DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
100 W. OGLETHORPE AVENUE
SAVANNAH, GEORGIA 31401-3640

REPLY TO
ATTENTION OF

MARCH 2 0 2013

Regulatory Division
SAS-2012-00521

JOINT PUBLIC NOTICE
Savannah District/State of Georgia

The Savannah District proposes to issue, for a period of 5 years, Programmatic General Permit No. 37 (PGP 37) for the placement of materials at 17 inshore artificial reef sites located in the tidal navigable Waters of the United States in Bryan, Camden, Chatham, Glynn, Liberty and McIntosh Counties Georgia. PGP 37 would authorize the addition of materials at 16 existing sites and one proposed new site located at the East Arm Jekyll Island Pier.

Inshore Artificial Reef Lactations:

1. Halfmoon River. Latitude 31.962667, Longitude -80.942617, in the mouth of Halfmoon River, Wassaw Sound, Chatham County.

2. Romerly Marsh Creek (Joe's Cut). Latitude 31.931617, Longitude -80.9878000, in the mouth of Romerly Marsh Creek, Wassaw Sound, Chatham County.

3. Ogeechee River. Latitude 31.869550, Longitude -81.153017, 0.6 nm north of Ogeechee River marker G"1A" along Harvey's Island, Ossabaw Estuary, Chatham County.

4. Bear River. Latitude 31.745333, Longitude -81.155050° W, in the mouth of Newell Creek, St. Catherines Estuary, Bryan County.

5. Van Dyke Creek. Latitude 31.685450, Longitude -81.198167, at mouth of Van Dyke Creek, St. Catherines Estuary, Liberty County.

6. Timmons River. Longitude -81.215250, 0.87 nm west of Intracoastal Waterway marker G"121,"on north side of Timmons River, St. Catherines Estuary, Liberty County.

7. Four- Mile Island. Latitude 31.536283, Longitude -81.290550, 0.30 nm northeast of Four-Mile-Point, Sapelo Sound, McIntosh County.

8. High Point. Latitude 31.524700, Longitude -81.242267, west of High Point, Sapelo Island, Sapelo Sound, McIntosh County.

9. Troupe Creek. Latitude 31.229117, Longitude -81.440617, 0.30 nm northeast of Troupe Creek Marina, Troupe Creek, St. Simons Sound, Glynn County.

10. Jove Creek. Latitude 31.216383, Longitude -81.425617, opposite Intracoastal Waterway marker R"238," at mouth of Jove Creek, St. Simons Sound, Glynn County.

11. Little River - East Bank. Latitude 31.167700, Longitude -81.435817, 0.01 nm south of Little River Bridge, St. Simons Island Causeway, St. Simons Sound, Glynn County.

12. Little River - West Bank. Latitude 31.167550, Longitude -81.436333, 0.01 nm south of Little River Bridge, St. Simons Island Causeway, St. Simons Sound, Glynn County.

13. Henry Vassa Cate (Twin Sisters). Latitude 31.103383, Longitude -81.426667, 0.87 nm southwest of Jekyll Island fishing pier, west of Jekyll Island, St. Simons Sound, Glynn County.

14. Mud Creek. Latitude 30.904667, Longitude -81.469500, at the juncture of Mud Creek, Cumberland River and Brickhill Rivers, St. Andrews Estuary, Camden County.

15. Stafford Island. Latitude 30.818917, Longitude -81.488850, near Intracoastal Waterway marker G"71, " Cumberland Sound, Camden County.

16. West Arm Jekyll Island Pier. Latitude 31.116696, Longitude -81.418431° W, at the mouth of St Simons Sound, Glynn County.

17. East Arm Jekyll Island Pier. Latitude 31.117506, Longitude -81.417463° W, at the mouth of St Simons Sound, Glynn County.

Authority: The Savannah District proposes the issuance of PGP 37 pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403). Programmatic General Permits are authorized by the District Commander for activities which are substantially similar in nature and cause only minimal individual and cumulative environmental impacts; and would result in avoiding unnecessary duplication of the regulatory control exercised by another Federal, State, or local agency provided it has been determined that the environmental consequences of the action are individually and cumulatively minimal (see 33 C.F.R. Parts 322.2(f), 325.2(e), and 330).

Scope: The scope of proposed PGP 37 includes only activities which are considered to be in accordance with the limitations set forth in the conditions in the attached draft PGP 37.

STATE OF GEORGIA

State-owned Property and Resources: The work authorized by the PGP may also require assent from the State of Georgia, which may be in the form of a license, easement, lease, permit or other appropriate instrument.

Marshland Protection: This notice also serves as notification of a request to alter coastal marshlands (under the provision of the Coastal Marshlands Protection Act, Georgia Laws, 1970, p. 939 and as amended), if required. Comments concerning work authorized by the PGP should be submitted to the Ecological Services Section, Coastal Resources Division, Georgia Department of Natural Resources, 1 Conservation Way, Brunswick, Georgia 31523-8600 (Telephone 912-264-7218).

Georgia Coastal Management Program: Prior to the Savannah District Corps of Engineers making a final decision, PGP 37 must be certified by the Georgia Department of Natural Resources, Coastal Resources Division, to be consistent with applicable provisions of the State of Georgia Coastal Management Program (15 CFR 930). Anyone wishing to comment on Coastal Management Program certification of the issuance of the PGP should submit comments in writing within 30 days of the date of this notice to the Federal Consistency Coordinator, Ecological Services Section, Coastal Resources Division, Georgia Department of Natural Resources, One Conservation Way, Brunswick, Georgia
31523-8600 (Telephone 912-264-7218).

U.S. ARMY CORPS OF ENGINEERS

The Corps must consider the potential impacts that may be associated with PGP 37 prior to making a final decision on issuance of the PGP.

Cultural Resources Assessment: Review of the latest published version of the National Register of Historic Places indicates that no registered properties or properties listed as eligible for inclusion are located at the 17 identified reef sites or in the area affected by the proposed work. Presently unknown archaeological, scientific, prehistorical or historical data may be located at the sites and could be affected by the work that would be authorized by the PGP.

Essential Fish Habitat (EFH): This notice initiates the EFH consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. Work authorized by PGP 37 could result in the alteration of approximately 78.23 acres of inter-tidal water bottoms utilized by various life stages of species comprising the red drum, shrimp, bluefish or snapper grouper management complexes. The initial determination of the Corps is that the work that would be authorized by the PGP would not have an individual or cumulatively substantial adverse impact on EFH or federally managed fisheries in the Atlantic Ocean. Our final determination relative to project impacts to EFH and the need for mitigation measures are subject to review by and coordination with the NMFS and the South Atlantic Fisheries Management Council.

Endangered Species: Pursuant to Section 7(c) of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.), we request information from the U.S. Department of the Interior, Fish and Wildlife Service, the U.S. Department of Commerce, the National Oceanic and Atmospheric Administration, and the National Marine Fisheries Service; or, any other interested party, on whether any species listed or proposed for listing may be present in the area. Based on available information, the Corps has determined that the issuance of PGP 37 and the work that may be performed under this PGP, may affect but is not likely to adversely affect the West Indian Manatee with the inclusion of the standard manatee construction conditions, which would be made part of any PGP issued and would have no effect on any other federally listed threatened or endangered species.

Public Interest Review: The decision whether to issue PGP 37 will be based on an evaluation of the probable impacts associated with activities that would be authorized under these PGPs, including cumulative impacts of the proposed activity on the public interest. That decision will

reflect the national concern for both protection and utilization of important resources. The benefit, which reasonably may be expected to accrue from the issuance of the PGP, must be balanced against its reasonably foreseeable detriments. All factors, which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership and in general, the needs and welfare of the people.

Consideration of Public Comments: The Corps is soliciting comments from the public; federal, state, and local agencies and officials; Native American Tribes; and other interested parties in order to consider and evaluate the impacts of the issuance of PGP 37. Any comments received will be considered by the Corps to determine whether to issue, modify, condition or not issue the PGP. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

Public Hearing: Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider this application for a Department of the Army Permit. Requests for public hearings shall state, with particularity, the reasons for requesting a public hearing. The decision whether to hold a public hearing is at the discretion of the District Engineer, or his designated appointee, based on the need for additional substantial information necessary in evaluating the proposed project.

Comment Period: Anyone wishing to comment on the issuance of PGP 37 should submit comments in writing to the Commander, Savannah District, U.S. Army Corps of Engineers, Attention: Mark J. Padgett, 100 W. Oglethorpe Avenue, Savannah, Georgia 31401-3640, no later than 30 days from the date of this notice. Please refer to the applicant's name and the application number in your comments.

If you have any further questions concerning this matter, please contact Mark J. Padgett, Senior Project Manager, Coastal Branch at 912-652-5052.

3 Encls
1. Draft Programmatic Regional Permit with attachments (45 pages).
2. Inshore Artificial Reef Program Historical Overview supplied by applicant (5 pages).
3. Inshore Artificial Reef Program Additional Information supplied by applicant (8 pages).

U.S. Army Corps of Engineers
Savannah District, Regulatory Division
Programmatic General Permit 37 (PGP 37)

Effective Date:

Expiration Date:

DEPARTMENT OF THE ARMY
PROGRAMMATIC GENERAL PERMIT 37 (PGP 37)
FOR PLACEMENT OF MATERIALS AT
APPROVED INSHORE ARTIFICIAL REEF SITES
IN TIDAL NAVIGABLE WATERS OF THE UNITED STATES
IN BRYAN, CAMDEN, CHATHAM, GLYNN, LIBERTY AND MCINTOSH COUNTIES
GEORGIA

DESCRIPTION OF PGP 37: Upon recommendation of the Chief of Engineers, pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 403) as amended (43 U.S.C. 1333(e)), authorization is hereby issued by the US Army Corps of Engineers, Savannah District (Corps) for the addition of materials to 17 Inshore Artificial Reef Sites located in tidal navigable waters of the United States in Bryan, Camden, Chatham, Glynn, Liberty and McIntosh Counties, Georgia. Proposals to add materials to a reef site must be submitted to the Georgia Department of Natural Resources, Ecological Services Section (Georgia ESS) for review, and receive prior written verification from the Georgia ESS that the proposed work complies with the terms and conditions of PGP-37.

LOCATION OF ARTIFICIAL REEF SITES: Materials shall be placed within the designated boundaries of the below described reef sites. The boundaries of the reef sites are also depicted in attached site maps and drawings. Coordinates are based on North American Datum of 1983, water depths are provided in feet at Mean Low Water (MLW), and approximate distances are provided in nautical miles (nm). At inter-tidal reefs, most structures are partially exposed during ebb-low tides. At sub-tidal reefs, all structures are submerged at all times.

1. Halfmoon River. Inter-tidal reef site (0-3' MLW) marked with four pilings; the southernmost piling is located at Latitude 31.962667, Longitude -80.942617, in the mouth of Halfmoon River, Wassaw Sound, Chatham County.

2. Romerly Marsh Creek (Joe's Cut). Inter-tidal reef site (0-3' MLW) marked with 1 piling at Latitude 31.931617, Longitude -80.9878000, in the mouth of Romerly Marsh Creek, Wassaw Sound, Chatham County.

3. Ogeechee River. Inter-tidal reef site (0-3' MLW) marked with 2 pilings; the southernmost piling located at Latitude 31.869550, Longitude -81.153017, 0.6 nm north of Ogeechee River markerG"1A" along Harvey's Island, Ossabaw Estuary, Chatham County.

4. Bear River. Inter-tidal site (0-3' MLW) marked with 2 pilings; the southernmost piling is located at Latitude 31.745333, Longitude -81.155050° W, in the mouth of Newell Creek, St. Catherines Estuary, Bryan County.

5. Van Dyke Creek. Inter-tidal site (0-3' MLW) marked with 2 pilings; the southernmost piling is located at Latitude 31.685450, Longitude -81.198167, 0.58 nm North Northwest of Intracoastal Waterway marker G"121," at mouth of Van Dyke Creek, St. Catherines Estuary, Liberty County.

6. Timmons River. Inter-tidal site (0-3' MLW) marked with 2 pilings; southernmost piling is located at Latitude 31.677383, Longitude -81.215250, 0.87 nm west of Intracoastal Waterway marker G"121,"on north side of Timmons River, St. Catherines Estuary, Liberty County.

7. Four- Mile Island. Inter-tidal site (0-3' MLW) marked with 2 pilings; the southernmost piling is located at Latitude 31.536283, Longitude -81.290550, 0.30 nm northeast of Four-Mile-Point, Sapelo Sound, McIntosh County.

8. High Point. Inter-tidal site (0-3' MLW) marked with 4 pilings; the southernmost piling is located at Latitude 31.524700, Longitude -81.242267, west of High Point, Sapelo Island, Sapelo Sound, McIntosh County.

9. Troupe Creek. Inter-tidal site (0-3' MLW) marked with 2 pilings; the southernmost piling is located at Latitude 31.229117, Longitude -81.440617, 0.30 nm northeast of Troupe Creek Marina, Troupe Creek, St. Simons Sound, Glynn County.

10. Jove Creek. Inter-tidal site (0-3' MLW) marked with 2 pilings; the southernmost piling is located at Latitude 31.216383, Longitude -81.425617, opposite Intracoastal Waterway marker R"238," at mouth of Jove Creek, St. Simons Sound, Glynn County.

11. Little River - East Bank. Sub-tidal site (8-12' MLW) marked with 1 piling at Latitude 31.167700, Longitude -81.435817, 0.01 nm south of Little River Bridge, St. Simons Island Causeway, St. Simons Sound, Glynn County.

12. Little River - West Bank. Sub-tidal site (8-12' MLW) marked with 1 piling at Latitude 31.167550, Longitude -81.436333, 0.01 nm south of Little River Bridge, St. Simons Island Causeway, St. Simons Sound, Glynn County.

13. Henry Vassa Cate (Twin Sisters). Inter-tidal site (0-3' MLW) marked with 4 pilings; the southernmost piling is located at Latitude 31.103383, Longitude -81.426667, 0.87 nm southwest of Jekyll Island fishing pier, west of Jekyll Island, St. Simons Sound, Glynn County.

14. Mud Creek. Inter-tidal site (0-3' MLW) marked with 2 pilings; the southernmost piling is located at Latitude 30.904667, Longitude -81.469500, at the juncture of Mud Creek, Cumberland River (Intracoastal Waterway), and Brickhill Rivers, St. Andrews Estuary, Camden County.

15. Stafford Island. Inter-tidal site (0-3' MLW) marked with 2 pilings; the southernmost piling is located at Latitude 30.818917, Longitude -81.488850, near Intracoastal Waterway marker G"71, " Cumberland Sound, Camden County.

16. West Arm Jekyll Island Pier. Sub-tidal site (5-6' MLW) located behind a pier; not marked with pilings. Located at Latitude 31.116696, Longitude -81.418431° W, at the mouth of St Simons Sound, Glynn County.

17. East Arm Jekyll Island Pier. Sub-tidal site (5-6' MLW) located behind a pier; not marked with pilings. Located at Latitude 31.117506, Longitude -81.417463° W, at the mouth of St Simons Sound, Glynn County.

GENERAL CONDITIONS:

1. The Applicant, for the purpose of this PGP, is any agent, firm, or individual who submits a written request for use of this PGP to the Georgia ESS, at least 30 days prior to the planned date for placement of materials at an approved artificial reef site.

2. The Permittee, for the purpose of this PGP is any applicant who receives written verification from the Georgia ESS and/or the Corps to add material to an artificial reef site, as may be authorized under this PGP.

3. All activities identified and authorized herein shall be consistent with the terms and conditions of this PGP; and any activities not specifically identified and authorized herein shall constitute a violation of the terms and conditions of this PGP, which may result in the modification, suspension, or revocation of this PGP, in whole or in part, and in the institution of such legal proceedings as the United States Government may consider appropriate, whether or not this Permit has been previously modified, suspended, or revoked in whole or in part.

4. The Permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

5. All activities authorized herein shall, if they involve, during their construction or operation, any discharge of pollutants into waters of the United States, be at all times consistent with applicable water quality standards, effluent limitations, and standards of performance, prohibitions, pre-treatment standards, and management practices established pursuant to the Clean Water Act (33 U.S.C. 1344), and pursuant to applicable state and local law.

6. When an activity authorized herein involves a discharge during its construction or operation of any pollutant (including dredged or fill material) into waters of the United States, the

authorized activity shall, if applicable water quality standards are revised or modified during the term of this PGP, be modified, if necessary, to conform with such revised or modified water quality standards within 6 months of the effective date of any revision or modification of water quality standards, or as directed by an implementation plan contained in such revised or modified standards, or within such longer period of time as the District Engineer, in consultation with the Regional Administrator of the Environmental Protection Agency, may determine to be reasonable under the circumstances.

7. The discharge will not jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation or destroys or adversely modifies the critical habitat of such species. The Georgia ESS shall notify the District Engineer if any listed species or critical habitat might be affected and no work shall begin until the requirements of the Endangered Species Act have been satisfied.

8. Every reasonable effort shall be made to accomplish work authorized herein in a manner so as to minimize adverse impacts of the work on fish, wildlife and natural environmental values, and to minimize degradation of water quality.

9. Activities that may be hazardous to navigation or that may produce adverse effects on the chemical, physical, or biological integrity of the water body are not authorized under this PGP.

10. The Corps shall be allowed to make periodic inspections at any time deemed necessary in order to assure that the activity being performed under authority of this PGP is in accordance with the terms and conditions prescribed herein.

11. This PGP does not authorize or approve the construction of particular structures which may require authorization by the Congress or other agencies of the Federal government.

12. There shall be no unreasonable interference with navigation or public use by the existence or use of the activity authorized herein.

13. If during accomplishment of the work authorized herein, a previously unidentified archaeological or cultural resource is encountered, which is potentially eligible for inclusion in the National Register of Historic Places, the District Commander shall be immediately notified.

SPECIAL CONDITIONS:

1. Applicants intending to perform work under this PGP must submit an application to the Georgia Department of Natural Resources, Coastal Resources Division, Attention: Georgia Artificial Reef Development Program, One Conservation Way, Suite 300, Brunswick, Georgia 31520-8686. The application package shall include plans and drawings that adequately describe and depict the location of the work; the quantity and type of material to be deposited; the projected vertical relief of the material; and the written intention to comply with all terms and conditions of the PGP. All proposals must be in accordance with the guidelines and limitations

set forth in the conditions of the PGP. The Georgia ESS will review the plans and assess the work site to determine if proposed plans are within the scope of applicable permit conditions.

