

Using the Aquaculture Mapping Atlas for Fun and Profit

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Part of the CLEAR webinar series

Nice to Meet You

Cary Chadwick

- Extension Educator, CLEAR
- Geospatial Training Program
 - clear.uconn.edu/geospatial
- Mapping Websites
 - CT ECO
 - Aquaculture Mapping Atlas
- Geospatial project work



Tessa Getchis

- Extension Educator, CT Sea Grant
- Aquaculture Extension Program
 - shellfish.uconn.edu
- Business development
- Permitting assistance
- Species/gear technology research



Webinar Overview

- Background
- Aquaculture Site Selection Process
- A little GIS
- DEMO
- Discussion



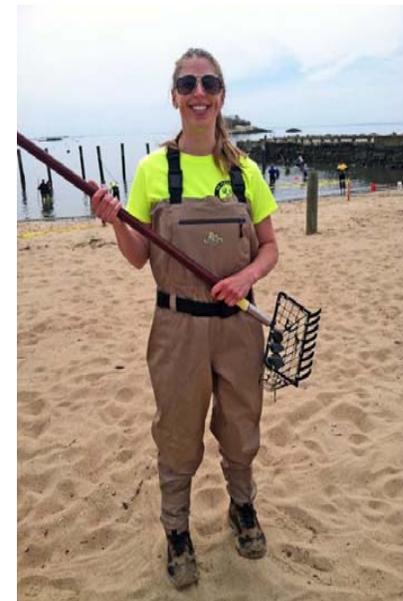
Photo: CT Post



Photo: The Hartford Courant, August 2009

Spatial Planning for Shellfish Resources

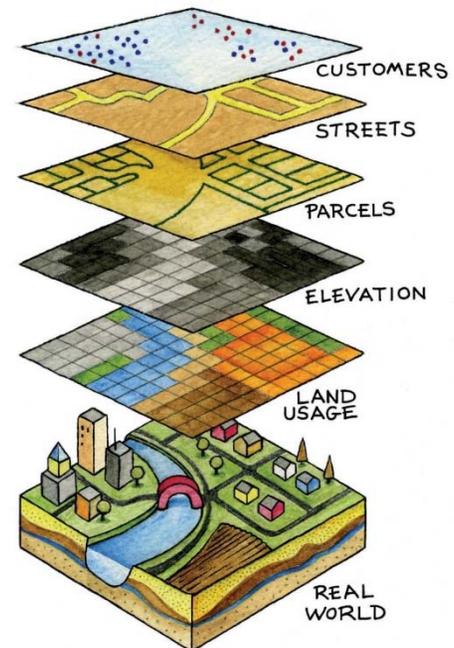
- Desire to expand commercial and recreational harvest
- Need to improve site selection process
- Existing commercial and recreational uses of LIS
- Minimize use conflicts in “urban sea”
- Avoid navigational hazards
- Minimize adverse environmental interactions



The Old Approach

Paper maps in various formats and scales = time consuming, outdated data approach

Geographic Information Systems (GIS) simplifies the data problem and provides access to a larger audience



History and Evolution of the Atlas

In 2008, CT Sea Grant and UConn GTP held two GIS training workshops designed to teach shellfish commission members and Department of Agriculture employees how to apply GIS and GPS to municipal shellfisheries management.

- Intensive two-day Introduction to Desktop GIS training
- Trained 30 commissioners from 10 different commissions



