

Our Fundamental Challenge

How can I protect my crop from predators
 Yet still maximize flow rate/stocking
 density
 While maintaining millions of live animals
 In durable, inexpensive containers that
 are easy to maintain ?

Your Challenge

- Produce shellfish without repeating the mistakes of those who went before you.
- The top "Rookie Mistakes" to watch out for

HELLO
I AM...

NEW

Mistakes are a part of life; you can't avoid them. All you can hope is that they won't be too expensive and that you don't make the same mistake twice.

Lee Iacocca

1) Don't think you know everything

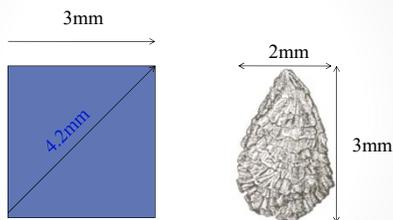
- Get advice
- Volunteer on another farm
- Hire a consultant
- Take Dale's course
- Each of these is cheaper than making a big mistake

2) Don't Let Greed Overcome Common Sense (#1 mistake of new growers)

- Don't buy more seed than you have gear to hold it in or time to maintain
- Overcrowding and fouled gear yields poor growth, thin meats, mortalities



3) Sieve Size ≠ Seed Size



Check before you plant - A close fit is not a good fit

If seed size is too close to mesh size – seed will grow into the mesh



You will probably kill many trying to extract them

4) Start Small make less costly errors

You can learn almost as much by killing a few thousand as you can by killing millions



5) Mother Nature is your partner, but she is not your friend

Waves have incredible power

Ice can do inconceivable damage

Size anchors, ropes etc. for the worst case

Use stainless fasteners, pinch pennies elsewhere



6) Always start with the largest seed you can afford

- You will have market size product sooner
- Small seed can be tricky to work with
- Large seed is more expensive, but seed will never be one of your top expenses



7) Ordering Seed

- Order early (Dec – Jan)
- Send deposit in February
- Order from several hatcheries
- Sell surplus seed
 - Be aware of the health inspection requirement



8a) Flow > Grow > Dough

- Flow rate important for dense populations
 $Seston\ flux = current \times concentration$
- Concentration and composition important
- If food is limiting
 - growth slows
 - condition index suffers
 - more susceptible to diseases
 - more variation in size
 - longer to harvest size (more sieving, more gear, more work)
- Optimum stocking density determined by size, species, food concentration and flow

8b) Starving oysters don't grow

90% of the flow goes around a clean 1/2" mesh bag

99% goes around a fouled bag or a very fine mesh bag

No flow - no grow - no dough



9) Fouling Control

• Brine dips are great unless they get hot

◦ A ten minute dip in 110° brine is probably 100% lethal

• If in doubt – test it out



10) Diversify

• If you can grow multiple species in multiple sites you have a better chance of not losing everything all at once

• If you are starting out, try multiple gear types... don't pretend you know it all



11) Don't Quit Your Day Job

- It will take you longer to make a profit then you think
- Plan to lose a crop every ten years
- When you scale up - your mortality rate and costs will go up faster then you projected
- Spreadsheets are great, but shellfish can't read

12) Make friends

- Get to know you neighbors
- Talk to other growers
- Talk to your regulators
- Talk to your extension agent
- Join your state & regional association

13) NAP Insurance is cheap

- Talk to your local Farm Service Agent about signing up for Non-insured Crop Disaster Assistance
- Not great coverage, but it sure is cheap
- Don't wait until after the hurricane



14) Take lots of notes

- Waterproof notebooks from Forestry Supply are cheap
- Memories are usually unreliable
- Documenting a loss is only possible if you have documentation
- Write down planting densities, survival rates, harvest times, temperatures, extreme weather events....