2. The Permittee shall notify the Georgia ESS at least 10 working days in advance of an approved placement of materials at a reef site.

3. Within 10 days of placement of materials at an artificial reef site, the Permittee shall submit post-placement information to Georgia ESS. Required post-placement information shall include Global Positioning System (GPS) or Differential Global Positioning System (DGPS) coordinates, bearings, and any other information required by Georgia ESS.

4. The Georgia ESS shall submit an annual report of all inshore reef activities to the Corps by September 1'st of each year. The Report shall consist the following information: a project summary providing an overview of activities per year; site selection and evaluation criteria used; dates of deployments; staff training and on site deployment activities; contractor used; types of materials deployed per site and any specific requirements of materials; the Georgia DNR, Ecological Services Section letter of permission; program maintenance activities if available such as side scan sonar readings per site evaluated and aerial over-flight photographs/videos.

5. The Georgia ESS shall insure that each site is demarcated with signs as shown on the attached reef site diagrams. Signs shall be inspected and maintained annually.

6. Materials approved for placement at reef sites: shell materials, such as clam and oyster shell; rock; concrete; concrete rubble and concrete culverts that have been cleaned to Environmental Protection Agency standards and is free from exposed rebar and toxins; polyvinyl chloride (PVC) used as a component in Fish Aggregating Device (FAD), which is typically a concrete slab with PVC spikes arranged vertically in a pin cushion style; metal transport cages, bridge supports and similar heavy metal structures; and other materials determined appropriate by the Georgia ESS.

7. Materials not approved for placement at reef sites: railroad boxcars; subway cars; steel and wood-hulled ships; boats; barges; manufactured materials using coal fly ash; military hardware; vehicle tires; automobiles and other vehicles and their associated parts; aircraft; fiberglass; and white goods (household appliances).

8. Conformance with description and quantities contained herein does not necessarily guarantee consideration and/or subsequent approval for placement of materials at a reef site under the authority of PGP 37.

9. This PGP is valid for a period of five years from issuance, or until suspended or revoked, in whole or in part, if it is determined that the cumulative effects of any activities pursuant to them adversely affect water quality, navigation, or other public interest factors. Such suspension shall be effective upon issuance of a public notice, which shall indicate the date and reason for the suspension. Reviews will be conducted periodically to determine if continuation of this PGP is in the overall public interest.

10. Authorization will not be issued under this PGP, which will impact, affect, or otherwise degrade cultural resources such as archaeological, scientific, prehistoric, or historic sites or data.

11. No attempt shall be made by the Permittee to prevent the full and free use of the public of all navigable waters at or adjacent to the activity authorized by this permit.

12. The Permittee and/or the Permittees designated contractor shall be responsible for following the below listed standard manatee construction conditions:

a. The Permittee agrees that all personnel associated with the project will be advised that there are civil and criminal penalties for harming, harassing or killing manatees, which are protected under the Endangered Species Act of 1973 and the Marine Mammal Protection Act of 1972. The permittee and contractor will be held responsible for any manatee harmed, harassed or killed as a result of construction activities.

b. All vessels associated with the placement of material at a reef site will operate at "no wake/idle" speeds at all times while in the vicinity of a reef site. All vessels will follow routes of deep water whenever possible.

c. All on-site project personnel are responsible for observing water-related activities for the presence of manatees. All material placement activities in open water will cease upon sighting of manatees within 50 feet of the project area. Activities will not resume until the manatees have left the project area for at least 30 minutes.

d. Extreme care will be taken in lowering equipment and reef materials, including, but not limited to spuds, anchors, etc., below the water surface; taking any precaution not to harm any manatee(s) that may have entered the construction area undetected. All such equipment or materials will be lowered at the lowest possible speed.

e. The Permittee agrees that any collision with a manatee shall be reported immediately to the U.S. Army Corps of Engineers (912-652-5347), the U.S. Fish and Wildlife Service, Brunswick Field Office (912-265-9336), and Georgia Department of Natural Resources (Weekdays 8:00 a.m.-4:30 p.m.: 912-264-7218 or 1-800-272-8363; (nights and weekends: 1-800-241-4113). Any dead manatee(s) found in the project area must be secured to a stable object to prevent the carcass from being moved by the current before the authorities arrive. In the event of injury or mortality of a manatee, all aquatic activity in the project area must cease pending section 7 consultation under the Endangered Species Act with the U.S. Fish and Wildlife Service and the lead Corps.

f. The Permittee agrees that the contractor shall keep a log detailing sightings, collisions, or injury to manatees, which have occurred during the contract period.

g. The Permittee agrees that following project completion, a report summarizing the above incidents and sightings will be submitted to the U.S. Fish and Wildlife Service, 4980 Wildlife Drive Northeast, Townsend, Georgia 31331.

13. Positioning and placement of the reef material will be accomplished in a manner which will assure accurate positioning at the location(s) authorized.

14. The Permittee shall notify the following agencies in writing prior to placement of materials at an approved reef site, under authority this PGP:

Director, National Imagery Mapping Agency
Headquarters Bethesda
4600 Sangamore Road
Bethesda, Maryland 20816-5003

Director, National Ocean Survey
NOAA, US Department of Commerce
ATTN: Nautical Data Branch
N/CS26, Station 7317
1315 East-West Highway
Silver Spring, Maryland 20910-3282

The Minerals Management Service
US Department of Interior
281 Elden Street
Herndon, Virginia 20170

Commander (OAN)
Seventh Coast Guard District
Brickell Plaza Federal Building
909 SE First Avenue
Miami, Florida 33131-3050

U.S. Department of the Interior
Fish & Wildlife Service
4980 Wildlife Drive Northeast
Townsend, Georgia 31331

U.S. Environmental Protection Agency
Wetlands Protection Section, Region IV
61 Forsyth Street SW
Atlanta, Georgia 30303-8960

U.S. Army Corps of Engineers, Savannah District
ATTN: Regulatory Division
100 West Oglethorpe Avenue
Savannah, Georgia 31402

FURTHER INFORMATION:

1. Congressional Authorities: Authorization to undertake the activities described above are pursuant to Section 10 of the Rivers and Harbors Act of 1899 (33 USC 403) and Section 404 of the Clean Water Act (33 USC 1344).

2. Limits of this authorization:

a. This Permit does not obviate the need to obtain other Federal, State or local authorizations required by law.

b. This Permit does not grant any property rights or exclusive privileges.

c. This Permit does not authorize injury to the property or rights of others.

d. This Permit does no authorize interference with any existing or proposed Federal projects.

3. Limits of Federal Liability. In issuing this Permit, the Federal Government does not assume any liability for the following:

a. Damages to the permitted project or uses thereof as a result of other permitted or unpermitted activities or from natural causes.

b. Damages to the permitted project or uses thereof as a result of current or future activities undertaken by or on behalf of the United States in the public's interest.

c. Damages to person, property or to other permitted or unpermitted activities or structures caused by the activity authorized by this Permit.

d. Design or construction deficiencies associated with the permitted work.

e. Damage claims associated with any future modification, suspension or revocation of this Permit.

4. Re-evaluation of Permit Decision. The Corps may reevaluate its decision on any activity authorized by a PGP at any time the circumstances warrant. Circumstances that would require a reevaluation include, but are not limited to, the following:

a. The Permittee's failure to comply with the terms and conditions of the Permit.

b. The information provided by the permittee in support of a Permit application proves to be false, incomplete or inaccurate.

c. Significant new information surfaces which the Corps did not consider in reaching the original public interest decision. Such a re-evaluation may result in a determination that it is

appropriate to use the suspension, modification and revocation procedures contained in 33 CFR 325.7 or enforcement procedures provided in 33 CFR 326.4 and 326.5. The referenced enforcement procedures provide for the issuance of an administrative order requiring the permittee to comply with the terms and conditions of his Permit authorizations and for the initiation of legal action where appropriate. The permittee will be required to pay for any corrective measures ordered by the Corps, and if the permittee fails to comply with such a directive, the Corps may in certain situations (such as those specified in 33 CFR 209.170) accomplish the corrective measures by contract or otherwise and bill the permittee for the cost.

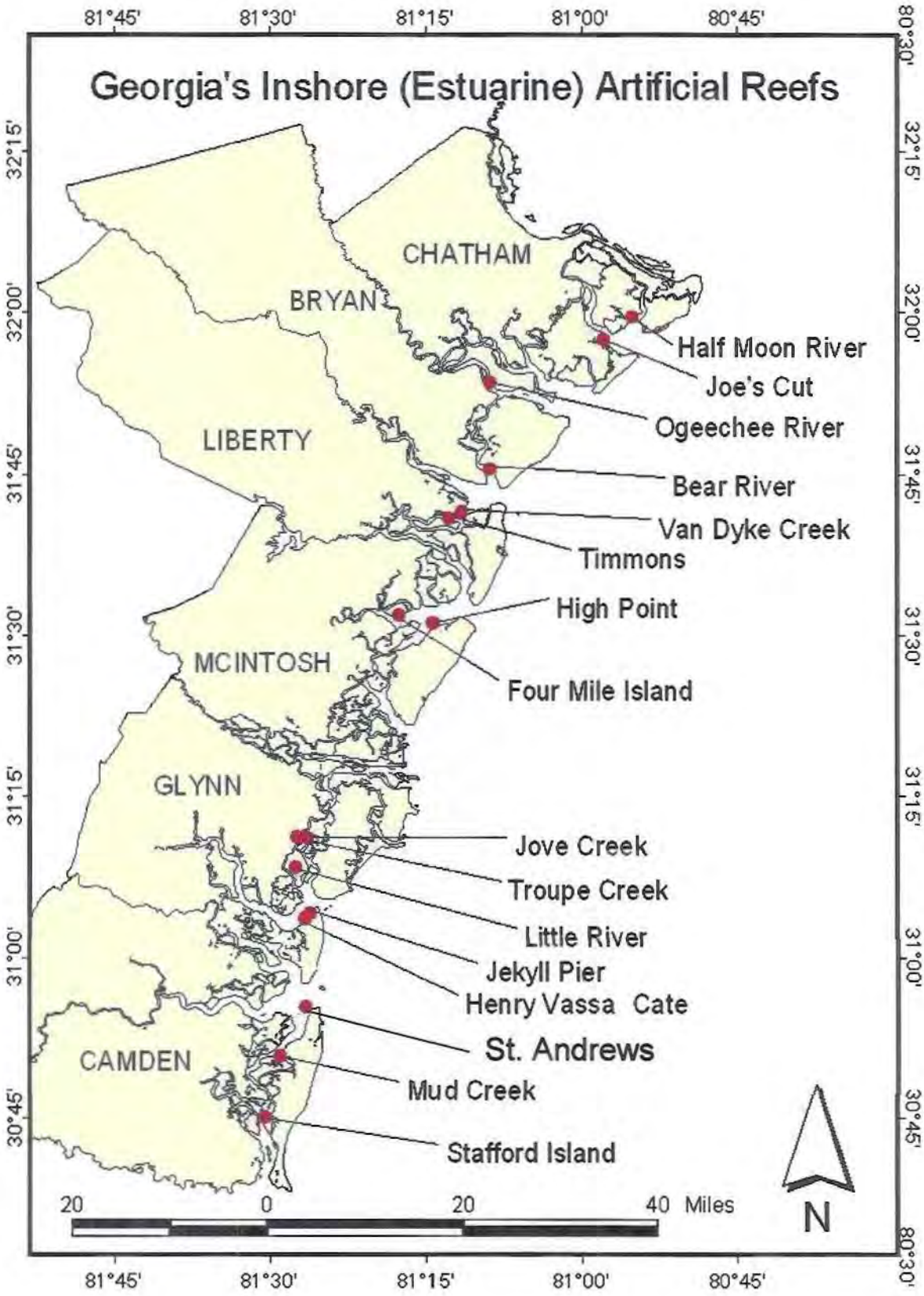
This PGP becomes effective on _____, when the Federal official, designated to act in behalf of the Secretary of the Army, has signed below.

_____ _____

for Jeffrey M. Hall Date
Colonel, US Army
District Engineer

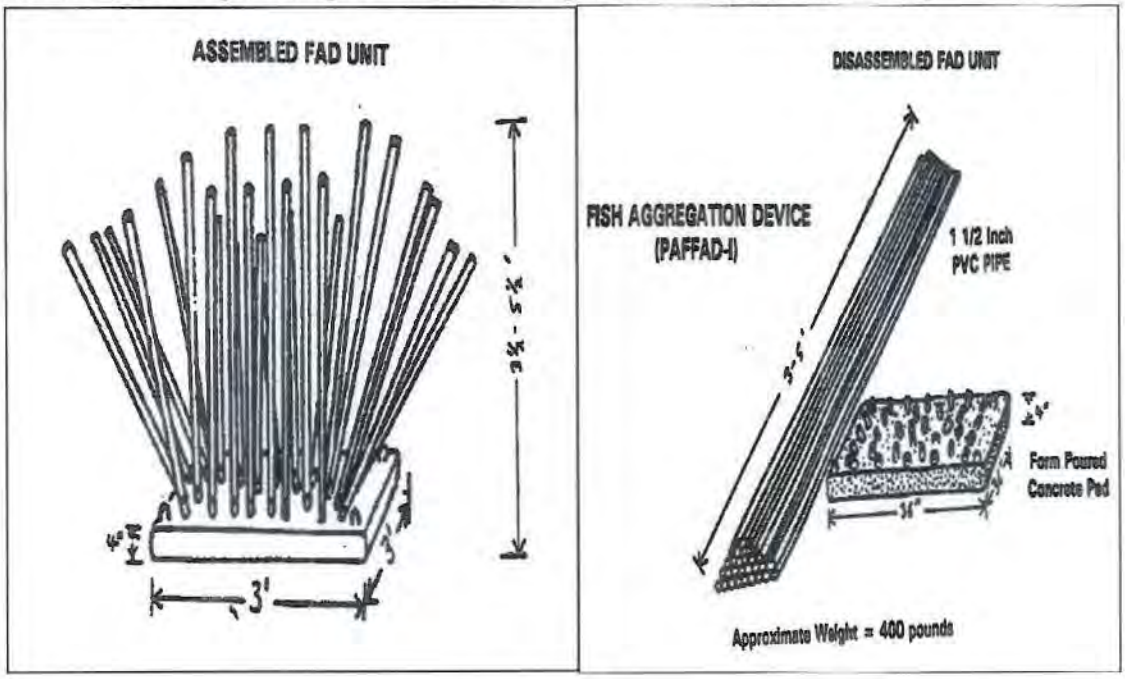
Encls

APPENDIX I-Map of 16 Inshore Reef Sites

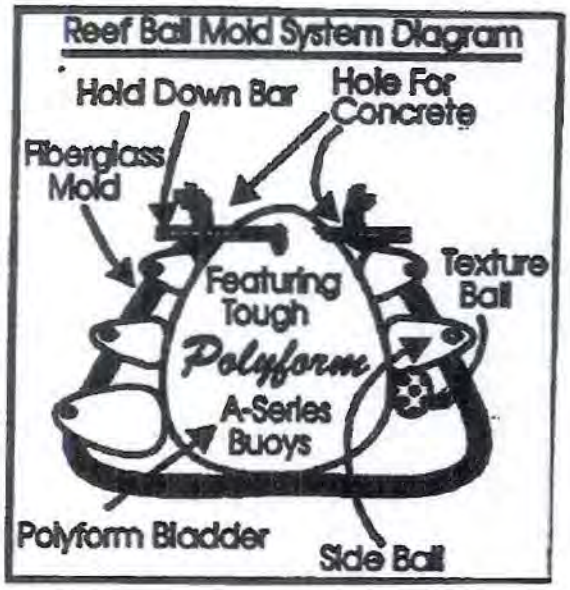


APPENDIX II-Examples of Materials Deployed

Concrete Materials: Existing Fish Aggregation Device (FAD) units that are proposed for future reef construction material. Existing FAD units consists of a 3-foot square, 4 inch thick concrete pad with 1 ½ inch diameter PVC protruding from the surface of pad, constructed by Department personnel.

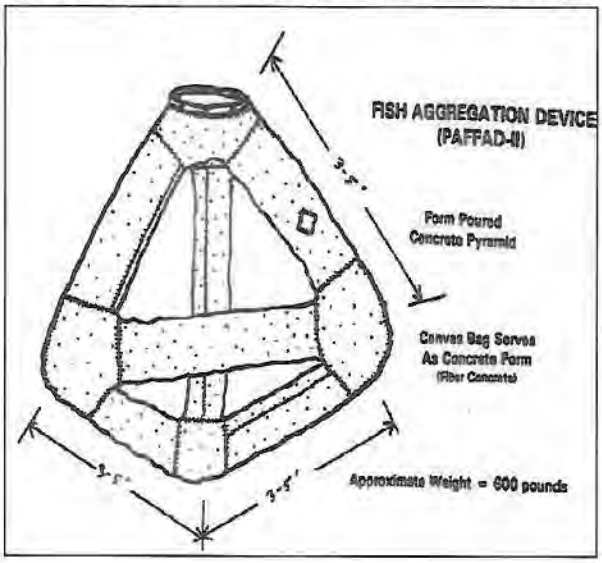


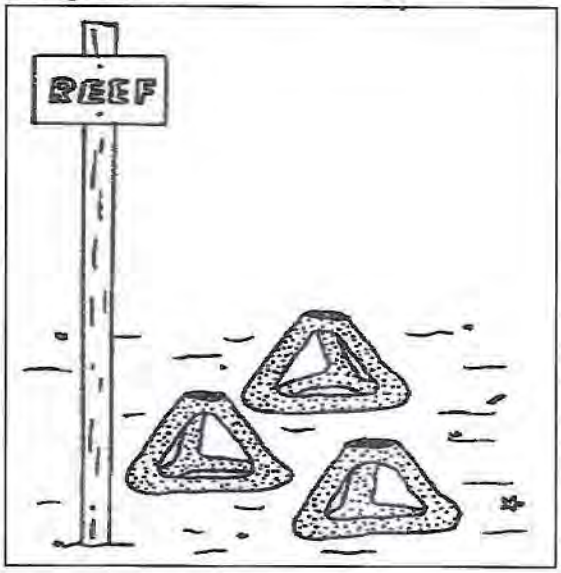
Commercially constructed FAD units, by Reef Ball Development Group, Ltd., currently exist on site and are proposed for future reef materials. FAD's are known as "Bay or Reef Balls" and made by pouring concrete into a fiberglass mold containing a central Polyform buoy surrounded by various sized inflatable balls to make holes. FAD units measure 3 to 5 feet in diameter.



