
Oyster Health on Your Farm
Gulf Coast Grown
MISSISSIPPI
LOUISIANA
ALABAMA
FLORIDA
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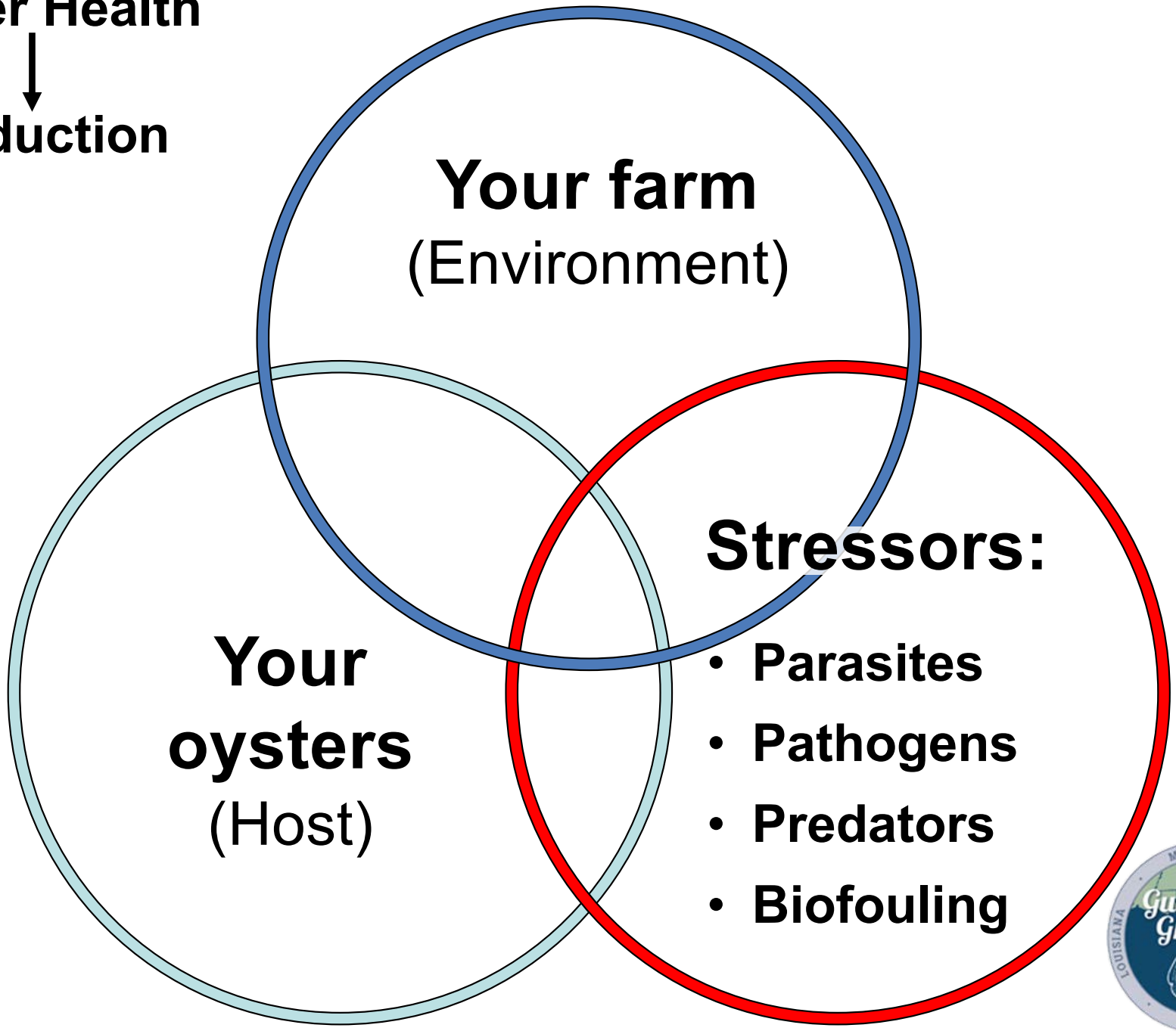
Why consider the health of your oysters?