15) Cut costs

- Cutting costs is the fastest way to improve your profit margin
- Increasing sales provides an incremental gain, but only if you have a positive profit margin
- If you are losing money on each oyster, selling more doesn't help

16) You make money by selling shellfish not by growing them

- Spend some time thinking about how you will sell your product
- The Marketing Plan may be the most important chapter of your business plan
- Good advice coming up

17) Never Drop Your Price

- If you sell out before May you can probably charge more
 - You are leaving money on the table
- We typically see a nationwide shortage of quality oysters in the spring
- If you are still holding inventory in July then consider a price cut

18) Be a good neighbor

- You are working in public waters
- Don't make a mess, don't break the laws, don't get people sick.
- Use the ECSGA Best Management Practices template
 - Develop a farm plan



**PROACTIVE MANAGEMENT
TO MAKE SHELLFISH BMPS
WORK FOR YOU**



Adapted from:
GEF FLIMLIN
SANDY MACFARLANE
KATHY RHODES

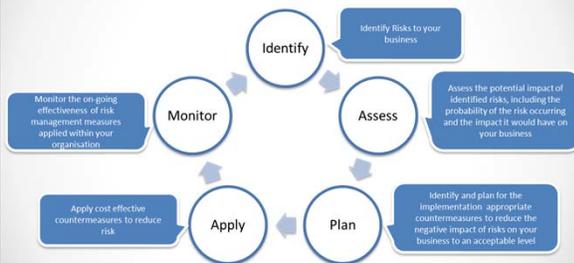
SHELLFISH AQUACULTURE AS A RISKY BUSINESS

- What are some of the risks associated with shellfish aquaculture?
 - Weather
 - Multiple uses of waterways and boating accidents
 - Disease outbreaks
 - Threats to Public Health
 - Mortalities for non-obvious reasons
 - NIMBY(Not In My Back Yard) attitudes and lawsuits

Types of Risk you will encounter

- Production risk
 - Storm damage to gear
 - Predation from storm damaged gear
 - Disease outbreak
- Price risk
 - Sudden market changes
 - Seasonal fluctuations
- Financial risk
 - Inability to finance gear purchase
- Legal risk
 - Unanticipated legal challenges for ability to operate business in public waters

Managing Risk



One effective means to manage risk is to develop a farm plan using BMPs

Best Management Practices (BMPs)

- In their purest form, BMPs are voluntary measures taken by members of the shellfish culture industry to
 - help preserve the very water quality they depend upon,
 - reduce their impacts on the environment, and
 - contribute to the sustainability of their industry.
- BMPs can also serve to highlight the proper operational parameters or "normal industry practices" that novice culturists may want to implement.
- BMPs should minimize the impact on the environment, while serving to maintain or increase crop production and quality.

Best Management Practices (BMPs)

- Besides preserving the environment, BMPs can also address societal issues.
- In many instances this could be characterized as
 - being a good neighbor,
 - respecting rights of others to appreciate and use the coastal environment.
- Shellfish culturists must recognize the concerns of all coastal inhabitants about the impact of shellfish farming activities on other interests.
- It is critical that public support exists for the continued growth and expansion of shellfish culture.
 - This support can be facilitated by adhering to a set of "good neighbor BMPs"

Best Management Practices (BMPs)

- It must be understood that no single BMP will cover all shellfish crops or all shellfish growing sites.
- Shellfish culture is very site-specific, so that any BMPs implemented must take into account site conditions, economic opportunities and local environmental conditions.
- All BMPs should be accepted as guidelines or goals which the shellfish grower should aspire to achieve.

HOW DOES USING BMPS REDUCE RISK?