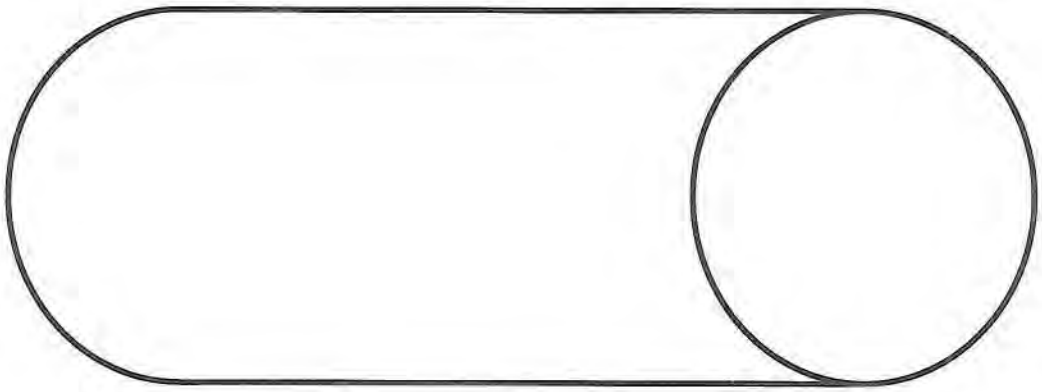
APPENDIX II-Examples of Materials Deployed

Existing FAD units that are proposed for future reef construction material. FAD units consist of a 3 to 5 foot high concrete pyramid constructed by pouring fiber concrete into a suspended canvas bag. Height of the pyramid ranges from 3 to 5 feet with the diameter of the pyramid legs ranging from 6 to 8 inches. FAD units are constructed by Department personnel.



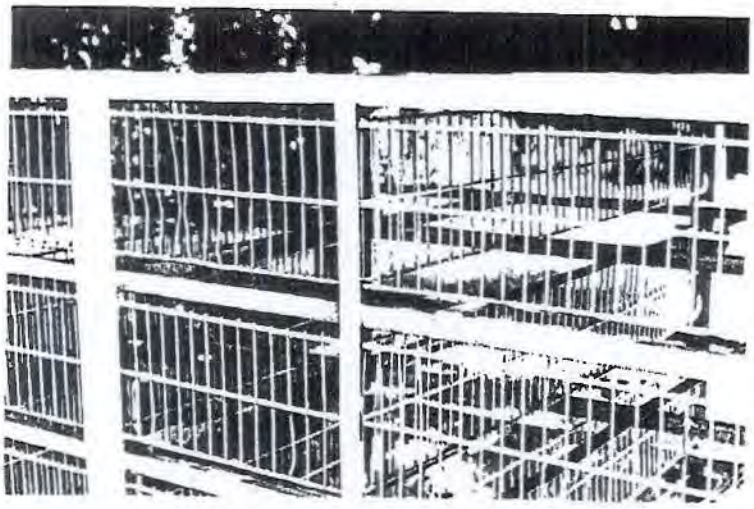


Culvert Materials: Concrete and Plastic (PVC, HDPE) Pipes of various sizes and diameters.

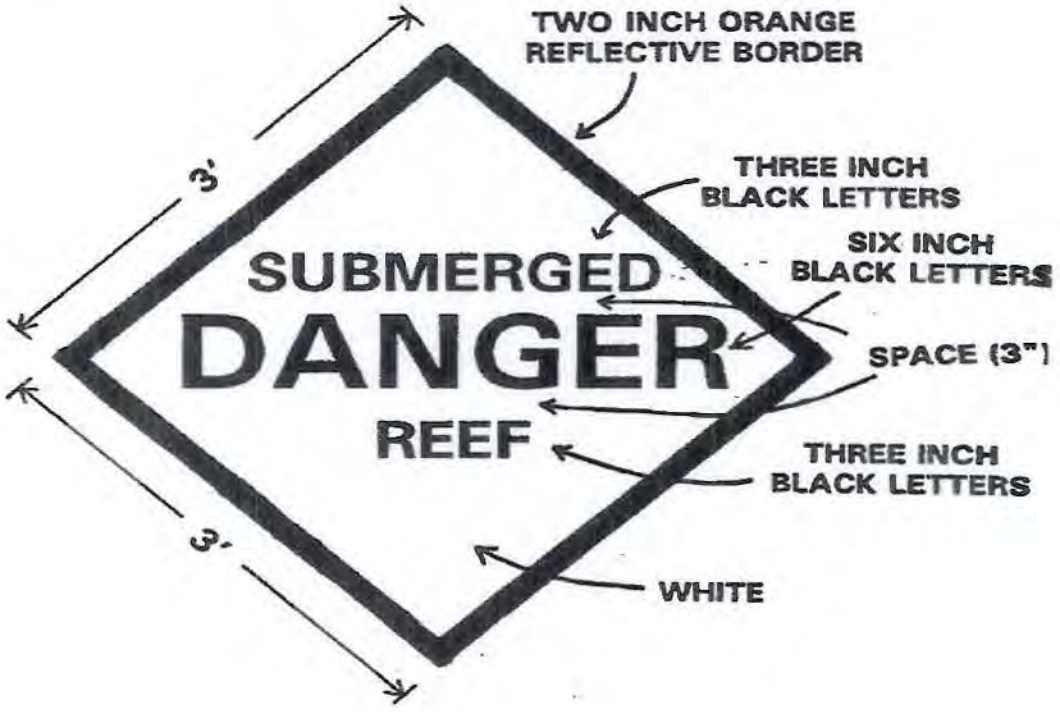


APPENDIX II-Examples of Materials Deployed

Wire Materials: Transport cages used as reef materials: approximate dimensions 4' x 5' x 8'.



Signage: Submerged reef warning signs are constructed of 0.80 gauge aluminum. Signs measure 36" x 36" and have a 2" thick reflective orange border and a reflective white background. The words "DANGER SUBMERGED REEF" are presented in black letters.



APPENDIX III-Halfmoon River Site

Figure 1. Halfmoon River Inshore Artificial Reef Site Shown in Red
Nautical Chart #11512 (NOAA: Savannah River and Wassaw Sound)

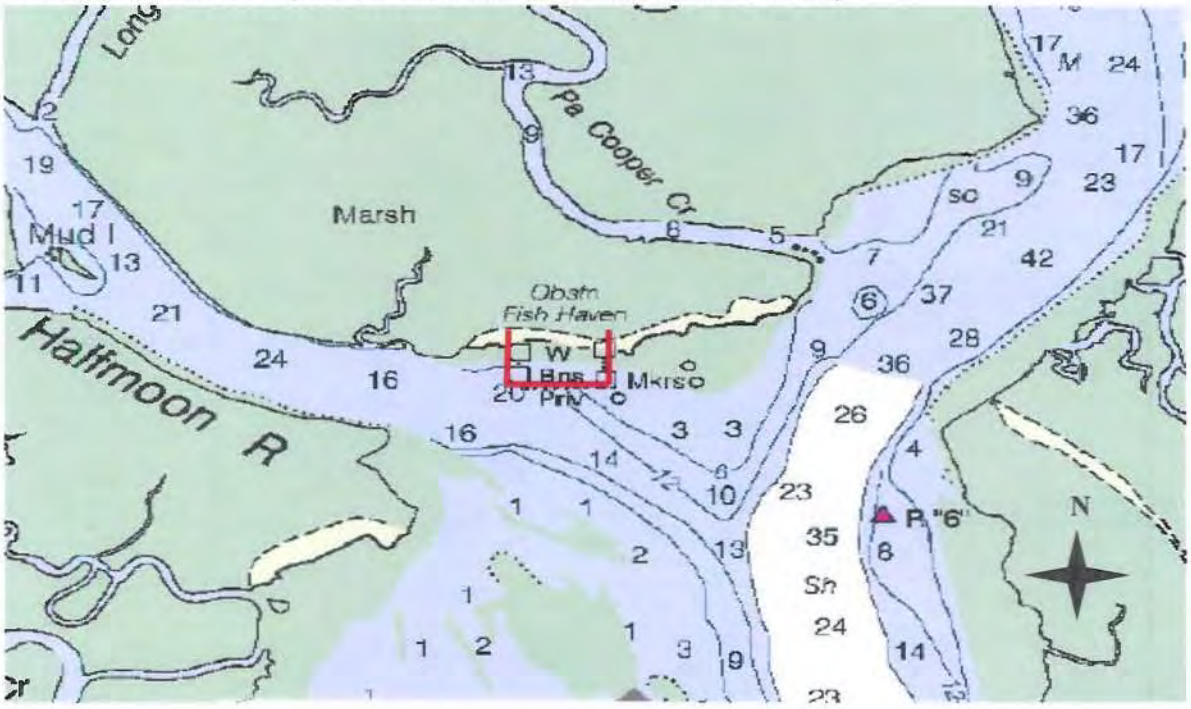
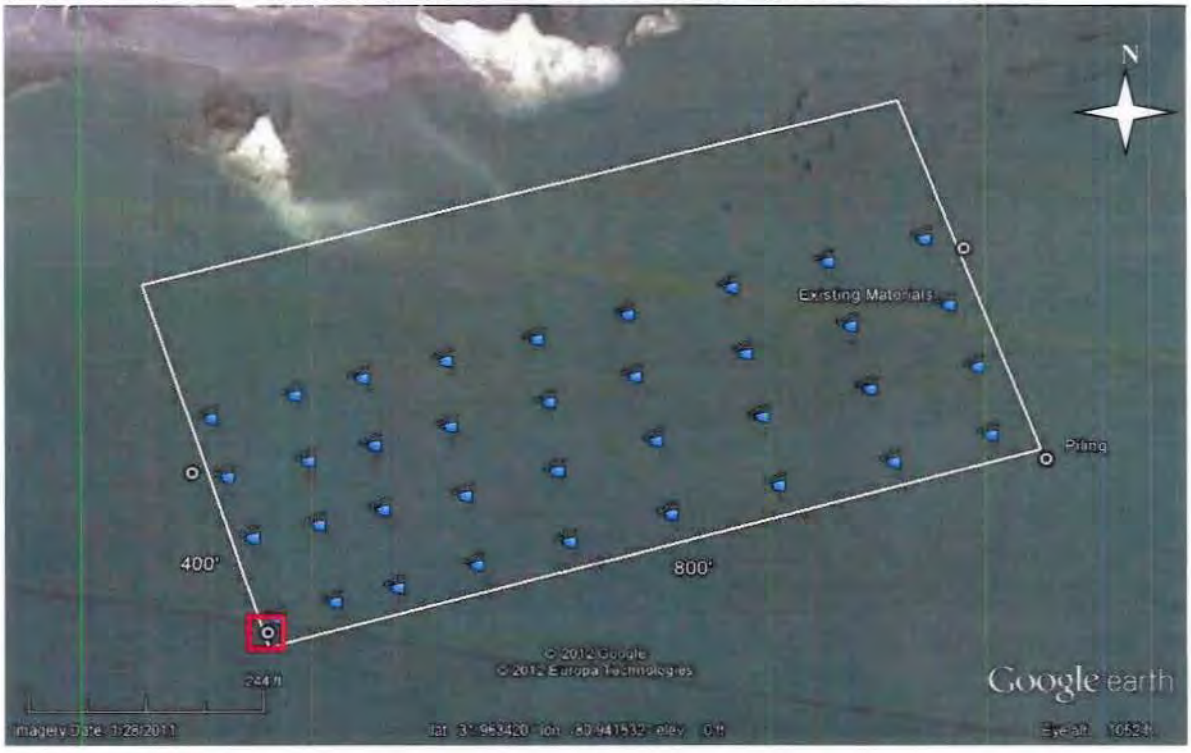


Figure 2. Reef Site Aerial Photograph shown with existing pilings, materials, and footprint (400' x 800'). For navigational purposes the southernmost piling is outlined in red.



APPENDIX III-Halfmoon River Site

Table 2	Piling Locations: Latitude & Longitude	Southernmost Piling Location: Latitude & Longitude for Navigational Purposes	Total Area
Site Name: Halfmoon River	31.963133° / -80.942867°	**31.962667° / -80.942617°**	320,000 Ft^2 7.35 Acres
	31.963793° / -80.940305°		
	31.963173° / -80.940032°		

Figure 3a.

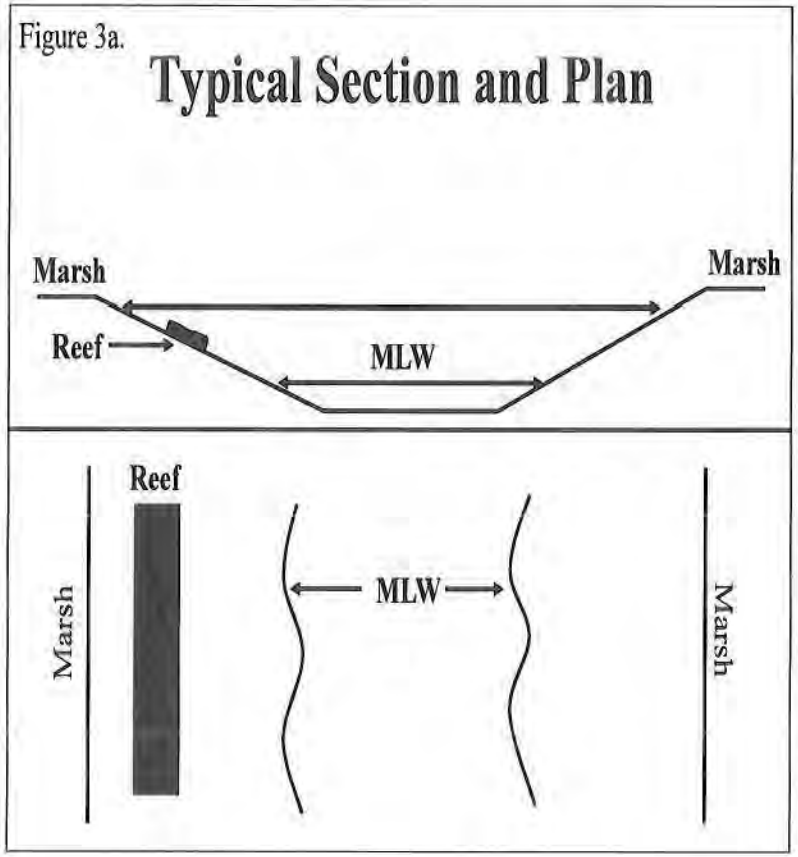
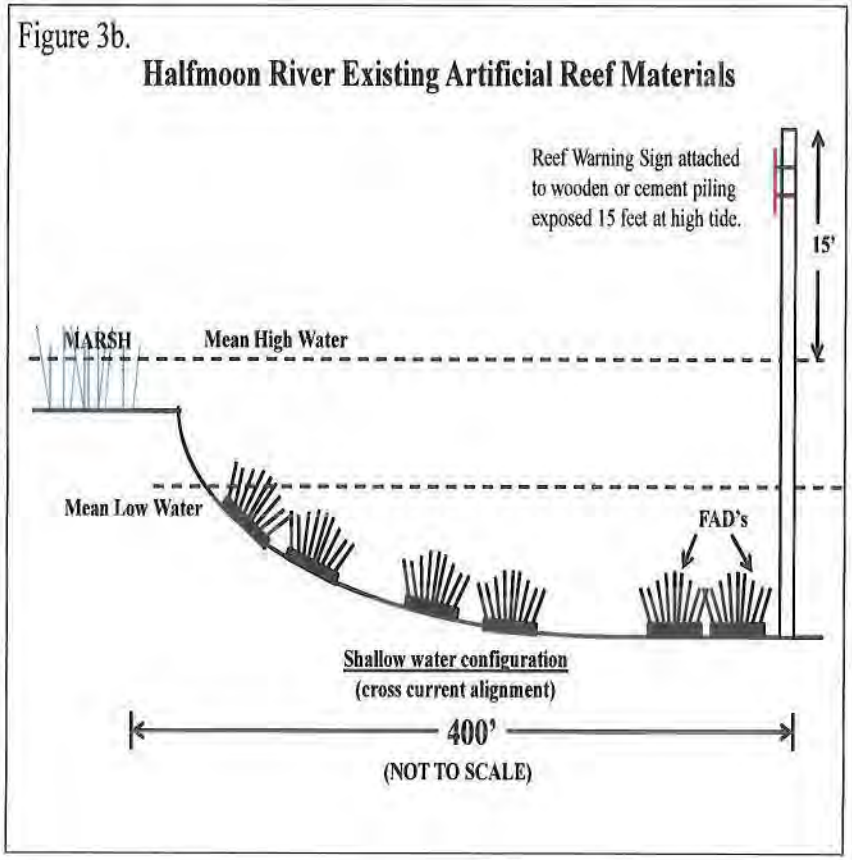


Figure 3b.