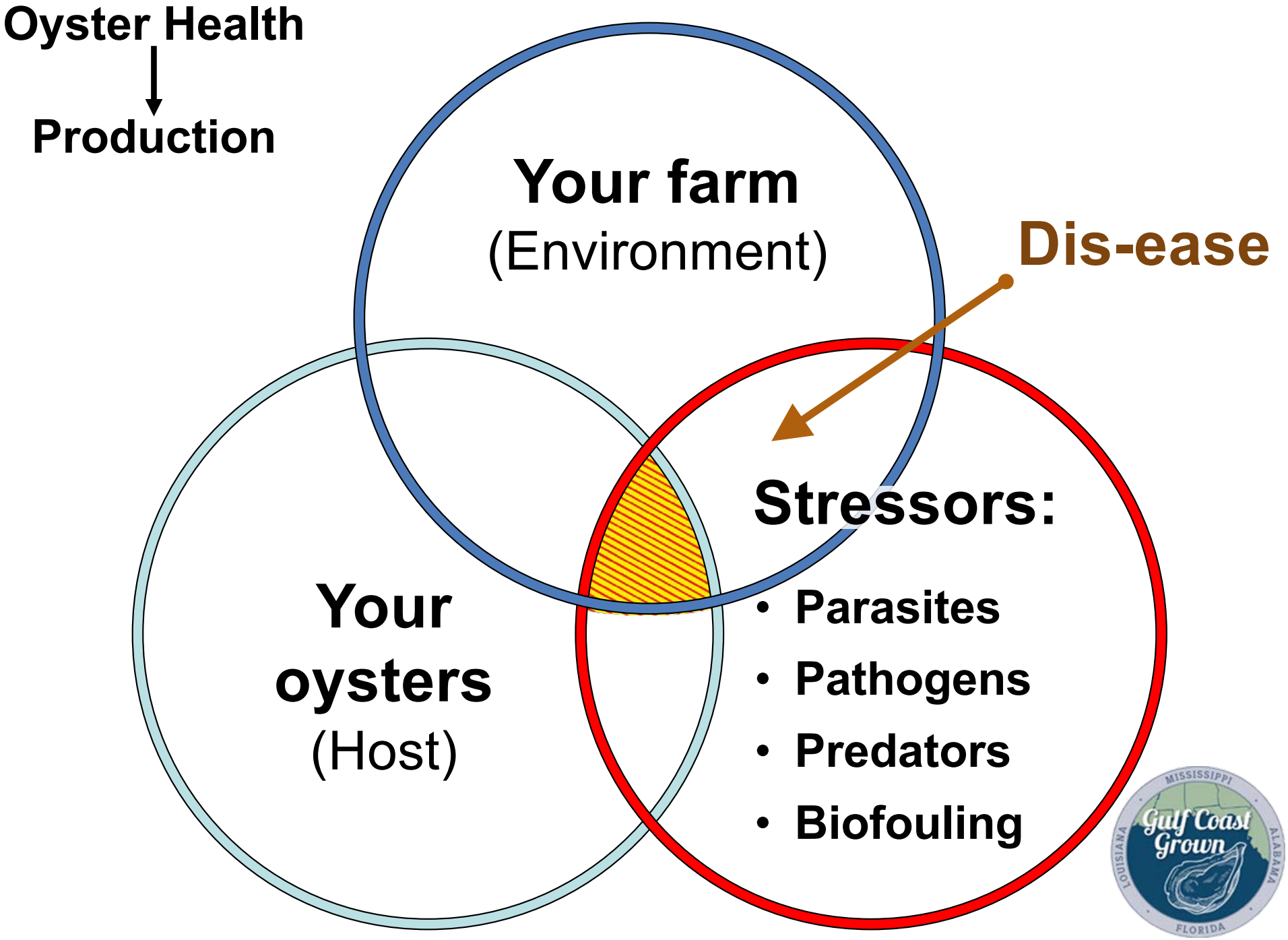
1. Environmental stressors: water quality, parasites and disease agents → oyster health & production
2. Health issues can affect growth and product quality
3. You can visually observe the general condition of your oysters that, in turn, relates to oyster health
4. Get to know your oysters better

Oyster Health

↓

Production




Oyster Health
Production
Your farm
(Environment)
Dis-ease
Stressors:
• Parasites
• Pathogens
• Predators
• Biofouling
Your
oysters
(Host)
MISSISSIPPI
LOUISIANA
ALABAMA
FLORIDA
Gulf Coast
Grown

Visual Condition Index (1.0 - 5.0)

(You can see this)

Visual ranking based on:

- filling out cup shell
- plumpness
- meat “creaminess”

Standard Condition Index:

$$\frac{\text{Dry meat weight (g)} * 100}{\text{Internal cavity volume (cm}^3\text{)}}$$

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(You can see this)