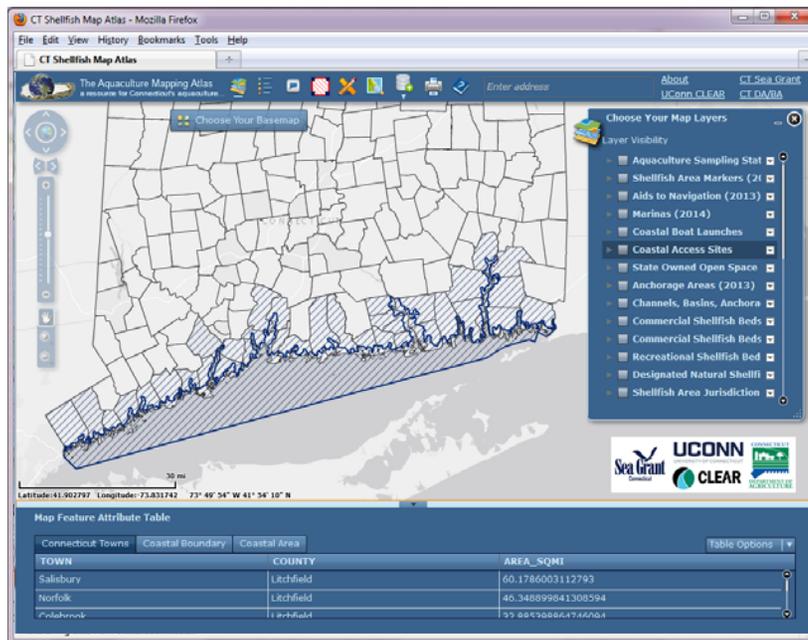
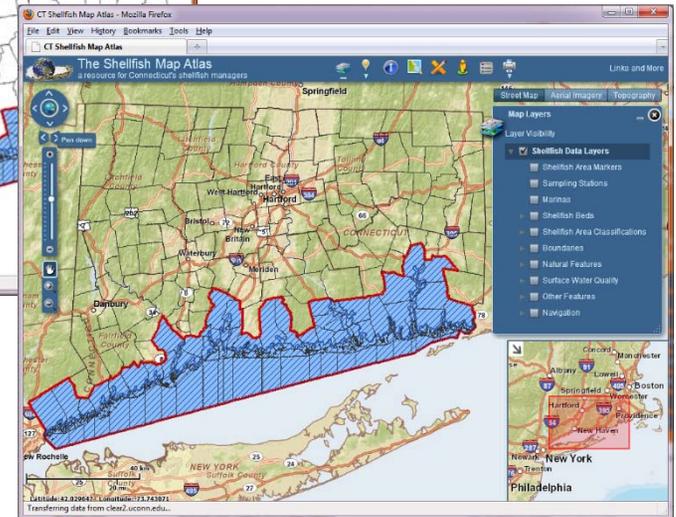
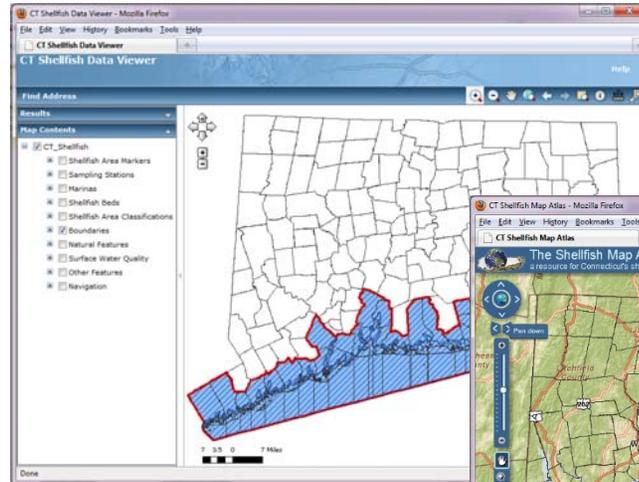
Enter...The Shellfisheries Mapping Atlas

Visit: <http://clear3.uconn.edu/shellfish>

- an interactive, online mapping application
- free and open access to various marine and coastal datasets
- GIS-based, but no GIS software or training required
- target audiences include decision-makers (industry, managers) and anyone who influences the process
- Purpose: to facilitate better informed and more efficient decisions about marine aquaculture
- Developed for the state of Connecticut, but now working with managers in other coastal states to develop similar tools