APPENDIX IV- Romerly Marsh Creek (Joe's Cut) Site

Figure 1. Romerly Marsh Creek (Joe's Cut) Inshore Artificial Reef Site Shown in Red
Nautical Chart #11512 (NOAA: Savannah River and Wassaw Sound)

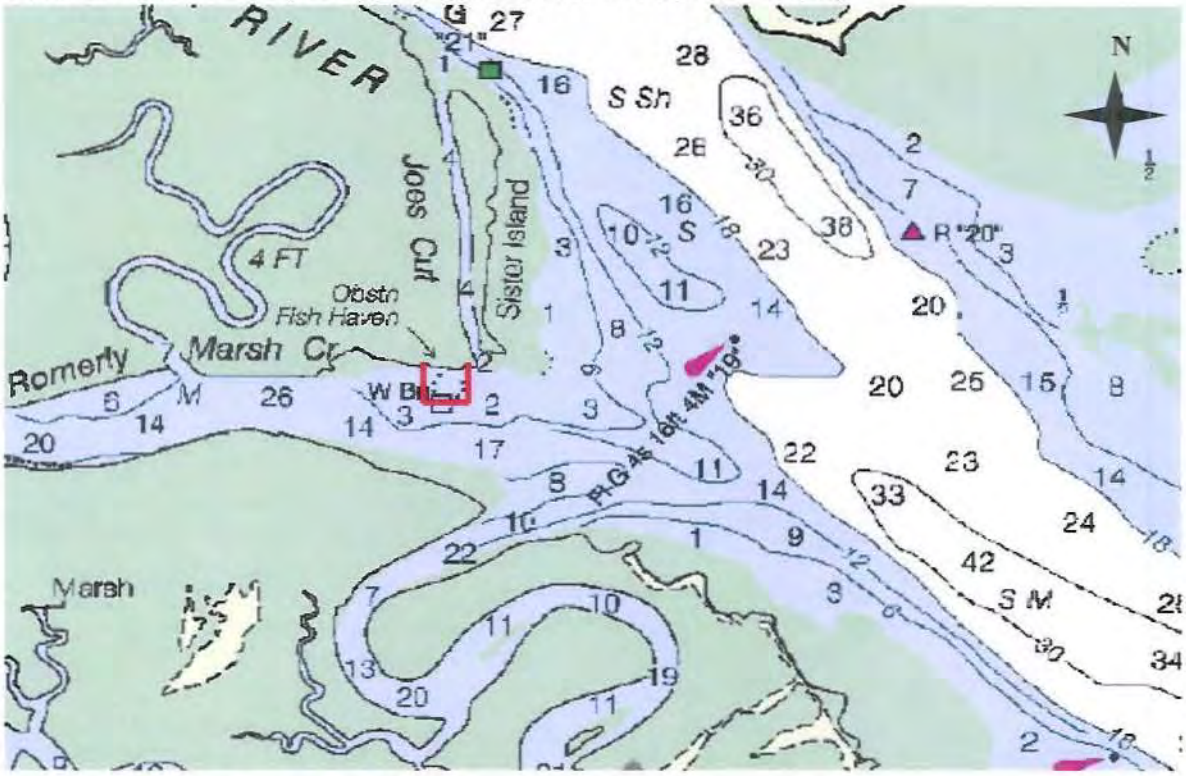


Figure 2. Reef Site Aerial Photograph shown with existing piling, materials, and footprint (250' x 550'). For navigational purposes the only piling is outlined in red.

APPENDIX IV- Romerly Marsh Creek (Joe's Cut) Site

Table 2	Piling Location: Latitude & Longitude for Navigational Purposes	Total Area
Site Name: Romerly Marsh Creek	**31.931617 °/ -80.987800°**	137,500 Ft^2 3.16 Acres

Figure 3a.

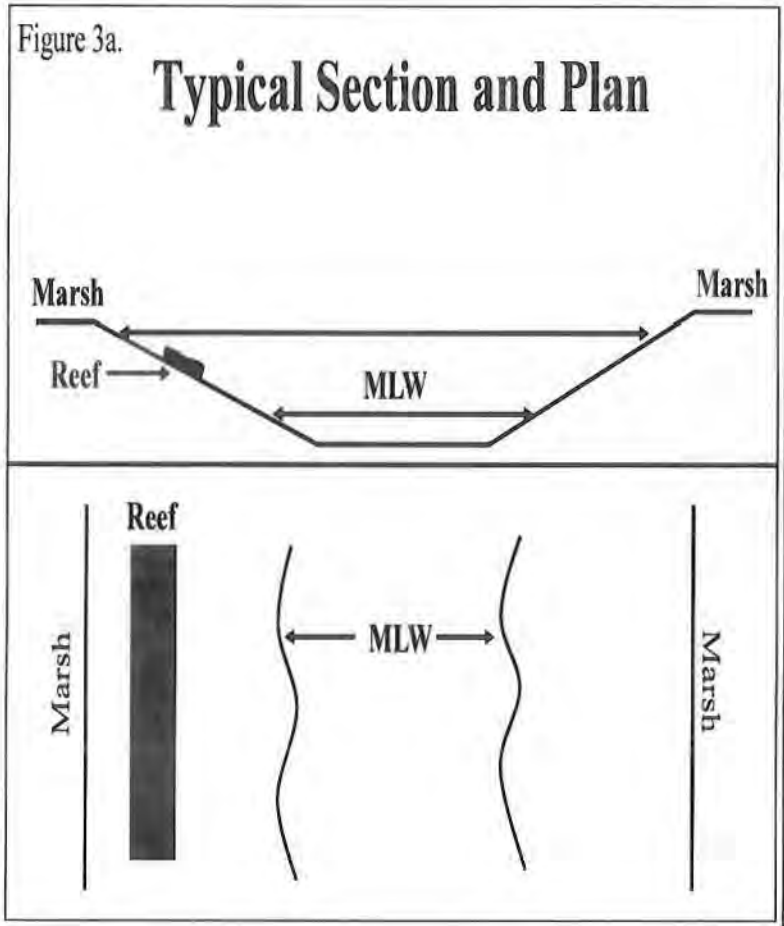
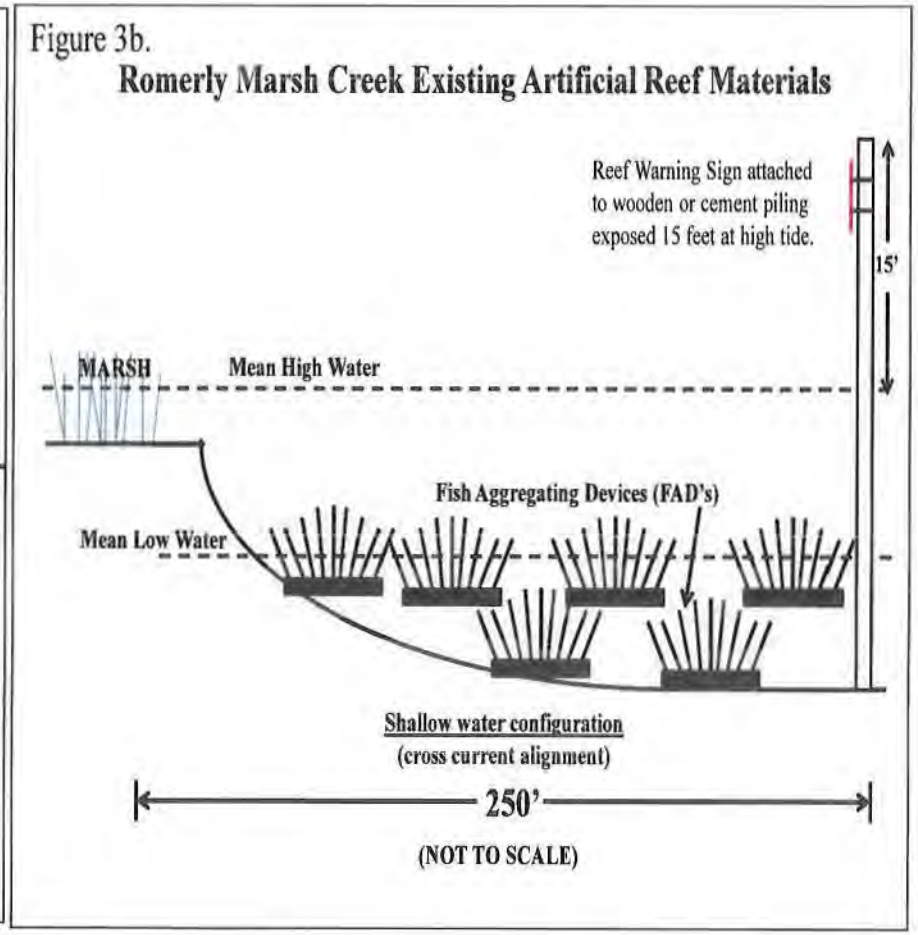


Figure 3b.



APPENDIX V- Ogeechee River Site

Figure 1. Ogeechee River Inshore Artificial Reef Site Shown in Red
Nautical Chart #11511 (NOAA: Ossabaw and St. Catherines Sounds)

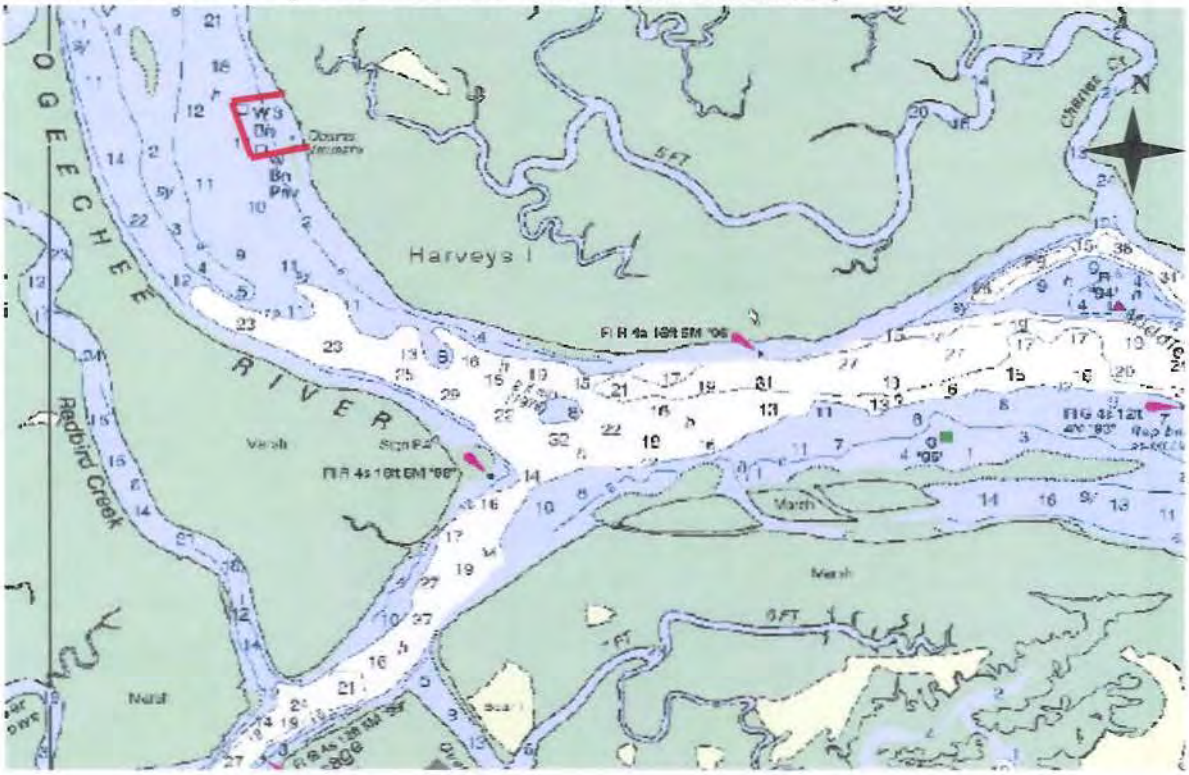
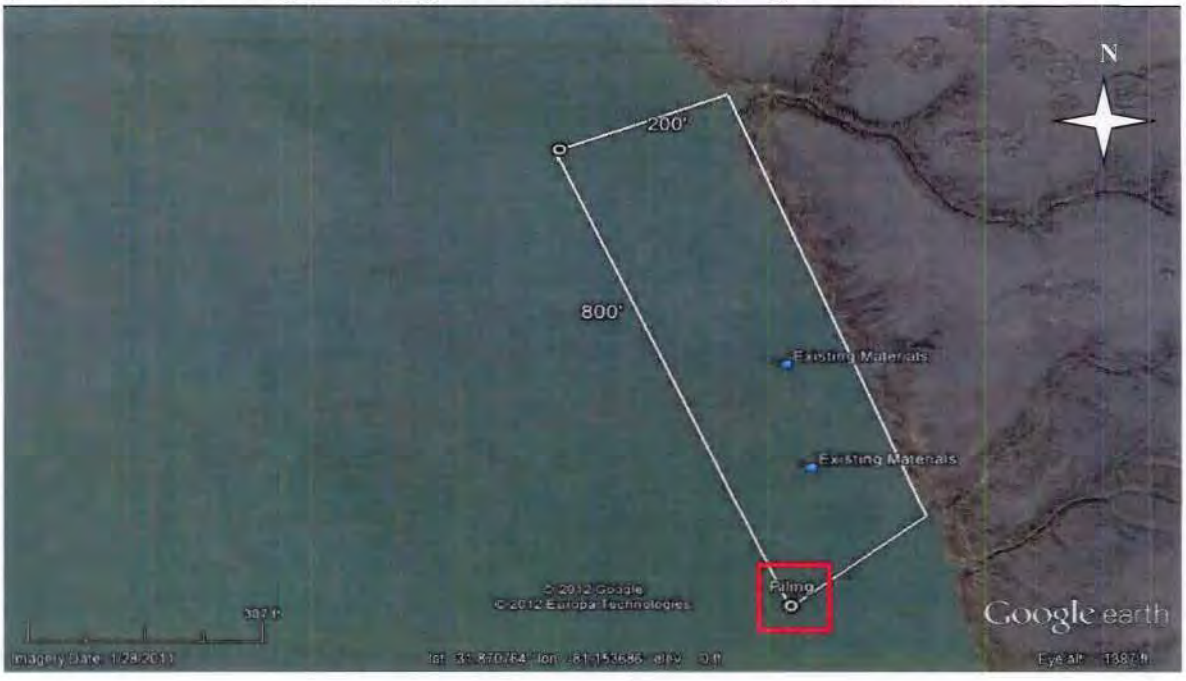


Figure 2. Reef Site Aerial Photograph shown with existing pilings, materials, and footprint (200' x 800'). For navigational purposes the southernmost piling is outlined in red.



APPENDIX V- Ogeechee River Site

Table 2	Piling Location: Latitude & Longitude	Southernmost Piling Location: Latitude & Longitude for Navigational Purposes	Total Area
Site Name: Ogeechee River	31.871633° / -81.153710°	**31.869550° / -81.153017°**	160,000 Ft^2 3.67 Acres

Figure 3a.

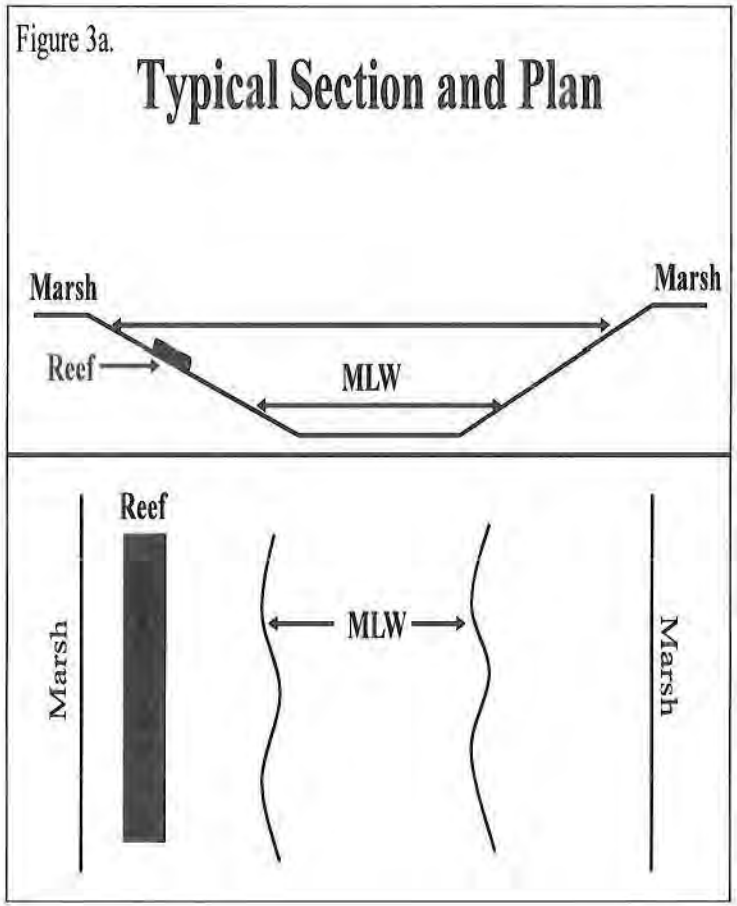
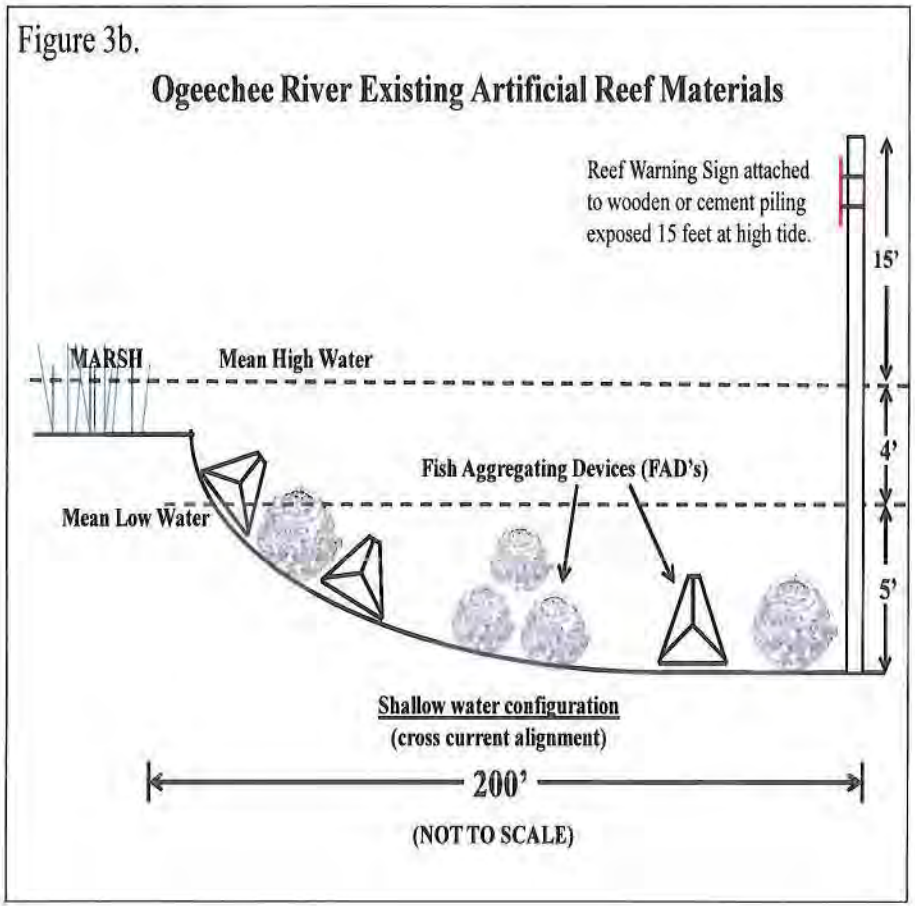


Figure 3b.