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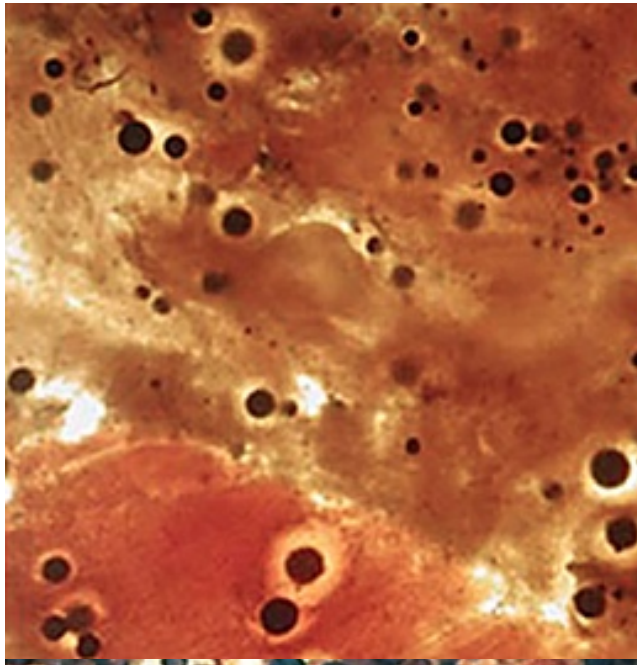
Standard Condition Index:

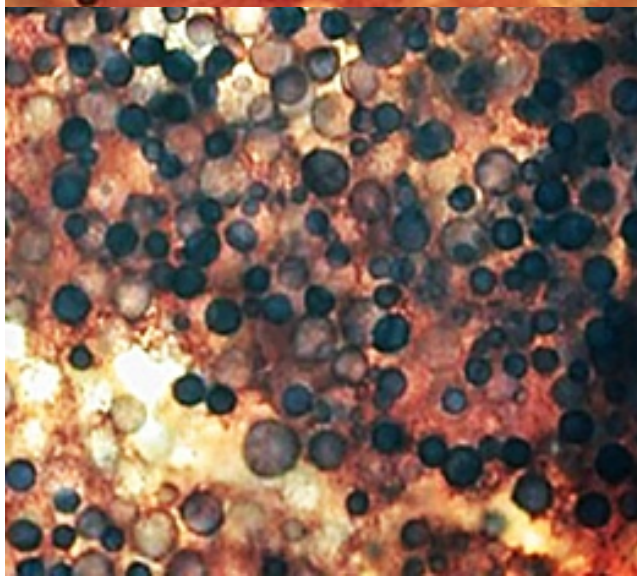
$$\frac{\text{Dry meat weight (g)} * 100}{\text{Internal cavity volume (cm}^3\text{)}}$$

Introducing the players:

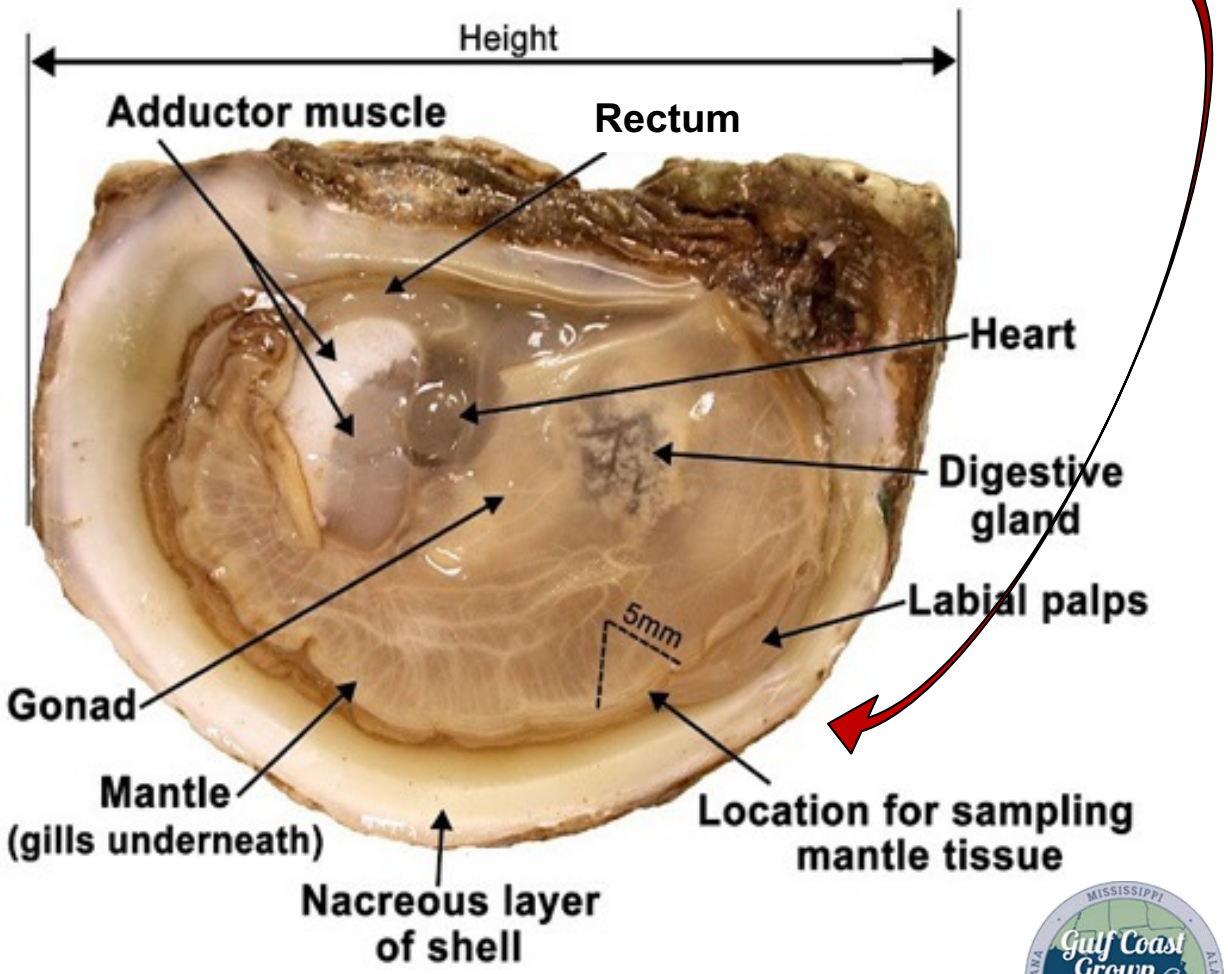
Perkinsus marinus (Dermo)