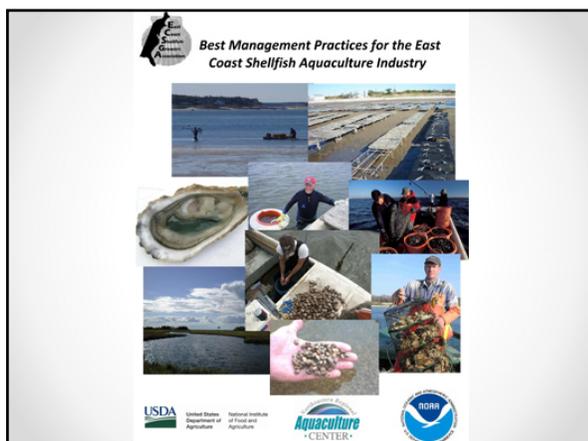


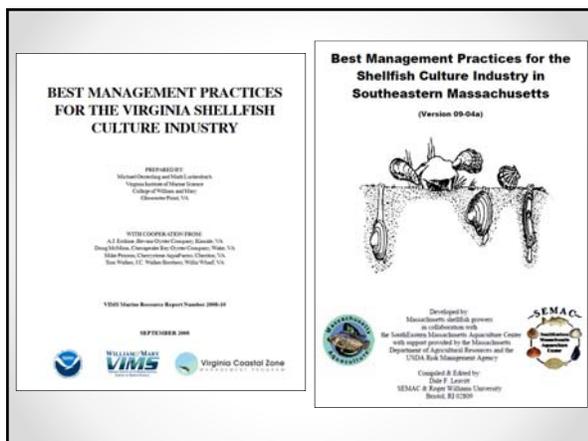
RISK MITIGATION

- Example #1: predation is a serious problem that leads to loss of stock
- BMPs say:
 - The cages we use keep most predators away
 - When predators are found within cages or under nets, we remove them immediately
 - We inspect gear often to detect rips, tears or damaged equipment

RISK MITIGATION

- Example #2: public health protection – Vibrio, red tides or sewage spills can shut down production unannounced
- BMPs show:
 - We comply with all applicable state regulations
 - We get our shellfish refrigerated immediately after harvest
 - We report any suspicious incidents to authorities





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A FARM MANAGEMENT PLAN

- What is it?
 - An operations manual that documents how you run your farm
 - Customizes your farm management by instituting those BMPs that are directly applicable to your situation
- Why have a plan?
 - To ensure your employees follow your lead
 - To prove your intentions to potential lenders
 - To show your customers your level of responsibility
- How will a written plan help?
 - By incorporating BMPs into an operations manual, it will help to minimize risk
 - By minimizing risk, you will be in a better position to operate your business profitably

FARM MANAGEMENT PLAN

- What is in it?
- General information
 - Company name, owner's name, address, contact
 - Location, lease/license number
- Shellfish grower's Code of Conduct
- Specifics of farm operations

CODE OF PRACTICE

- Shellfish farmers shall make a best effort to:
- Follow all applicable regulations
 - Produce and handle products of the highest quality and ensure product safety
 - Minimize negative environmental impacts
 - Maintain the health of the farmed shellfish
 - Encourage other growers to adopt the shellfish code of conduct and better management practices

How will a Farm Plan help?

- You go to a bank for a business loan with your business plan
 - Assets and financial information
 - Projected costs, production, profits over 5 and 10 -year periods
- Banker knows nothing about shellfish production but determines it is a risky business
 - He isn't dumb, just uneducated about your business
 - Banker asks you how you minimize the risk

YOUR RESPONSE

- You supply a farm management plan that incorporates industry-standard BMPs
- You explain that these BMPs were developed in collaboration with industry members and regulators
- Plan demonstrates that you are operating your business in an environmentally and socially responsible manner
- You show him that you are doing everything in your power to mitigate risks you can control

EXAMPLE #2

- You apply for crop insurance
 - You deal with someone that is somewhat familiar with shellfish aquaculture who asks you how you mitigate risk
- You produce a farm management plan
 - You point out specific BMPs which minimize risks that directly apply to your business

FARM MANAGEMENT PLAN BENEFITS

- Will a farm management plan help you?
 - Yes
 - Minimizes financial risk
 - Minimizes legal risk
 - Minimizes environmental risk
 - Boosts customer confidence and product acceptance



HOW TO USE A FARM MANAGEMENT PLAN FOR MARKETING AND PROFITABILITY

- Some of your buyers are curious about "sustainable seafood", because their customers are asking them about it
- You give your Farm Management Plan to your customer
 - You explain that you are operating your shellfish farm in an environmentally sound way
 - You want your customer to know your operation so he can communicate that to his customers
- This should instill customer and consumer confidence
