’S A CLAM RUN?**

- Where you put the seed, covered with net
- Generally net width minus a foot or two
- Lengths vary, current and wave action tell you the best length
- Net is held down with rebars and U-hooks

**DENSITY?**

- How many clam seed per square foot.
- 50 square foot is a good starting point
- Cheat: calculate using a ten foot wide ‘nominal’ size.
Seed is sold as 'R-something', where 'something' is the mesh size that retains the seed; it does not fall through the mesh.

Field Plants: generally R-8 (millimeters) or larger.

Clam sizes you sell in ascending order of size: Pasta clams, Count necks, littlenecks, Top Necks, Cherrystones and Quahogs.

## CLAM SIZES?

### SITING AND LAYOUT

- Good conditions
- Bad conditions
- Run size and direction

### RUN PREP

- Why you do it
- What you need to do
- A few tricks to make things easier

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### NETS
- What they are for
- Size versus mud
- Net handling

### REBAR AND U-HOOKS
- Sizing rebar and U-hooks
- Galv or plain
- Spacing
- Wrapping

### PLANTING
- The funny thing about quahog seed
- Density revisited
COVERING
The planting process continues
- Working with the wind
- When you run out of time

MAINTAINING
To maintain...or not
- Weed
- Silt and sand
- Holes and patching them

PULLING THE NETS
- When to remove nets
- How to do it, easy or hard
- Disposing of them
WHEN TO DIG
- Percentages

HOW TO DIG
- Rake selection
- Be methodical
- Be thorough
- Marking
- Handling

YOUR FRIEND THE SPEED RACK
- On the boat versus at the wholesaler
- Mortality and handling
- Speed rack setup
**THROWBACKS**
They won't all be ready

- Percentages, again
- Throwback run

**CLEANUP**
Those last few

- Pulling hooks and rebar
- Why galv steel is your friend
- Raking the last few

**GETTING READY FOR THE NEXT TIME**
And there will be a next time

- Fun with a crab rake and scratcher