SC’s Intertidal Oyster Survey
W.D. Anderson & G.M. Yianopoulos

Coastal Issue Workshop
USC Baruch Marine Field Lab
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Why an oyster survey?

• Resource management
• Lease rental based on resource
• Monitor population trends
• Shellfish mitigation
• Identify environmental issues
<table>
<thead>
<tr>
<th>State</th>
<th>Acres</th>
<th>Marsh Area</th>
<th>Fraction</th>
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<tbody>
<tr>
<td>Georgia</td>
<td>300</td>
<td>378,000</td>
<td>.0008</td>
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<tr>
<td>South Carolina</td>
<td>2,000</td>
<td>504,000</td>
<td>.004</td>
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</tbody>
</table>
Oyster Surveys in SC

1890/91 - Battle (*Fish Hawk*)
1943 - Lunz
1969 - McKenzie and Badger
1980s – Anderson, Yianopoulos, Haggerty, Monck and others
Survey Concept

- Ground truth rapid assessment
- Intertidal reef area (footprint)
- Characteristic spatial dispersions (strata development)
- Ancillary data
Survey Priorities

• Areas closed to shellfish harvesting
• Leases (culture permits)
• State Shellfish Grounds (SSGs)
• Public Shellfish Grounds (PSGs)
• Grant areas
Survey Issues

- Shoreline (fringe) reefs
- Flat areas (patch) reefs
- Feeder creeks
- Oysters shaded by *Spartina*
- Spatial dispersions or “strata”
Potential Bottom For Planting Oysters
With Shell Matrix or Hard Bottom
little or no live oysters
Intertidal Oyster Strata

bushels / acre

Dead Shell
Live Oysters

D C F_1 B F G E A
INTERTIDAL OYSTER SURVEY MAPS

USGS Topographic Quad Sheet
1/24,000

2x

NW NE
SW SE

4 Oyster Survey Maps
1/12,000 (22" x 31 1/2")
Ancillary Data

- Bottom type
- Shell matrix depth
- Strata elevation
- Hydrographic data
- Clam densities
- Oyster size
Survey Products

- Commercial permit maps
- Commercial shellfish contracts
- Recreational maps on DNR web
- DHEC/DNR Law Enforcement maps
- Mitigation representation
- Special Area Management plans
“Holy Grail” of Ground Truthing

• GPS with sub meter accuracy
• No digitizing
• Minimal post processing
• Actual footprint
• Faster survey process
• MediaMapper™ (photo linkage)