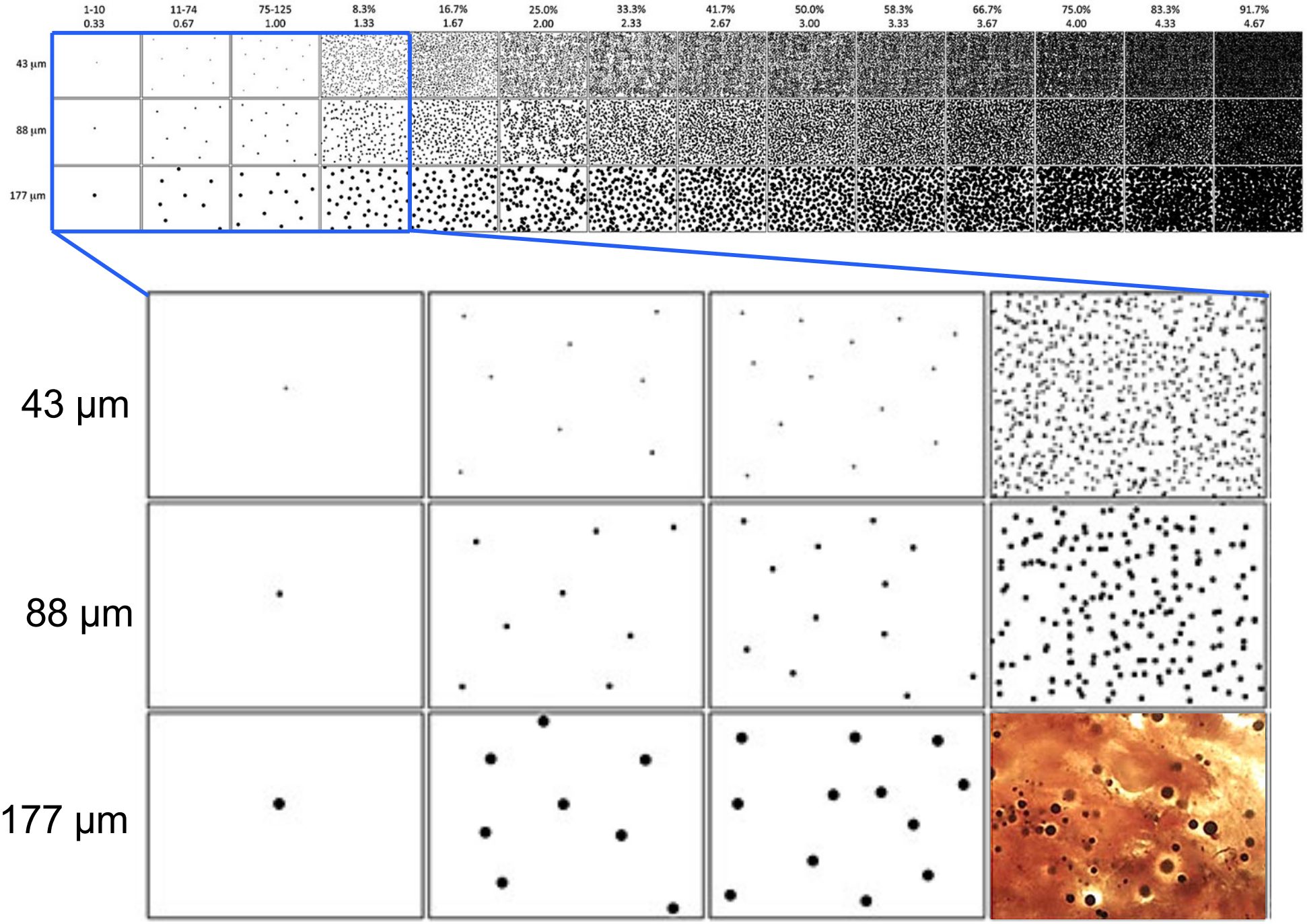
Microscopic – you can't see it with naked eye





