Aquaculture on Sovereignty Submerged Land Leases

- Division oversees the application, execution and compliance of submerged land leases for aquaculture use.

- **Assess proposed sites** and identify new areas for culture.

- **Lease permitting** and annual farm certification.

- Enforces **Aquaculture Best Management Practices**.

- Conducts **inspections and audits** to ensure regulatory compliance.

- To date: Florida has **784 active leases covering 2,795 acres**.
Farm Types – Clams
Farm Types – Oysters
Primary Concerns for Shellfish Aquaculture Debris

Routine Gear Loss
Primary Concerns for Shellfish Aquaculture Debris

Hurricanes
Primary Concerns for Shellfish Aquaculture Debris

Clam Cover Netting
Proactive Management

- Regulation
- Monitoring
- Shellfish Aquaculture Gear Management
- Education
- Prevention
- Removal
- Disposal
Non-natural materials placed in the water or on submerged lands shall be anchored to the bottom.

This includes any protective netting used to cover clam bags.
All culture materials, cover nets, bags or other designated markers placed on or in the water shall be clean and free of pollutants.

- Including petroleum-based products such as creosote, oils and greases or other pollutants.
- Compounds used as preservatives must be used in accordance with the product label.
The aquaculturist is responsible for the collection and proper disposal of all bags, cover netting or other materials used in the culture of shellfish on submerged lands or when such materials are removed during maintenance or harvesting or become dislodged during storm events.

The aquaculturist must remove all works, equipment, structures and improvements from sovereign submerged lands within 60 days following the date of expiration or termination of the lease.
The leaseholder’s identification information shall be attached to all floating or off-bottom culturing structures.

- In the events that floating or off-bottom culturing structures become dislodged from the lease site, it is the leaseholder’s responsibility to retrieve the structures from the shoreline, seagrass beds, or submerged bottom with minimal damage to the resources affected.
- The structures shall be removed and properly disposed of or returned to the lease site.
Monitoring Shellfish Lease Areas

- FDACS conducts routine and post-storm surveys in high density lease areas.
- Survey maps used to guide future cleanup efforts and identify hot spots.
Recently started conducting bottom surveys of lease areas for submerged derelict gear.

- We use a Hummingbird Helix 10 side scan sonar.
  - Quickly cover large areas.
  - Water clarity no longer an issue.
  - Also great for new lease site assessments.
Shellfish Harvester Annual Training

- All commercial shellfish harvesters required to take an annual training course. Required by ISSC.
- Cooperative program by FDACS and FWC.
- Marine debris information and gear management practices now included.
Gear Management Workshops

- FDACS, NOAA MDP, UF/IFAS and industry associations hosted workshop in 2018.

- Similar UF/IFAS and FDACS workshop in 2019 in different part of state.

- Gear tags given away as incentive for attending.
Gear Management and Public Perception

From plastic straws and bottles to large derelict vessels, marine debris is a growing problem worldwide. Up to 165 million tons of plastic debris is currently thought to exist in the world's oceans, with an additional 4 to 13 million tons destined to end up in the oceans annually. In addition to being an aesthetic nuisance, marine debris can complicate navigation, entangle and kill marine life, harbor communities of pathogenic bacteria, and leach harmful chemicals into the environment.

Shellfish aquaculture is nationally recognized for its sustainability and environmental benefits. Maintaining the industry's public image as a steward of the nation's coastal ecosystems requires diligent management of gear. Not only can lost aquaculture gear cause fish, bird, sea turtle, and marine mammal deaths, mismanagement of gear and the accumulation of unneeded debris in coastal areas could result in negative public perception and economic damage to the industry as a whole.

Environmental stewardship, at its core, requires planning, action, and investment to reduce, reuse, recycle and recover the gear and equipment used everyday on or off the farm. An unhealthy aquatic environment cannot support a healthy shellfish crop. Careless farming practices are unsustainable for current and future generations of farmers and processors that depend on shellfish aquaculture products to make a living. While the reader may consider themselves a diligent and conscious steward of their local environment, it is important to remember that the industry will be viewed as a whole by consumers. Encouraging shellfish farmers to practice proper gear management and disposal can be an effective tool to ensure that shellfish gear is accounted for and the environment is not impacted.

Lease Stewardship and Public Perception

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Tropical Storm and Hurricane Preparedness for Off-bottom Oyster Aquaculture in the Gulf of Mexico

Introductory Planning Guide

INTRODUCTION

Off-bottom oyster aquaculture is relatively new in the Gulf of Mexico region. Since 2010, over 200 farms have become established in Alabama, Florida, Louisiana, and Mississippi. Oyster aquaculture, like any agriculture operation, has inherent risks with perils beyond growers’ control. However, coastal waters present challenges for oyster farmers beyond the traditional farm setting, in the form of tropical storms and hurricanes. Extreme conditions associated with these events can result in severe impacts to oyster farms. Damages related to wind, storm surge, and decreased salinity due to flooding include oyster mortality, loss of gear and equipment, and increased labor costs.

The Gulf of Mexico region has a long history of storms that have devastated many coastal communities. The official hurricane season is from June 1 through November 30. As the season progresses, the threat of major hurricanes increases from west to east across the region. As such, Texas and Louisiana are the prime targets for early season hurricanes, while the west coast of Florida is more likely to be impacted in mid-September to October. According to the National Oceanic and Atmospheric Administration (NOAA) National Hurricane Center, the four oyster-producing states (AL, FL, LA, MS) have experienced five hurricanes and seven tropical storms from...
Publications:

Guide to Aquaculture Net Coatings

Alternatives to Plastic
Industry Cleanup Events

- Cedar Key Aquaculture Association hosts annual cleanup event for 10+ yrs.
  - 90,000 lbs. removed in 2018 cleanups.
- Informal groups formed for cleanups in other areas.
- Post-hurricane cleanups
  - Hurricane Michael devastated the panhandle oyster farms.
Disposal dumpsters are very effective!

- Funded via NOAA Marine Debris Program Hurricane Relief funds or industry associations.

- Industry partners volunteer to host dumpsters.
  - Locate partners near high use areas, such as processors or hatcheries and near primary boat ramps.

- Information signs also critical to prevent use by others and to help educate general public.
Biodegradable Cover Net Research

- USDA NIFA funded project to produce effective and affordable alternative to plastic cover nets.
  - Biopolymer engineer at Florida State University currently synthesizing the novel material.
    - Base material is lignin (tree pulp waste product).
    - Can be mass produced w/o new machinery.
  - Field trials will be conducted soon in Cedar Key.
Follow all the terms and conditions of the Sovereignty Submerged Land Aquaculture Lease, and be fully compliant with provisions of Chapters 253, 258, Part II, 597, F. S., and Rule Chapters 5L-1, 5L-3, and 18-21, F.A.C.

Questions?

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