Using the North Carolina Shellfish Aquaculture Siting Tool

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Today

- Creating the tool
  - Why use it?
- What is the tool?
  - Development
- Under development
- Case study for data tools
NC Shellfish Siting Tool

- Here we have developed an interactive online tool, specifically designed to help potential Shellfish growers with site selection for further investigation.
- Here we provide visualization of public datasets with the goal of reducing user conflicts and regulatory demand.
- https://uncw.edu/benthic/sitingtool/

Troy’s Disclaimer “This is not a substitute for on site verification”
When we started

- Aquaculture needs to fill a greater portion of consumer demand
- Modeled off existing tools- UCONN Shellfish mapper [https://shellfish.uconn.edu/maps/](https://shellfish.uconn.edu/maps/)
- Guidance from
  - NCDMF
  - NC Sea Grant
  - NOAA
  - DCM
  - Growers- experienced and new
- Obstacles to the overall industry
  - Regulations (moving target)
  - Market factors
  - Perceived vs Real conflict
  - Siting of new operations
NC Grower’s Concerned

- Water Quality
- Storms!
- Human interactions!
  - Not everyone agrees
  - Community Engagement
- Locations
- Others
  - Marketing
  - Distribution
  - Finance
Utilize Environmental vs non-environmental**

Orthoimagery from NC Dept. of Agriculture and Consumer Services.
NCDENR
DMF
DCM
NOAA
Siting tool
1-3 thousand hits/month
~1000 unique hits
Many users not on the coast
How to Select New Areas

- New to the industry or new to the area
- Provides some info on classification and conditions
  - Always changing/ updating
- Provides mainly public information
  - Sometimes time from unintended uses
- For those that are familiar with your growing area historical data and metadata
  - Past might be a good predictor
Under Development

- Currently 22 layers available

- Data layers for risk factors - wind and storms, competing uses

- Decision Support tool - development in conjunction with NCDMF and stakeholders to help guide new growers through the process

- “Developing Farm and Market tools for Shellfish Mariculture in North Carolina” - Starting 2021. Partnership with NC Sea Grant. Farm planning to business incubator for growers
Before you get started

- Type of operation
  - Shell on bottom
    - Spat on shell
  - Floating bags
  - Bottom cages
- Effort you can commit
- How much area can you afford to work
What Parameters are Most Important?

- Based on stakeholder input
- Site feasibility
  - Classification
  - Depth
  - Salinity
  - Existing Leases
  - Bottom Type
- Future site impacts
  - Land-use
  - % impervious surface
  - Rainfall
Depth Contour

- Multiple file types
- Differences in precision
- Clarity
- Raster data currently available
Salinity

- No clear comprehensive data set
- Consistency
  - Missing metadata
- **5 yr mean (based on available data)**
  - Min and Max
- Salinity Raster disappears when zoomed in at 1:300,000
- Salinity Point Data appears at 1:300,000
Existing Leases

- Only shows relative size and position
  - Acreage
- No identifier in dataset
- Lease vs Franchise
- New river leases***
Bottom Type Information

- Data verification
- Note date data was collected
How does it work

http://uncw.edu/benthic/
Contact Info and Tutorials
Select Tutorial or Get Started
The Starting Map
Reveal the Layers

NC Shellfish Siting Tool
Focus on Target area
Turn on as Many Layers as Needed
Information on Data Source
Explore Information cont’d
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Questions?