APPENDIX VI- Timmons River Site

Figure 1. Timmons River Inshore Artificial Reef Site Shown in Red
Nautical Chart #11511 (NOAA: Ossabaw and St. Catherines Sounds)

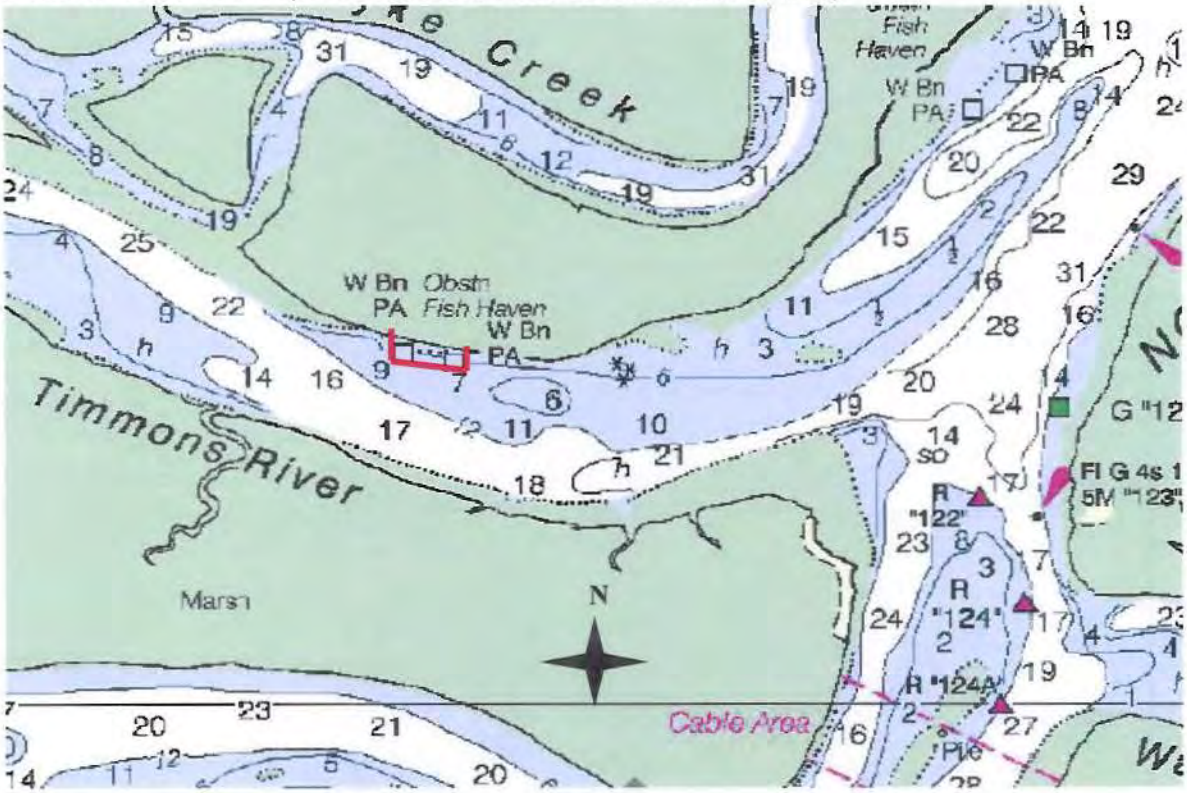
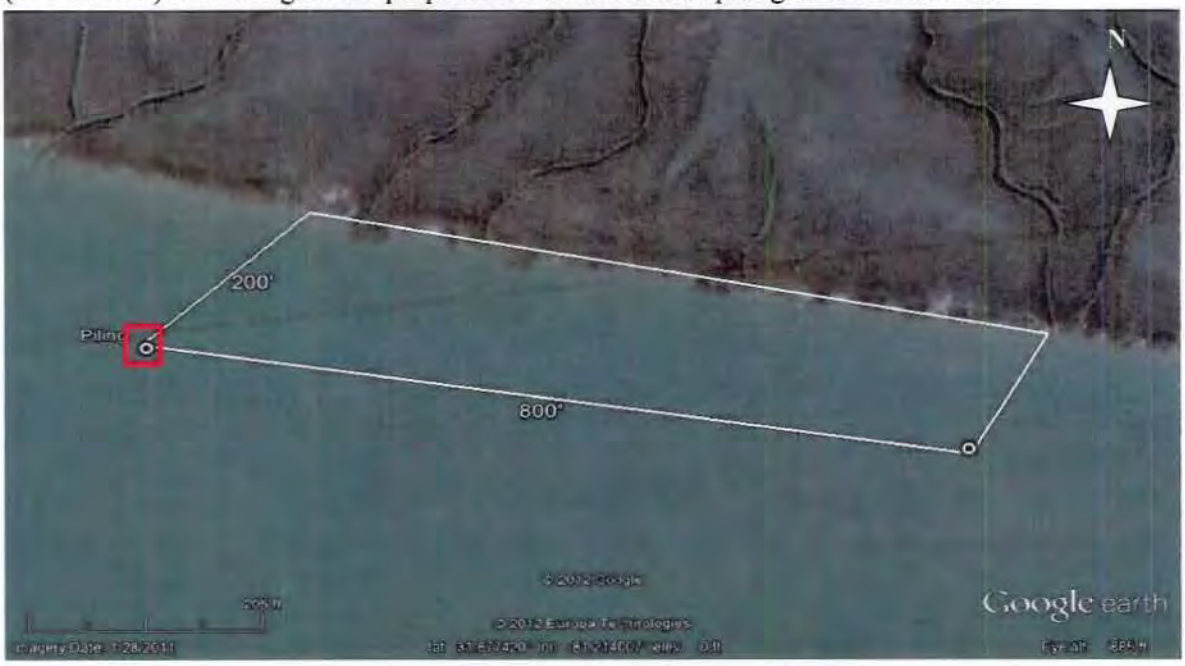


Figure 2. Reef Site Aerial Photograph shown with existing pilings, materials, and footprint (200' x 800'). For navigational purposes the southernmost piling is outlined in red.



APPENDIX VI- Timmons River Site

Table 2	Piling Location: Latitude & Longitude	Southernmost Piling Location: Latitude & Longitude Reference for Navigational Purposes	Total Area
Site Name: Timmons River	31.677100° / -81.212950°	**31.677383° / -81.215250°**	160,000 Ft^2 3.67 Acres

Figure 3a.

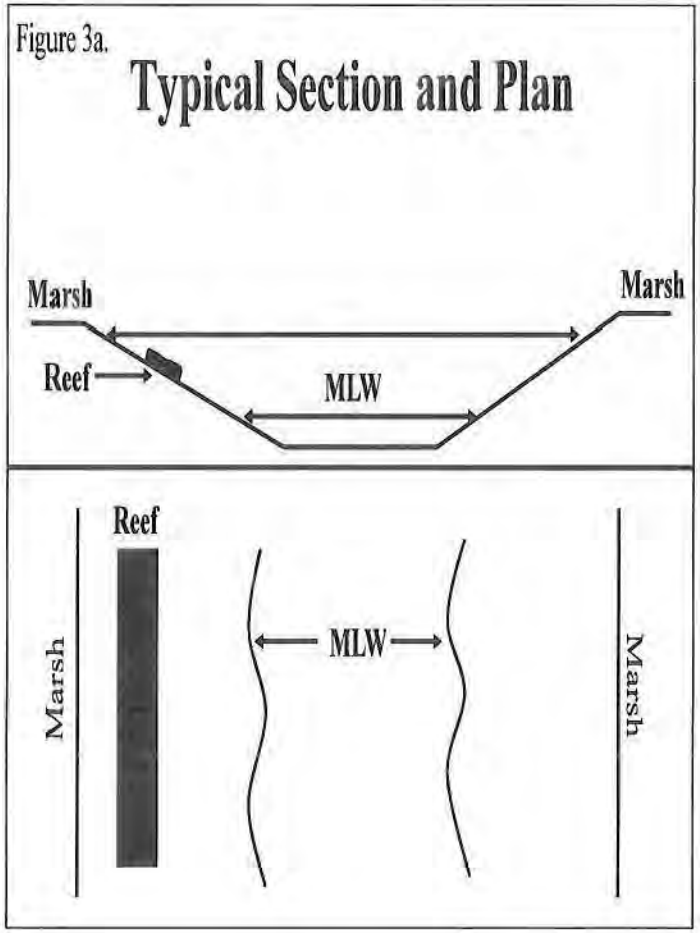
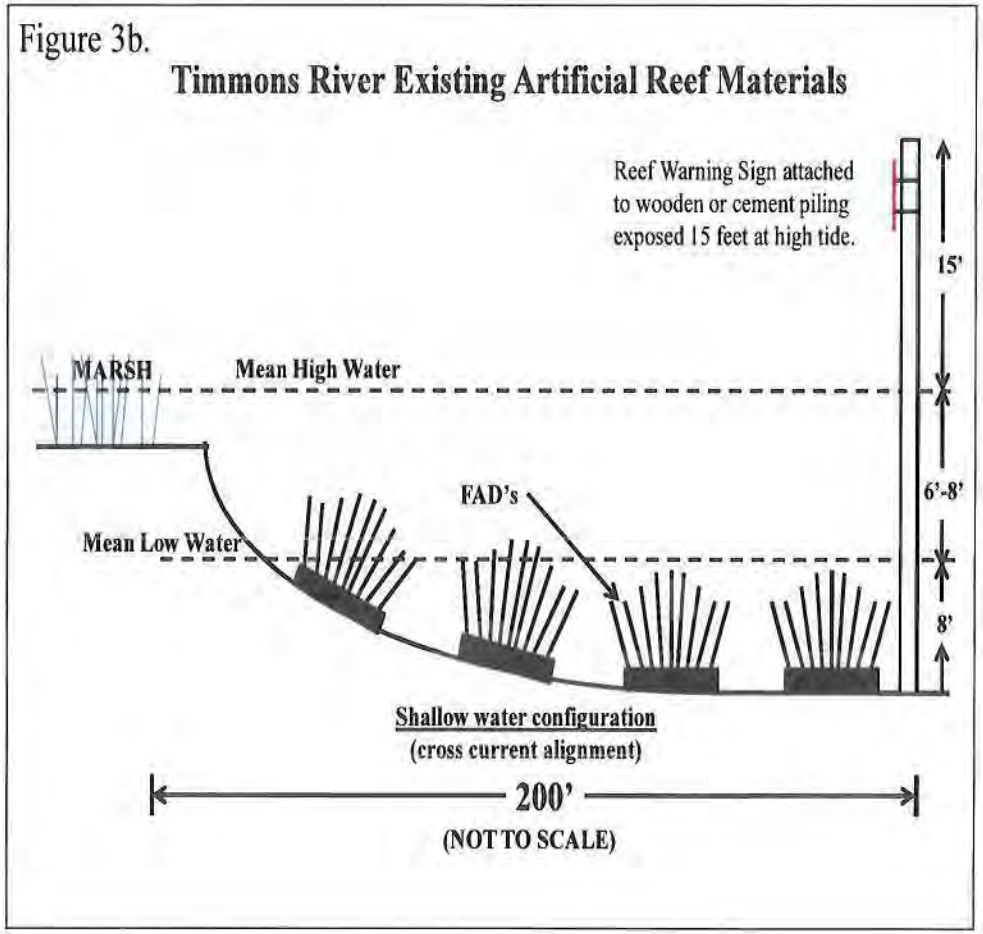


Figure 3b.



APPENDIX VII- Van Dyke Creek Site

Figure 1. Van Dyke Creek Inshore Artificial Reef Site Shown in Red
Nautical Chart #11511 (NOAA: Ossabaw and St. Catherines Sounds)

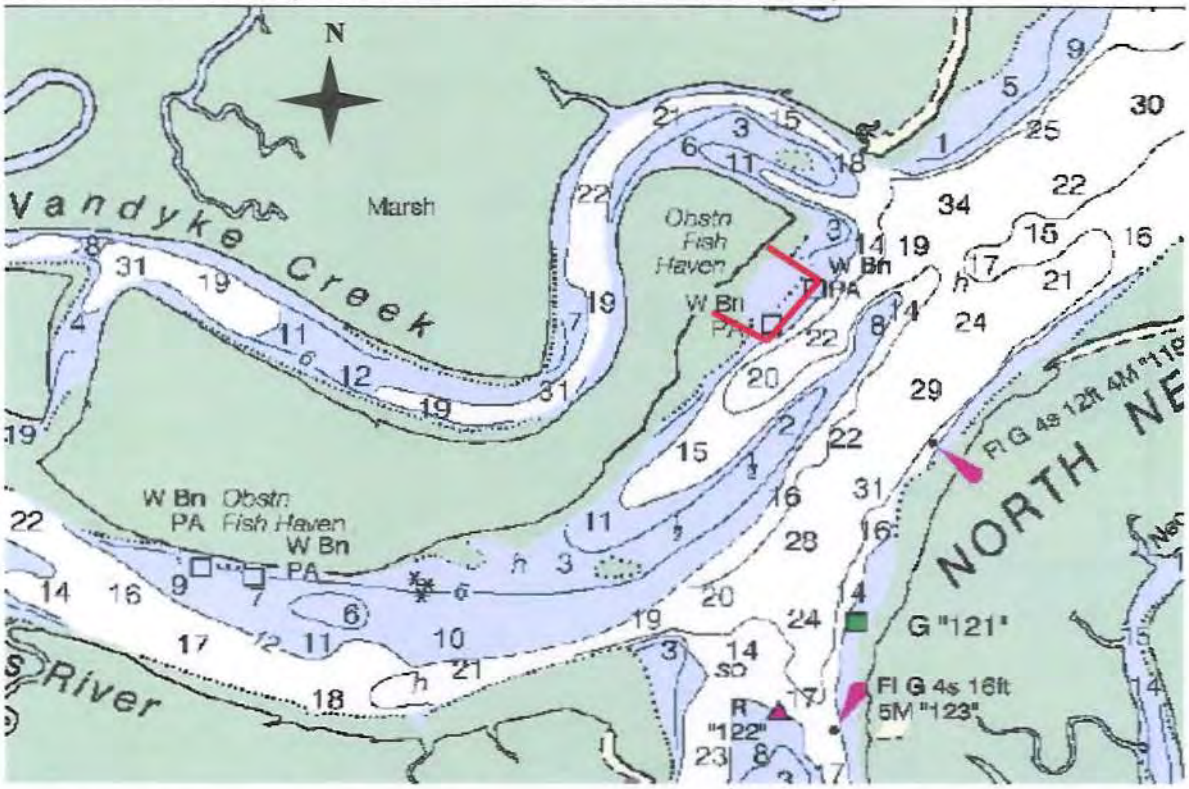


Figure 2. Reef Site Aerial Photograph shown with existing pilings, materials, and footprint (200' x 800'). For navigational purposes the southernmost piling is outlined in red.

APPENDIX VII- Van Dyke Creek Site

Table 2	Piling Location: Latitude & Longitude	Southernmost Piling Location: Latitude & Longitude for Navigational Purposes	Total Area
Site Name: Van Dyke Creek	31.687067° / -81.196633°	**31.685450° / -81.198167°**	160,000 Ft^2 3.67 Acres

Figure 3a.

Typical Section and Plan

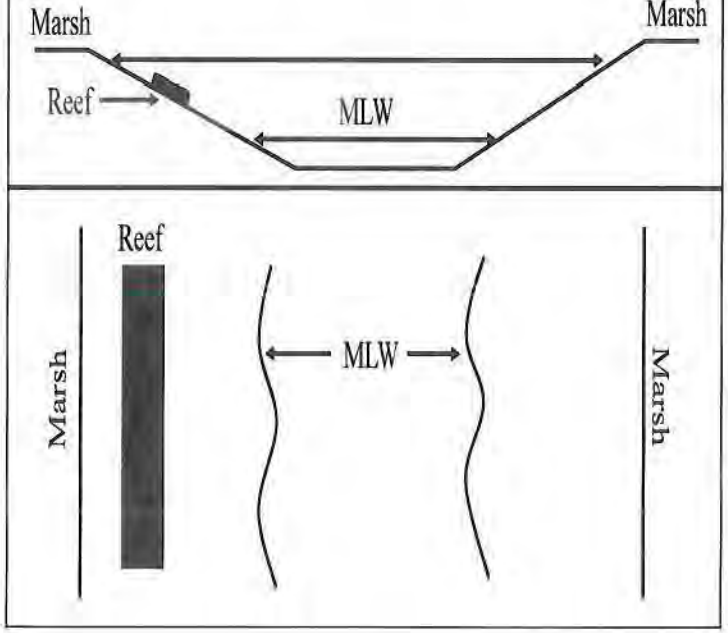
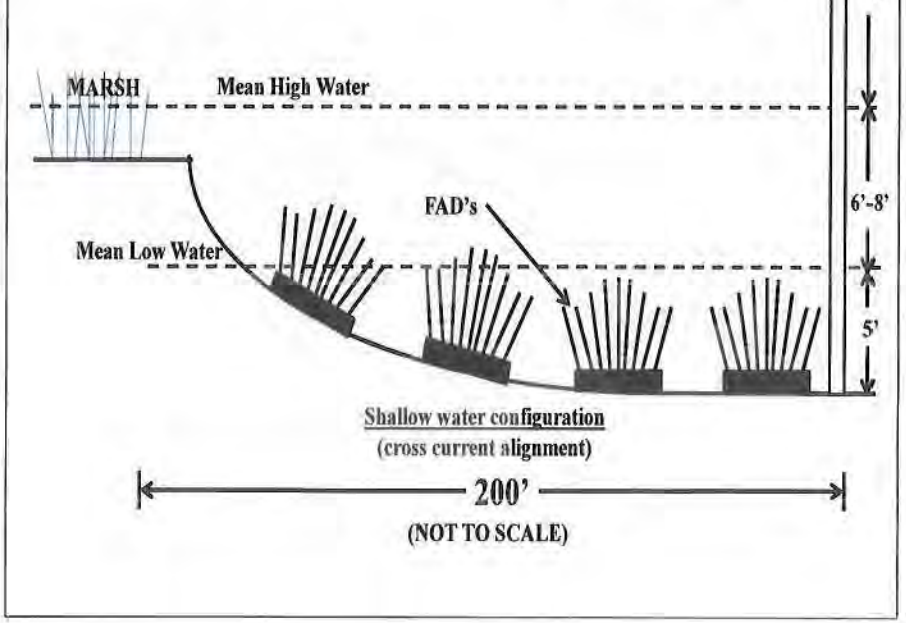


Figure 3b.