History and Evolution of the Atlas

- 2008: V1 of the Atlas
- 2011: V2
- 2013: V3
- 2014/15: V4



Geospatial Data Layers

The Atlas allows users to access and view various types of site information:

General site characteristics important for production, gear type, configuration	Historical, current and potential future uses and users;	Potential environmental interactions
Example layers: <ul style="list-style-type: none">• bathymetry/soundings• currents• water quality• productivity (chl a)• sediment type• classification type	Example layers: <ul style="list-style-type: none">• existing/potential aquaculture lease areas• marina and mooring positions• commercial uses• recreational uses	Example layers: <ul style="list-style-type: none">• distribution/abundance of living marine resources<ul style="list-style-type: none">• native populations• endangered species• habitats (e.g. SAV)

Geospatial Data

Where does the data come from?

- NOAA, USGS, Coast Guard, state and municipal governments
- Majority of shellfish datasets come from DA/BA and are updated regularly

What are the limitations of the data?

- Not all sites have data available
- Quality variations
 - data should be collected or validated by a reputable source
 - Metadata doesn't always tell the user the length of time the data is valid
 - Data updates are staggered
 - Some data is not updated at all

Data on Atlas is the most up to date version available to the public!

Functions and Tools

View data:

Access to dozens of coastal marine datasets

Search data layers and data tables

Measure features (distance, area, spatial location)

Customize your map:

Import user data (X/Y data, shapefiles)

- overlay, compare, visualize

Add graphics, drawings and annotations to a map

Prepare your documents:

Draw and export shellfish lease/gear areas

Print and save a map

Demo overview

- General overview of interface and toolbars
- Basemaps and spatial datasets
- Run through of hypothetical siting of new shellfish lease area
 - Consider physical, environmental and existing use interactions
 - Shellfish classification areas
- Create maps to submit in pre-application using the new Lease Area tool

See it in Action!

The Aquaculture Mapping Atlas
a resource for Connecticut's aquaculture ind...

Enter address

About UConn CLEAR CT Sea Grant CT DA/BA

Choose Your Basemap

Choose Your Map Layers

Layer Visibility

- Anchorage Areas (2013)
- Channels, Basins, Anchorage A
- Commercial Shellfish Beds (St
- Commercial Shellfish Beds (M
- Recreational Shellfish Beds (2
- Designated Natural Shellfish B
- Shellfish Area Jurisdiction Line
- Shellfish Classification Lines (:
- Shellfish Classification Areas (
- Connecticut Towns
- Town Jurisdiction
- Coastal Boundary
- Coastal Area
- Environmental Sensitivity Inde
- Environmental Sensitivity Inde
- Critical Coastal Habitats
- Estuarine Marine Wetlands (N
- Eelgrass Beds (2009)
- Eelgrass Beds (2012)
- Waterfowl Habitat
- Natural Diversity Areas (June
- Commercial Fishery Vessel Da

30 mi W YORK

Latitude:40.911965 Longitude:-73.594163 73° 35' 38" W 40° 54' 43" N

Sea Grant Connecticut UCONN UNIVERSITY OF CONNECTICUT CLEAR CONNECTICUT DEPARTMENT OF AGRICULTURE

Outcomes and Impacts

- CT regulators have adopted the Atlas for use in their evaluation of application for aquaculture
- State Aquaculture Coordinator encourages its use by industry in the identification of suitable sites and development of applications
- For the CT Department of Agriculture, The Atlas has:
 - “Contributed to improved efficiency of and dialogue about the decision-making process” and “provided a mechanism to visually represent to the public aquaculture within the context of broader ecosystem”
- The Atlas has been accessed by users in 18 states by a diverse group of stakeholders;
- Many have expressed interest in developing similar mapping tools

Acknowledgements

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- Numerous municipal shellfish and harbor management commission members, industry and other individuals who provided critical feedback

Questions?

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