Mantle tissue sampling for Dermo testing:




1-10
0.33
11-74
0.67
75-125
1.00
8.3%
1.33
16.7%
1.67
25.0%
2.00
33.3%
2.33
41.7%
2.67
50.0%
3.00
58.3%
3.33
66.7%
3.67
75.0%
4.00
83.3%
4.33
91.7%
4.67
43 µm
88 µm
177 µm
43 µm
88 µm
177 µm
Count, % area:
Severity score:
1-10
0.33
11-74
0.67
75-125
1.00
8.3%
1.33

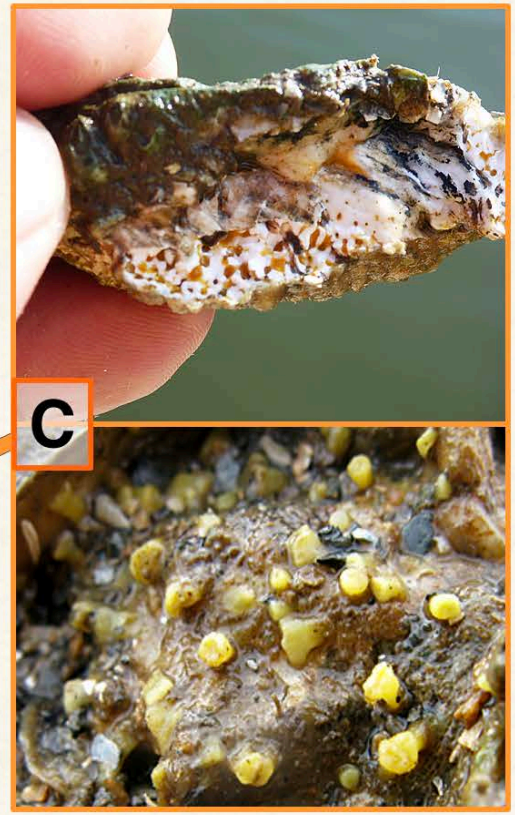
Introducing the players:

Shell-boring Parasites

(you can see these, most of the time)