Van Dyke Creek Existing Artificial Reef Materials



APPENDIX VIII- Bear River Site

Figure 1. Bear River Inshore Artificial Reef Site Shown in Red
Nautical Chart #11511 (NOAA: Ossabaw and St. Catherines Sounds)

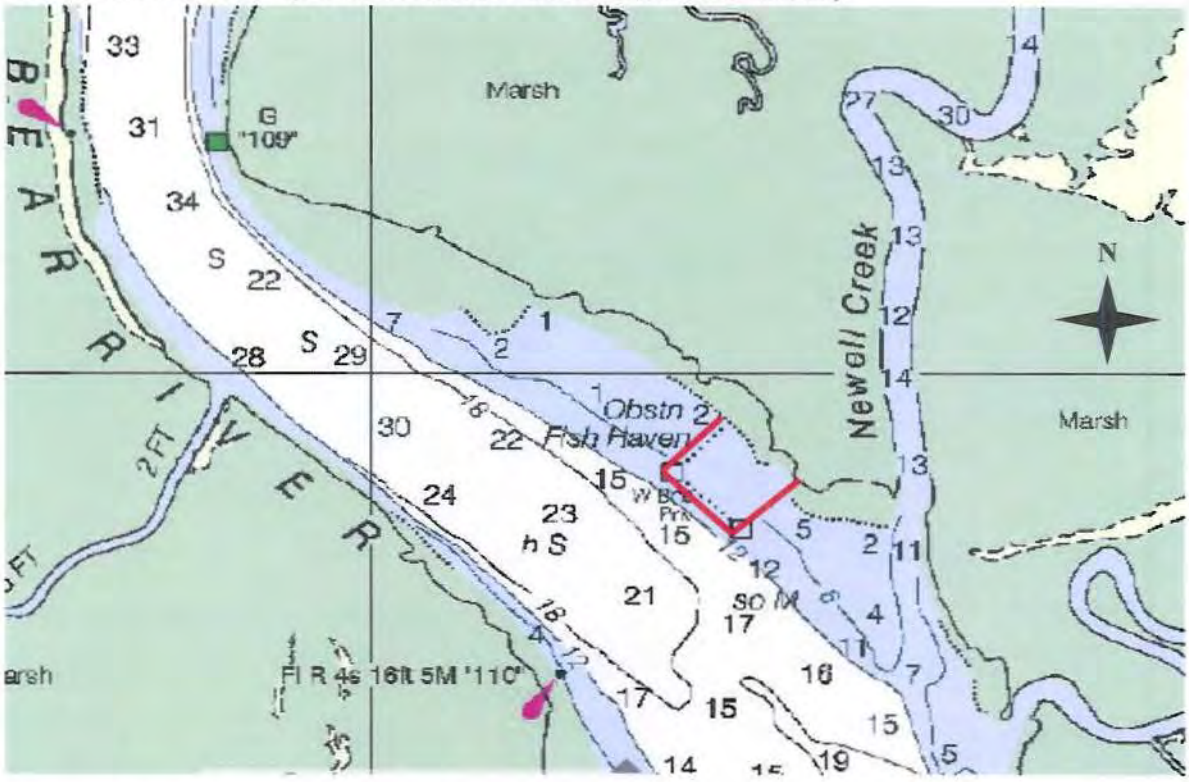


Figure 2. Reef Site Aerial Photograph shown with existing pilings, materials, and footprint (1,000' x 800'). For navigational purposes the southernmost piling is outlined in red.

APPENDIX VIII- Bear River Site

Table 2	Piling Location: Latitude & Longitude	Southernmost Piling Location: Latitude & Longitude for Navigational Purposes	Total Area
Site Name: Bear River	31.7471830° / -81.157050°	**31.745333° / -81.155050°**	800,000 Ft^2 18.37Acres

Figure 3a.

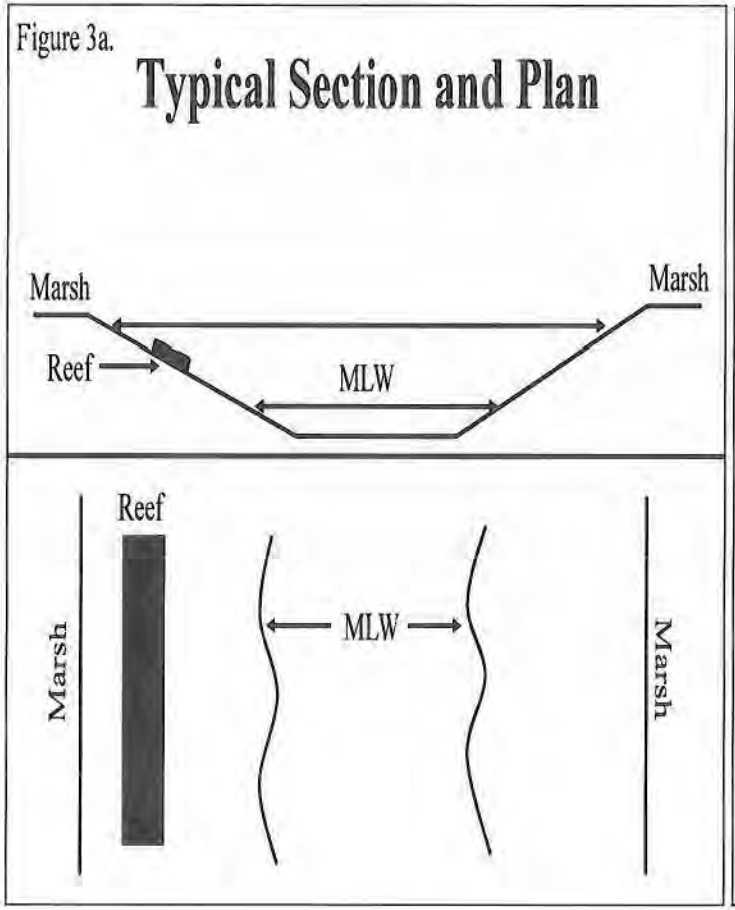
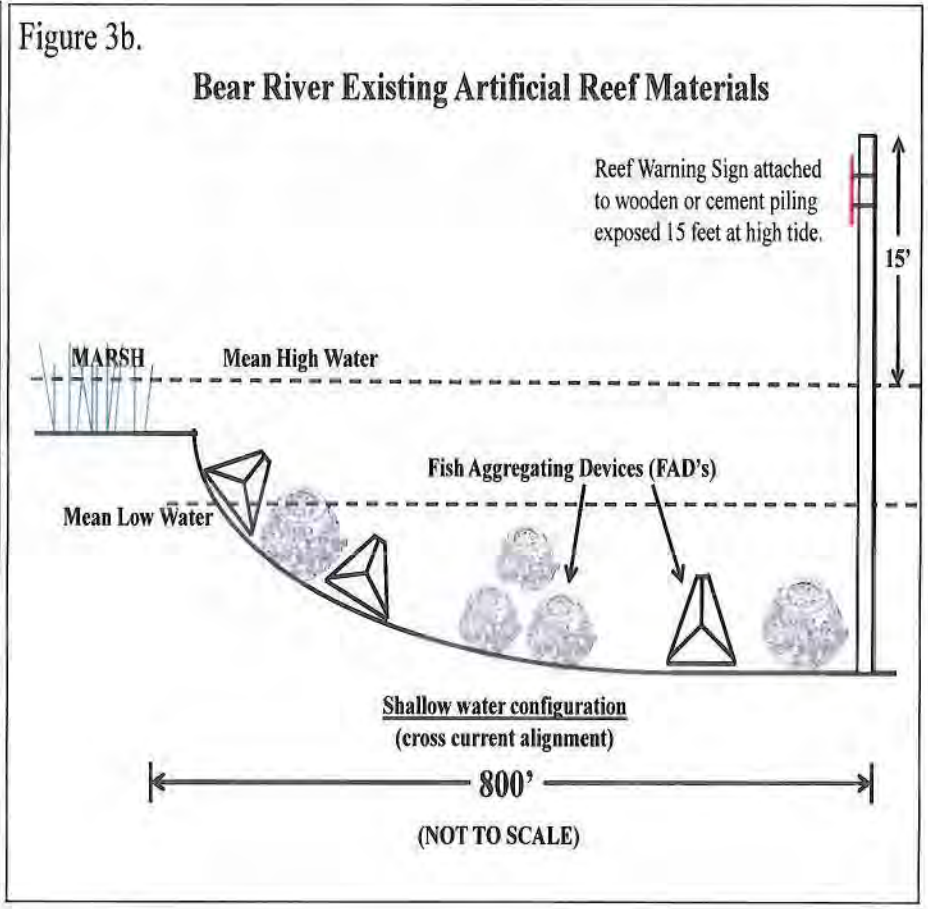


Figure 3b.



APPENDIX IX- Four Mile Island Site

Figure 1. Four Mile Island Inshore Artificial Reef Site Shown in Red
Nautical Chart #11510 (NOAA: Sapelo and Doboy Sounds)

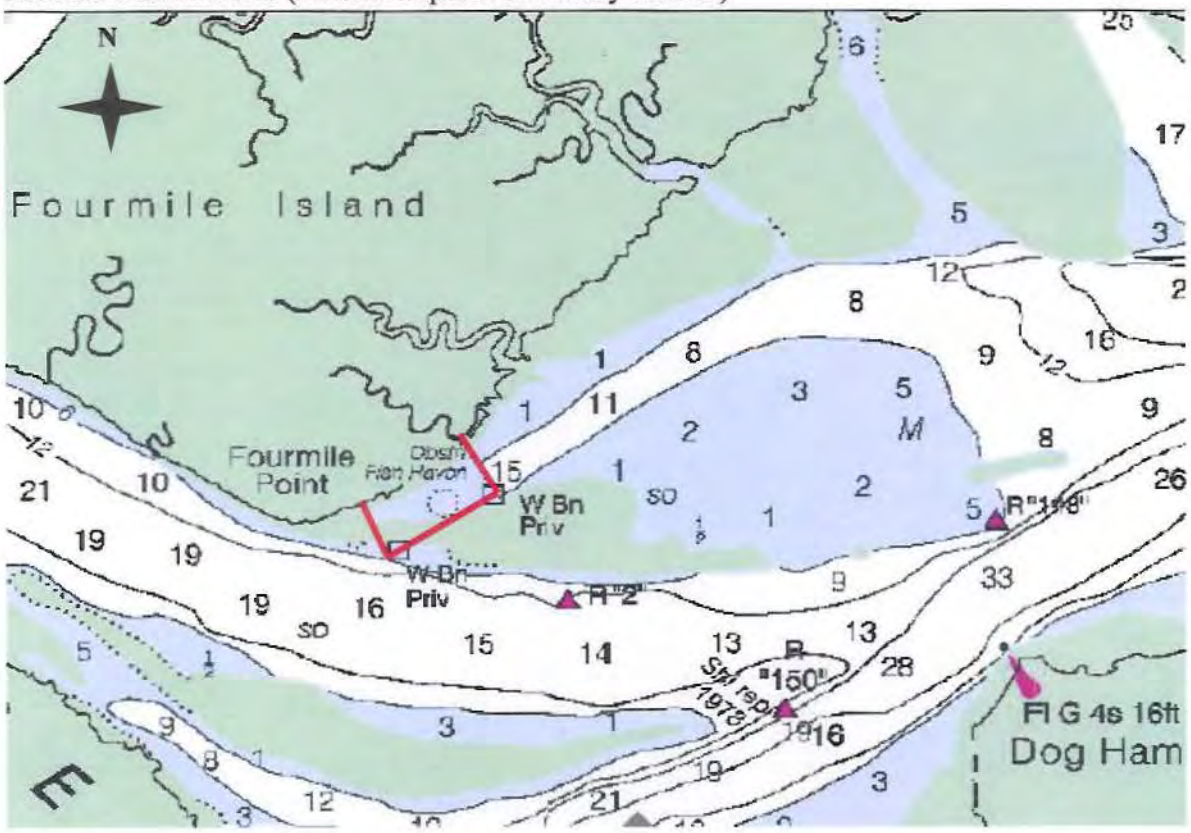


Figure 2. Reef Site Aerial Photograph shown with existing pilings, materials, and footprint (200' x 800'). For navigational purposes the southernmost piling is outlined in red.

APPENDIX IX- Four Mile Island Site

Table 2	Piling Location: Latitude & Longitude	Southernmost Piling Location: Latitude & Longitude for Navigational Purposes	Total Area
Site Name: Four Mile Island	31.537683° / -81.288500°	**31.536283° / -81.290550°**	160,000 Ft^2 3.67 Acres

Figure 3a.

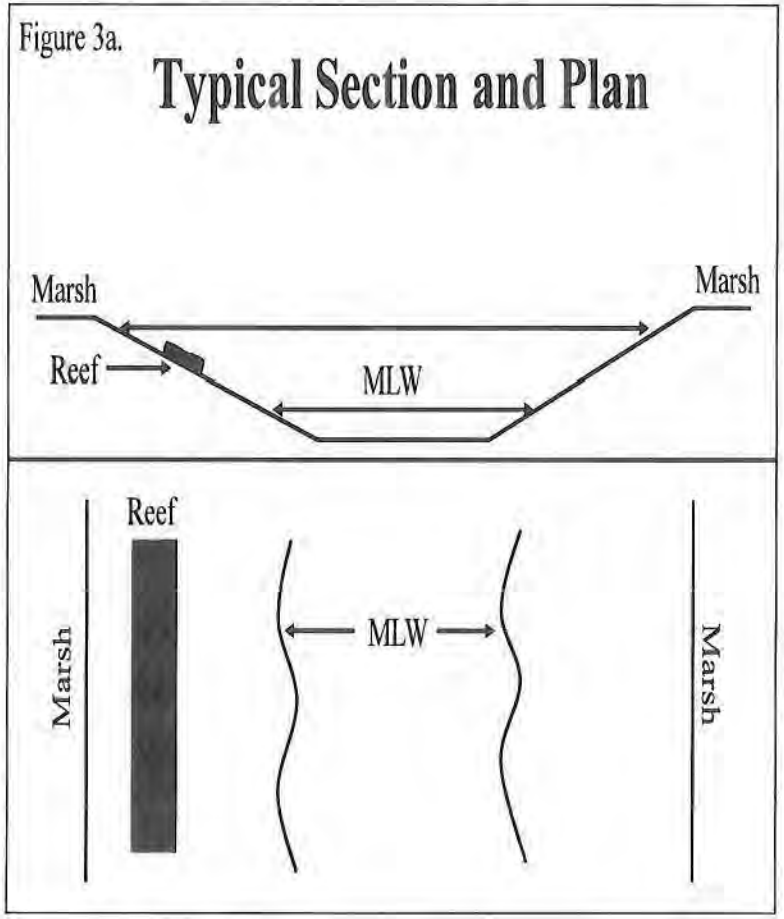
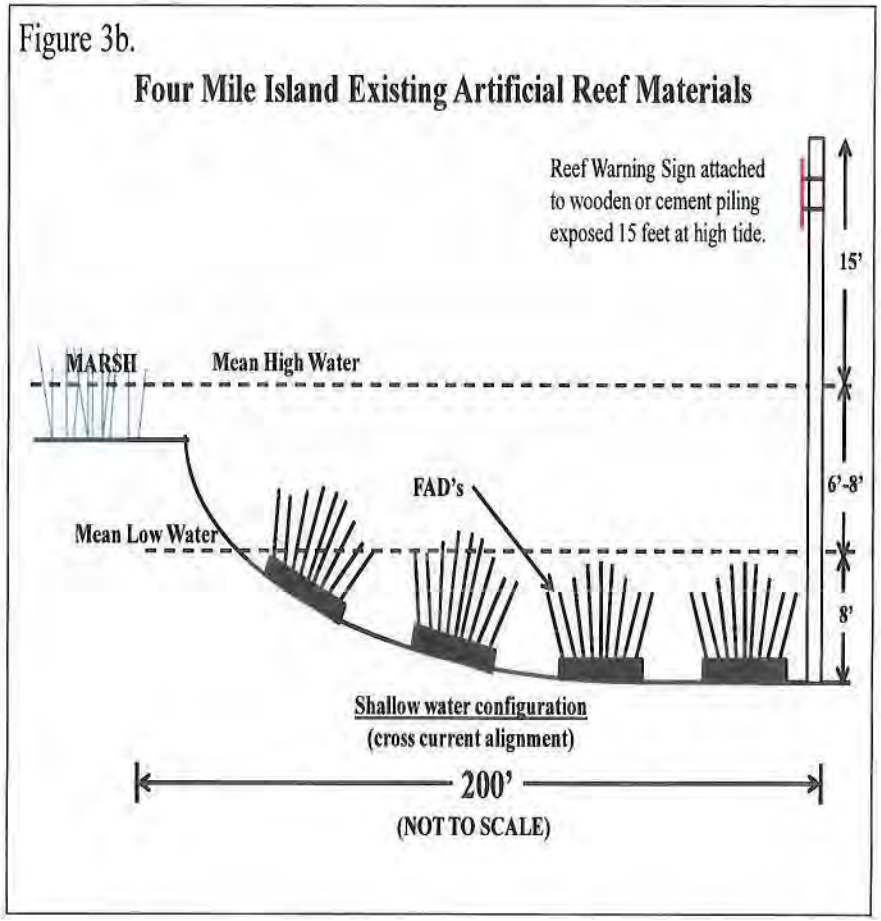


Figure 3b.