Worms

Polydora websteri



Clams

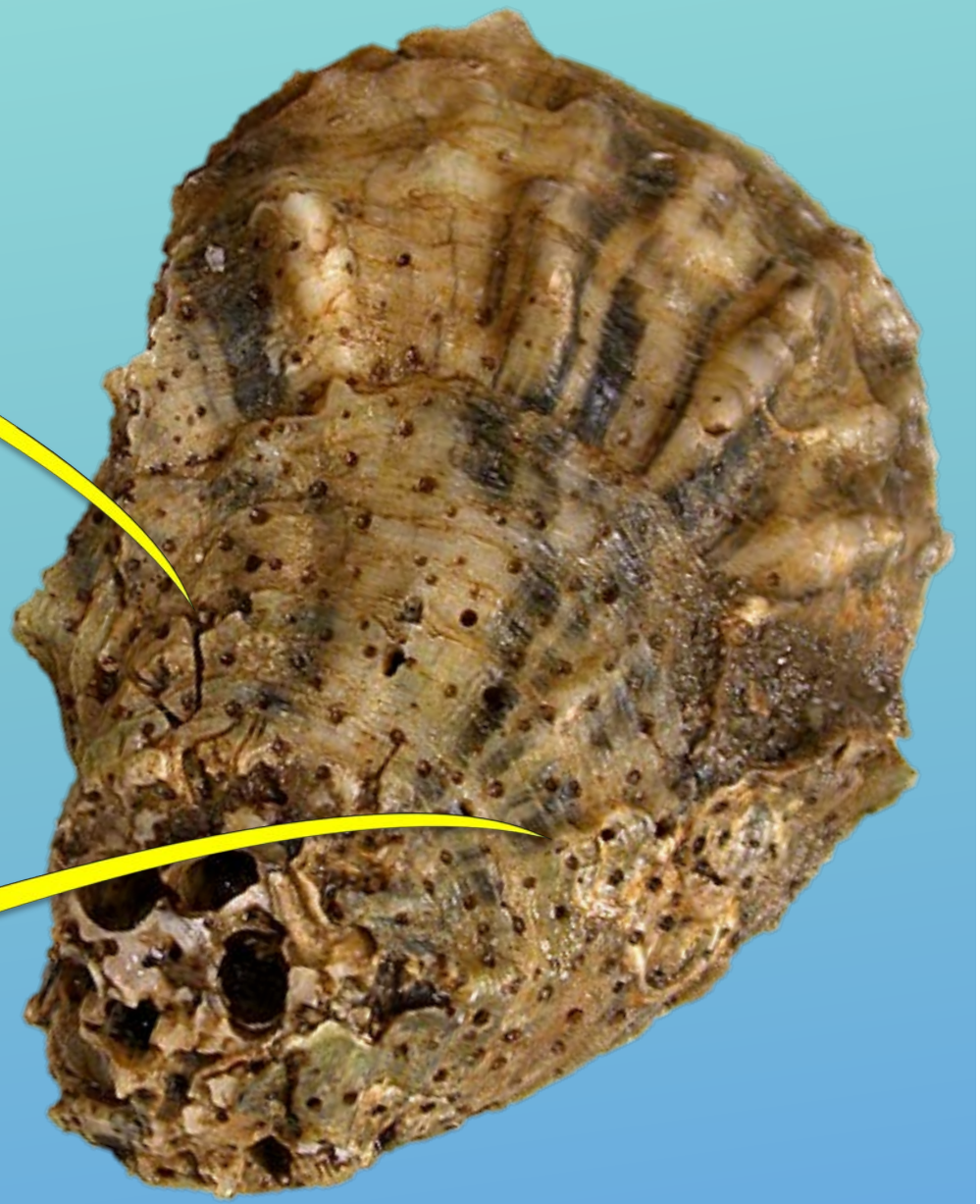
Diplothyra smithii

Sponge

Cliona celata

Boring sponge

Cliona spp.