APPENDIX X- High Point Site

Figure 1. High Point Inshore Artificial Reef Site Shown in Red
Nautical Chart #11510 (NOAA: Sapelo and Doboy Sounds)

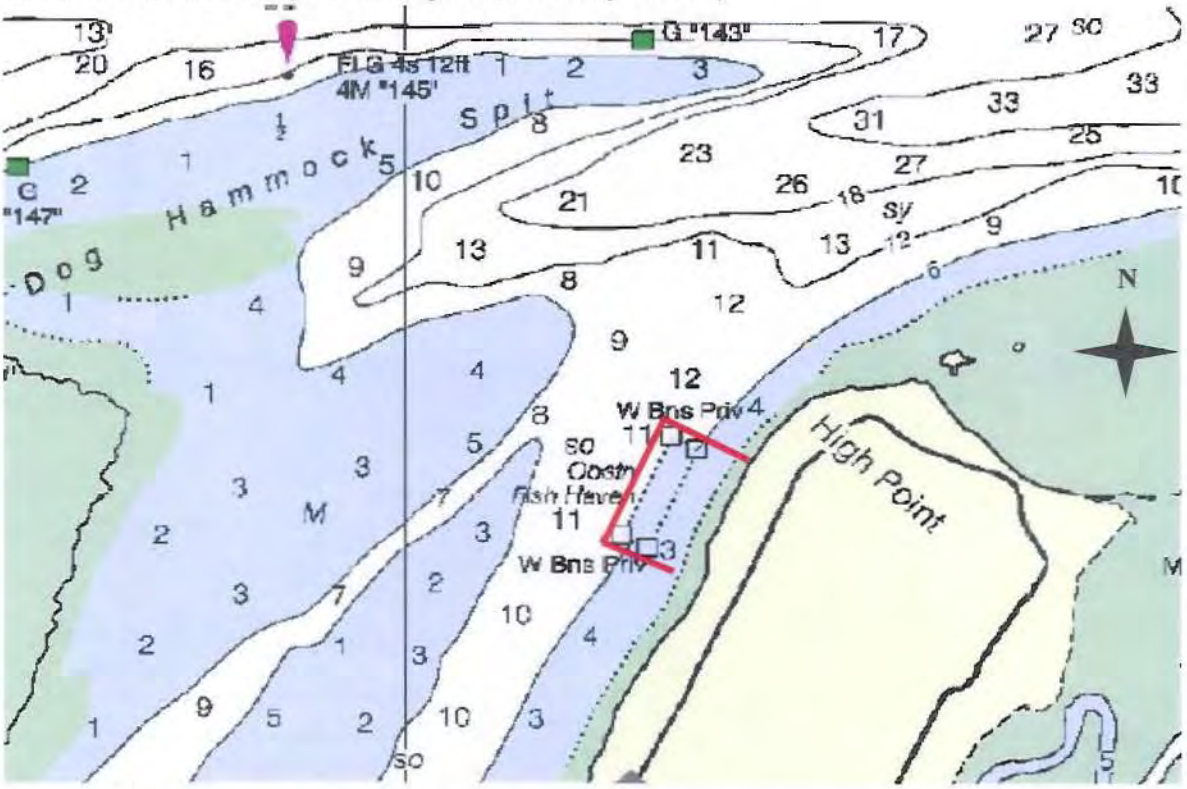


Figure 2. Reef Site Aerial Photograph shown with existing pilings, materials, and footprint (1,200' x 700'). For navigational purposes the southernmost piling is outlined in red.

APPENDIX X- High Point Site

Table 2	Piling Locations: Latitude & Longitude	Southernmost Piling Location: Latitude & Longitude for Navigational Purposes	Total Area
Site Name: High Point	31.528050° / -81.241133°		840,000 Ft^2 19.28 Acres
	31.527700° / -81.240500°		
	31.524950° / -81.242950°	**31.524700° / -81.242267°**	

Figure 3a.

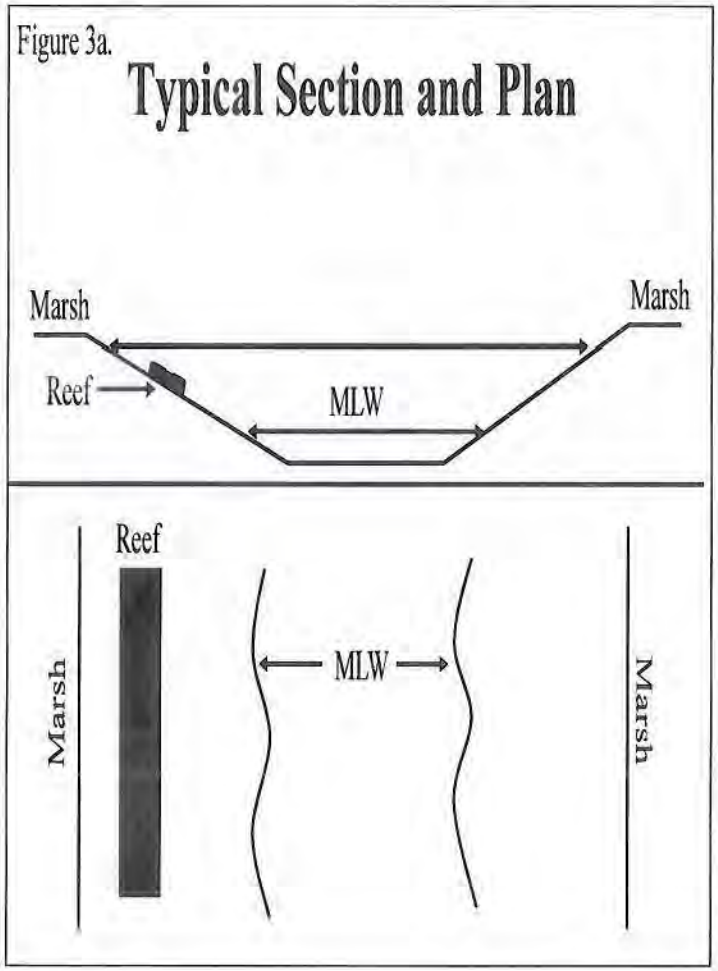
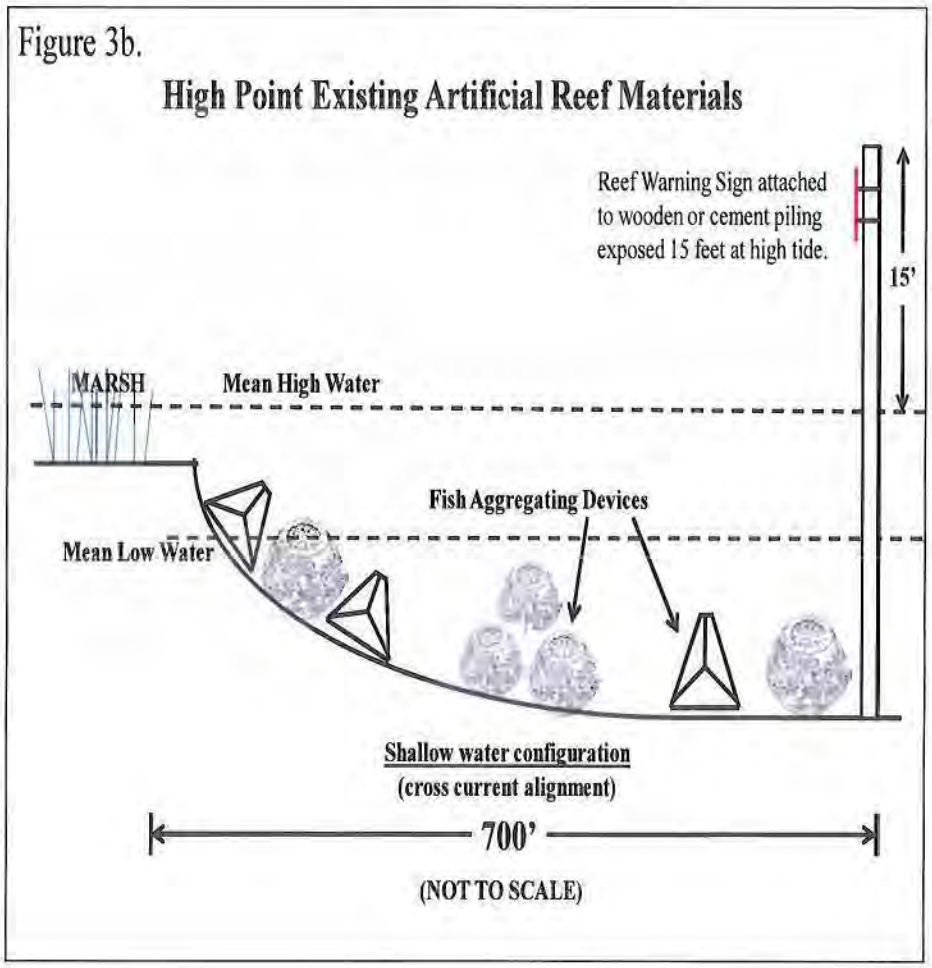


Figure 3b.



APPENDIX XI- Troupe Creek Site

Figure 1. Troupe Creek Inshore Artificial Reef Site Shown in Red
Nautical Chart #11507 (NOAA: Intracoastal Waterway Beafort River to St. Simons Sound)

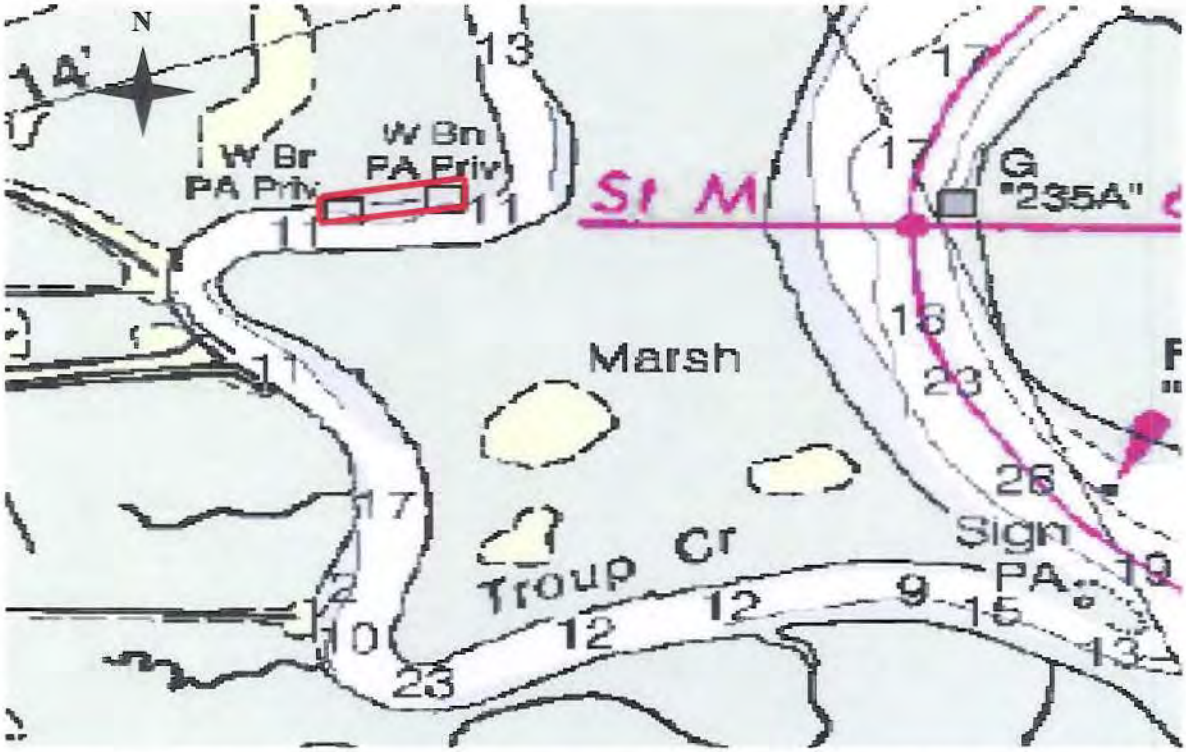


Figure 2. Reef Site Aerial Photograph shown with existing pilings, materials, and footprint (200' x 800'). For navigational purposes the southernmost piling is outlined in red.

APPENDIX XI- Troupe Creek Site

Table 2	Piling Location: Latitude & Longitude	Southernmost Piling Location: Latitude & Longitude for Navigational Purposes	Total Area
Site Name: Troupe Creek	31.229633° / -81.442700°	**31.229117° / -81.440617°**	60,000 Ft^2 / 1.38 Acres

Figure 3a.

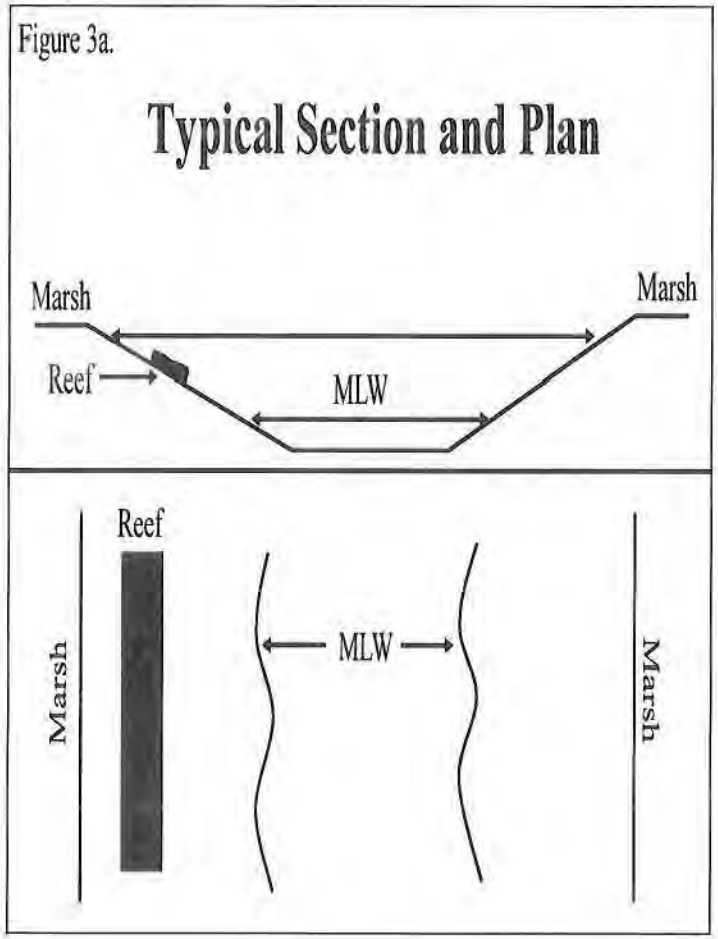
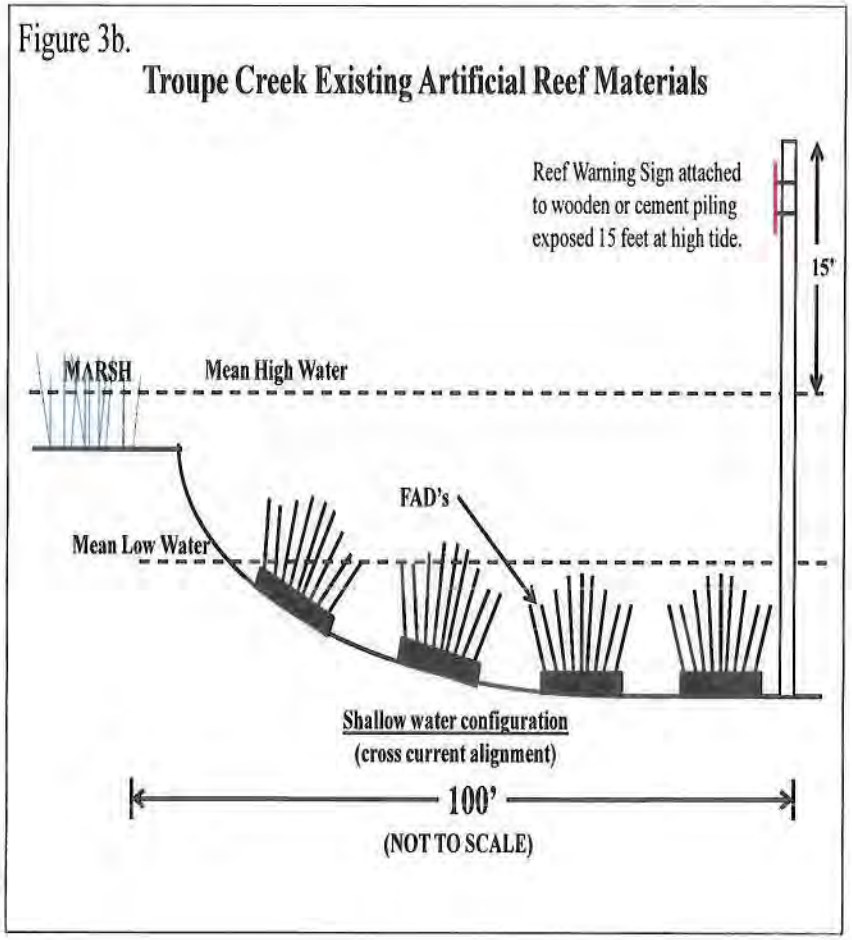


Figure 3b.