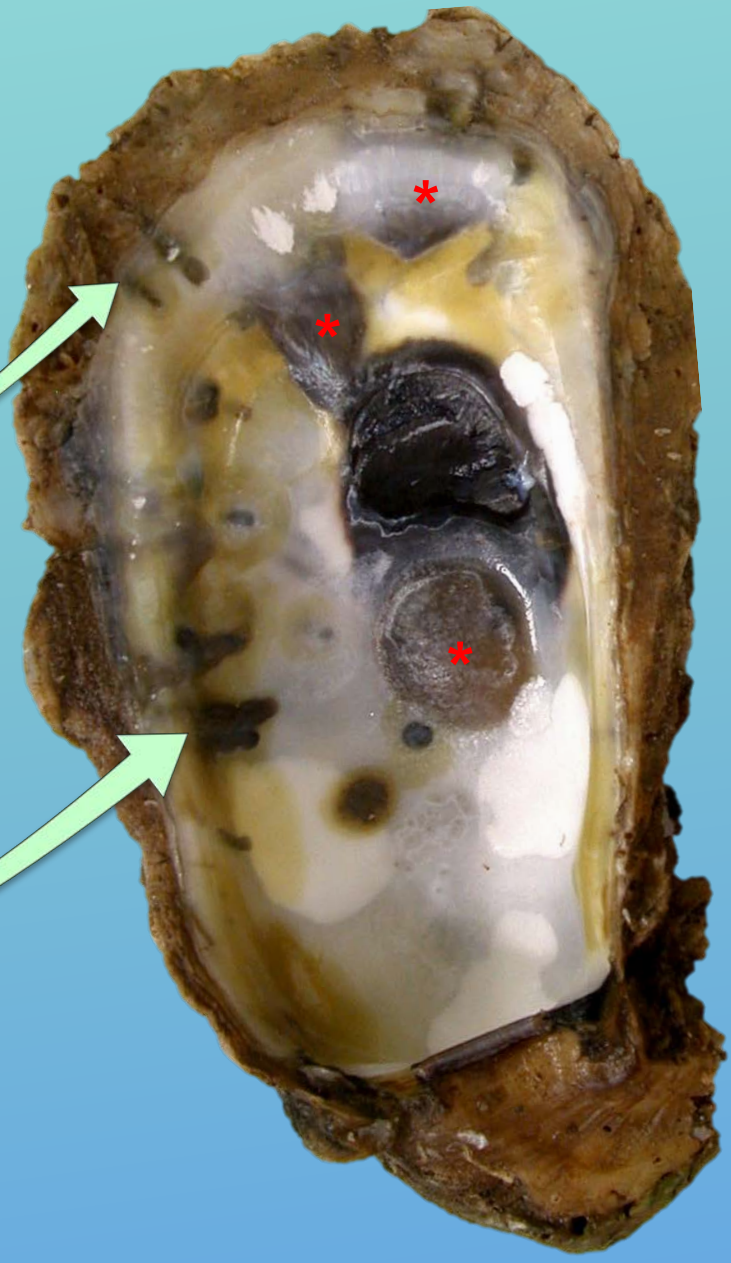


Boring clams

Diplothyra smithii

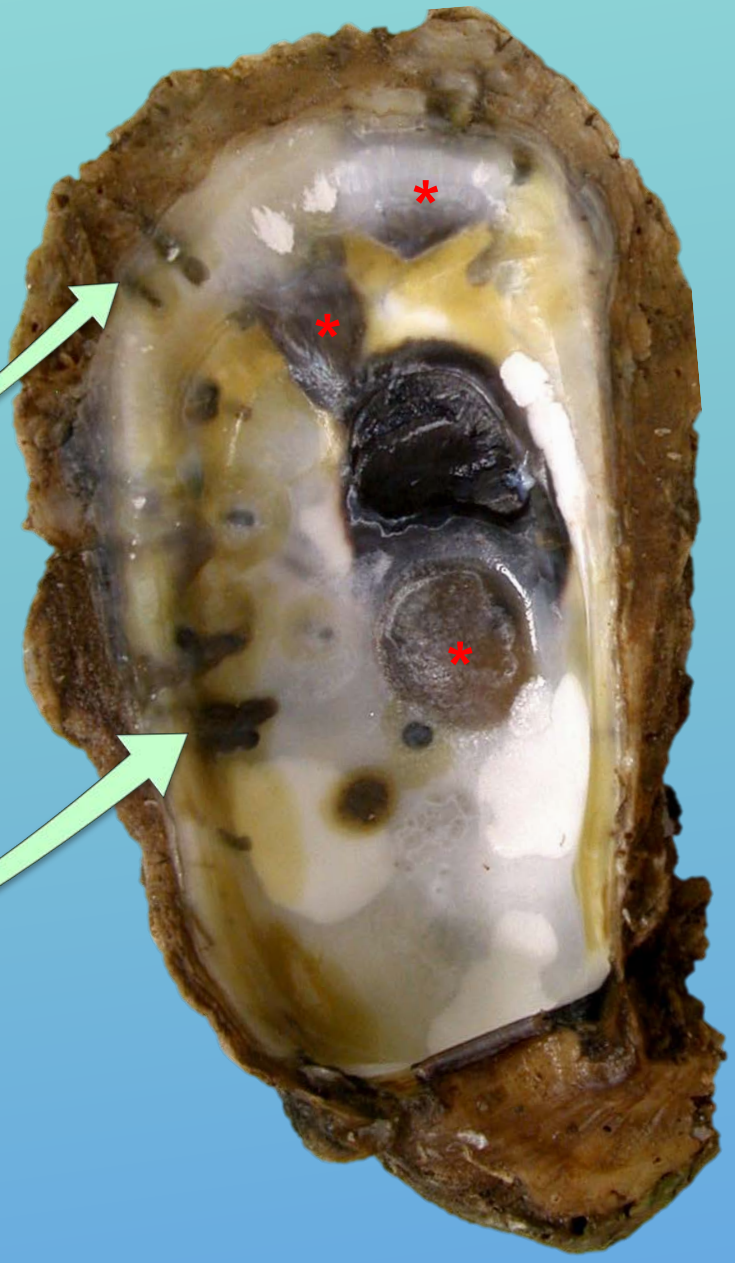
Boring worms

Polydora websteri



Boring worms

Polydora websteri



Boring worms

Polydora websteri

Worms *(Polydora)*

Clams *(Diplothyra)*

Sponge *(Cliona)*

Take-home thoughts: Dermo

- Dermo disease is present in most oyster populations, wild and off-bottom culture; diploids and triploids vulnerable
- Dermo prevalence and severity influenced by salinity and temperature
- Dermo prevalence and severity increases with oyster size.
- Dermo can affect oyster growth and meat quality; can cause mortality in in off-bottom aquaculture

Take-home thoughts: Shell Parasites

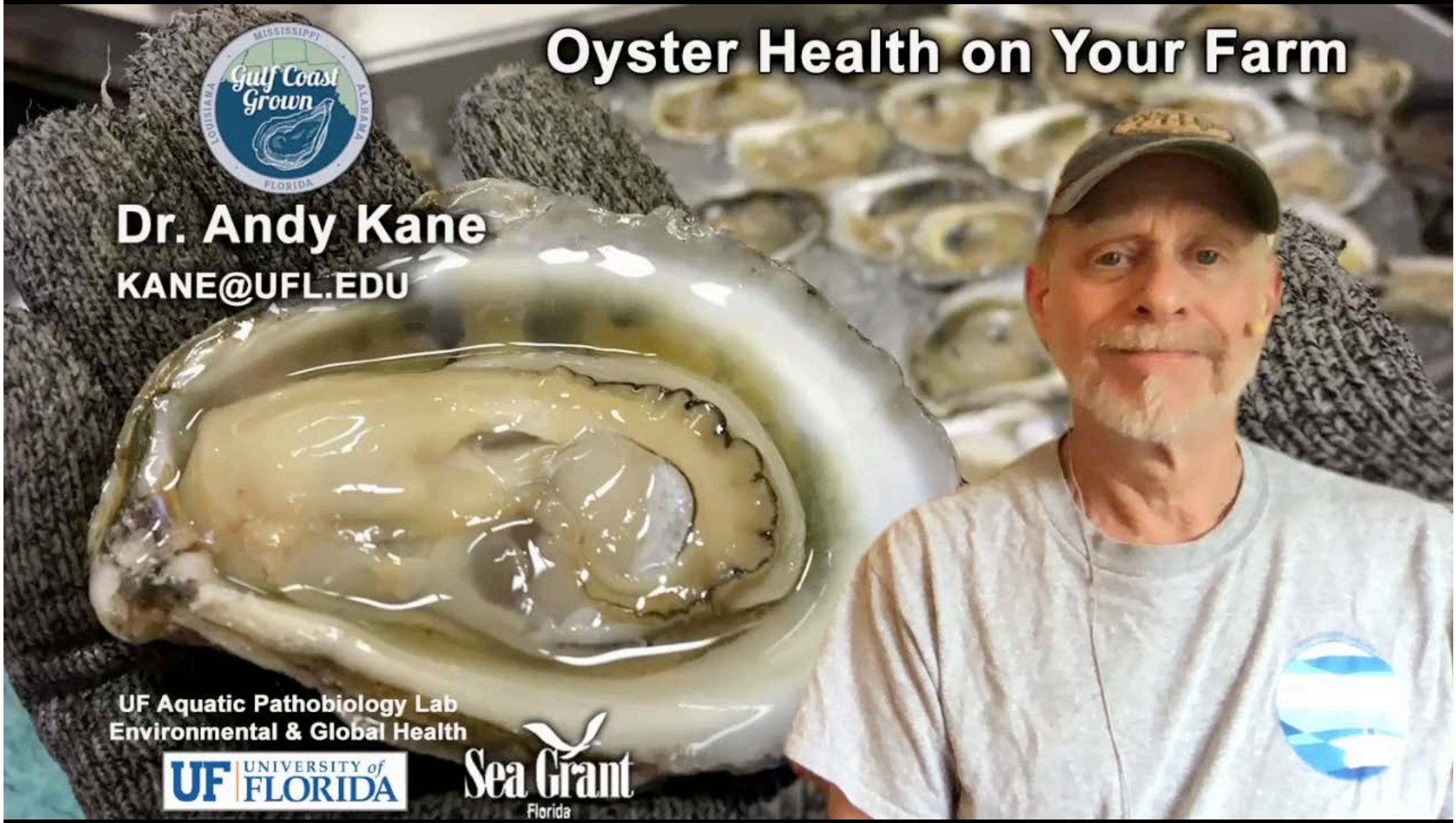
- Worms and sponge impact off-bottom cultured oysters
- Visual observations of shell parasites underestimates actual shell damage
- Extended high salinity conditions are associated with shell parasite presence and severity
- Shell parasite severity increases with oyster size, and diverts oyster energy from growth to shell repair
- Boring shell parasites excavate live oyster shell and weaken it re: shucking; shortened shelf life

Take-home thoughts: General

The more you know about your oysters' health and growth patterns on your farm, the better you can manage, produce and market your product.

Consider being more intentional and consistent about making health observations, and maybe collecting some water quality and oyster growth data to optimize:

- Meat and shell quality
- Timing for drying, grading, harvesting your oysters
- Understanding water quality and seasonality affects on oyster growth, health and mortality on your farm
- Understanding production successes and failures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