APPENDIX XII- Jove Creek Site

Figure 1. Jove Creek Inshore Artificial Reef Site Shown in Red
Nautical Chart #11506 (NOAA: St. Simons Sound, Brunswick Harbor and Turtle River)

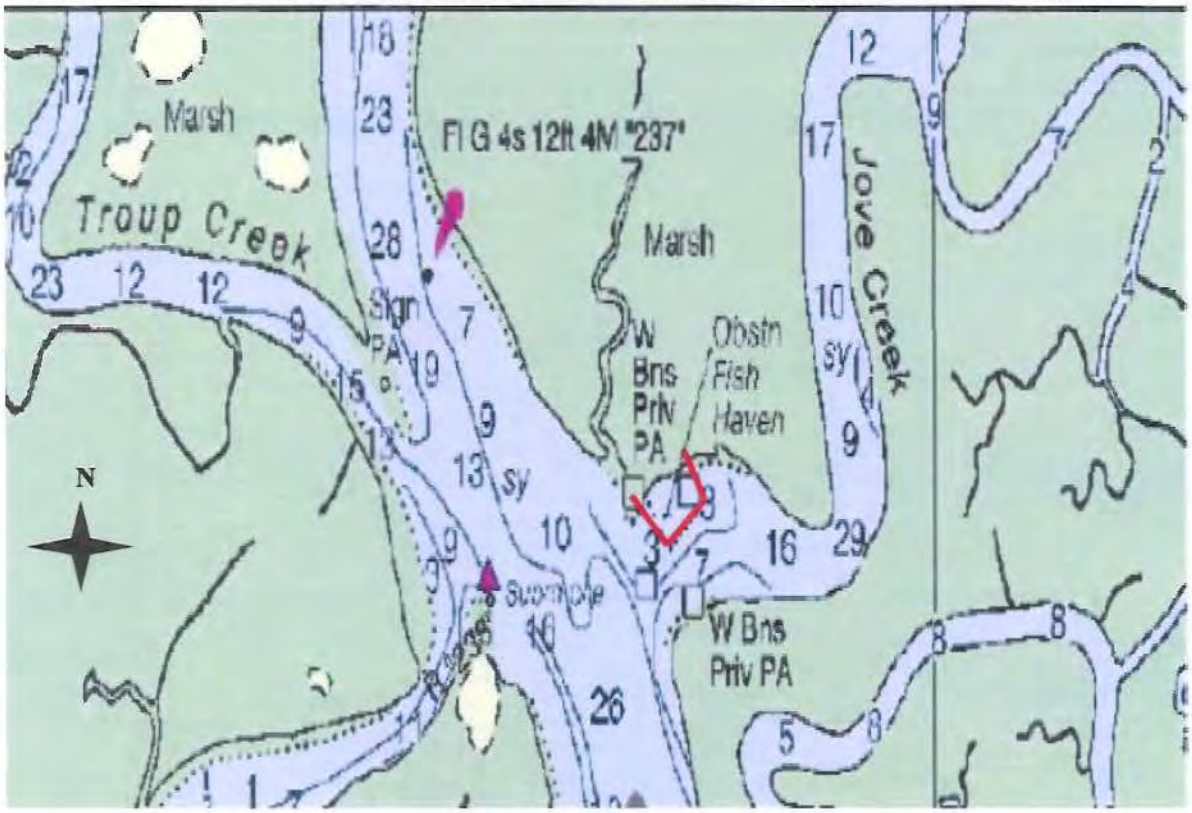
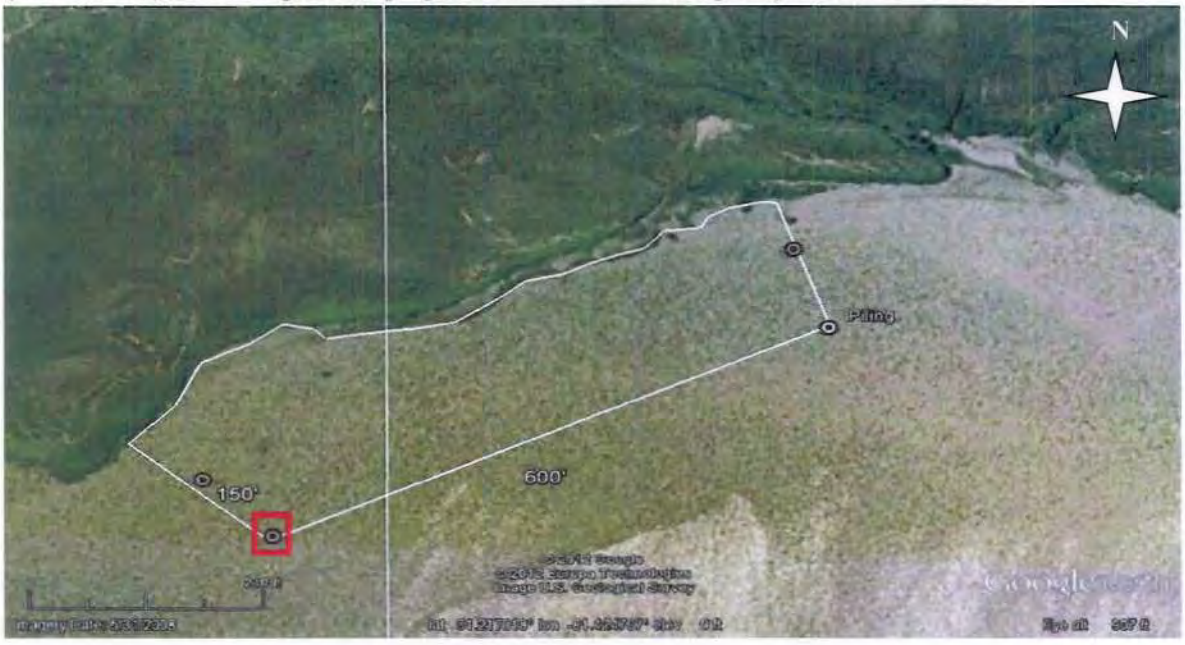


Figure 2. Reef Site Aerial Photograph shown with existing pilings, materials, and footprint (150' x 600'). For navigational purposes the southernmost piling is outlined in red.



APPENDIX XII- Jove Creek Site

Table 2.	Piling Locations: Latitude & Longitude	Southernmost Piling Location: Latitude & Longitude for Navigational Purposes	Total Area
Site Name: Jove Creek	31.216550° / -81.425817°		90,000 Ft^2 2.01Acres
	31.217000° / -81.424033°		
	31.217233° / -81.424133°	**31.216383° / -81.425617°**	

Figure 3a.

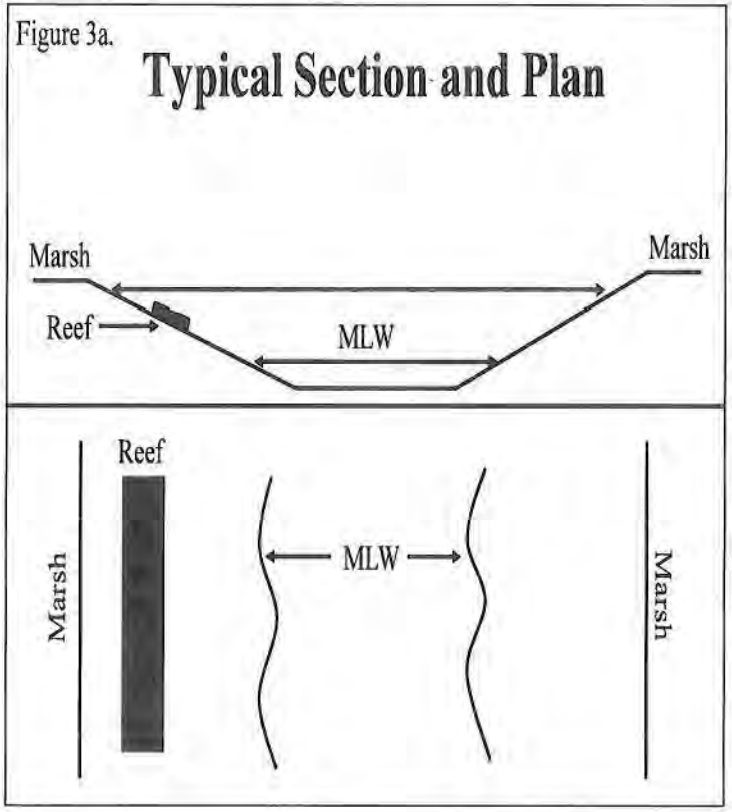
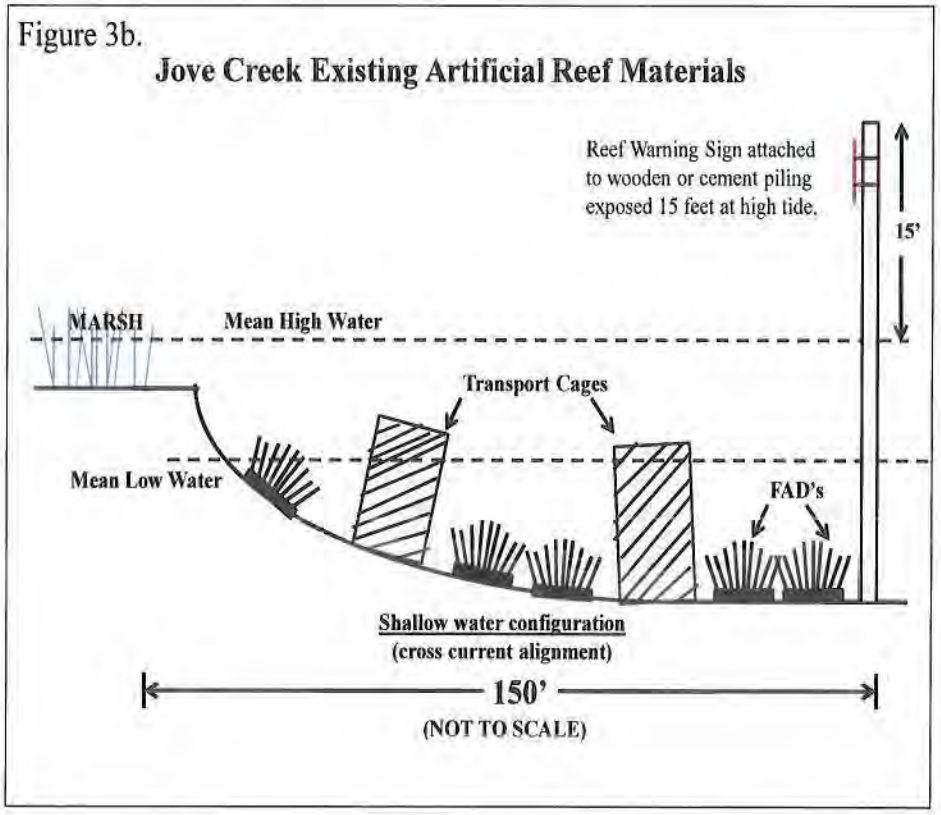


Figure 3b.



APPENDIX XIII -Little River Site

Figure 1. Little River Inshore Artificial Reef Site Shown in Red. Nautical Chart #11506 (NOAA: St. Simons Sound, Brunswick Harbor and Turtle River). *Sites were originally permitted in 1984 to be 75' away from the existing bridge as a cable and pipelines run adjacent to and underneath the current Little River Bridge. Both reefs do not interfere or impede existing lines.

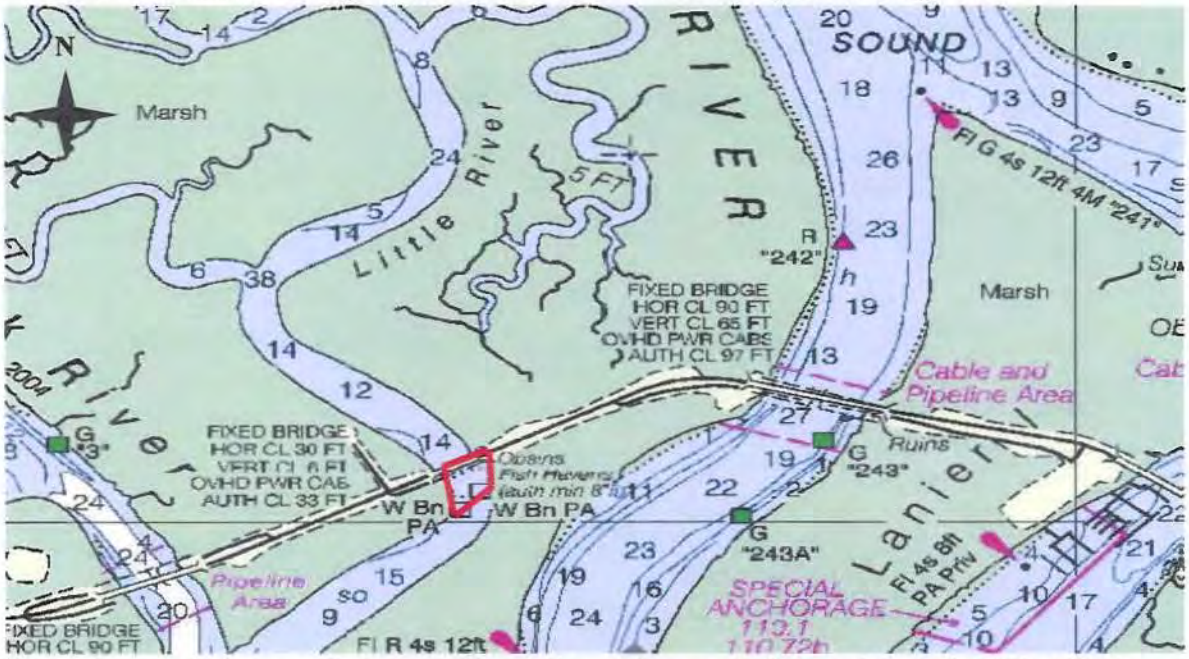


Figure 2. Aerial Photograph shown with existing pilings, materials, and footprint (West Bank: 330' x 60', East Bank: 260' x 60'). Pilings outlined in red are for navigational purposes.

APPENDIX XIII-Little River Site

Table 2 Site Name: Little River	Piling Locations: Latitude & Longitude for Navigational Purposes	Total Area = West & East Banks Combined
West Piling	**31.167550° / -81.436333°**	35,400 Ft^2 0.81 Acres
East Piling	**31.167700° / -81.435817°**	

Figure 3a.

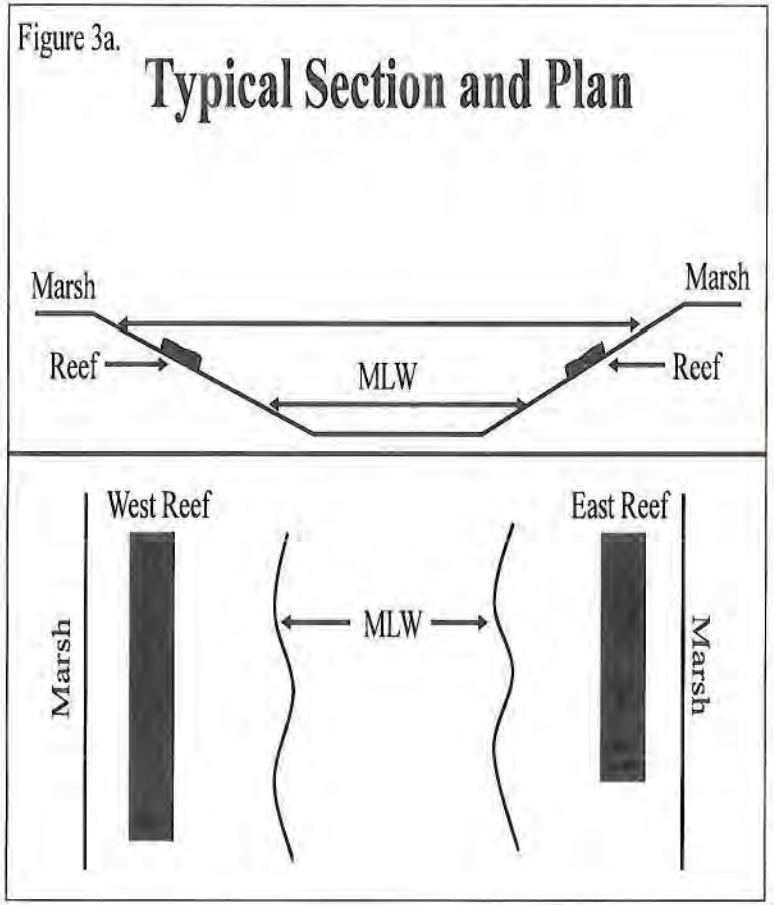
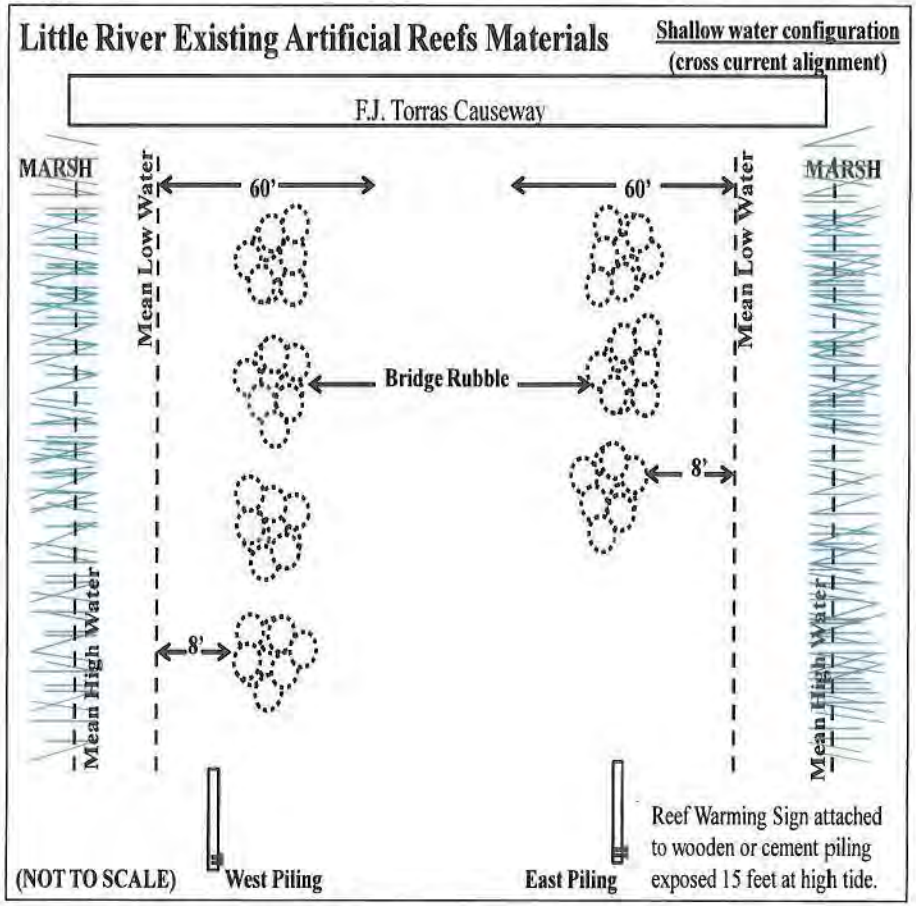


Figure 3b.



APPENDIX XIV-Henry Vassa Cate (Twin Sister's) Site

Figure 1. Henry Vassa Cate (Twin Sisters) Inshore Artificial Reef Site Shown in Red
Nautical Chart #11506 (NOAA: St. Simons Sound, Brunswick Harbor and Turtle River)

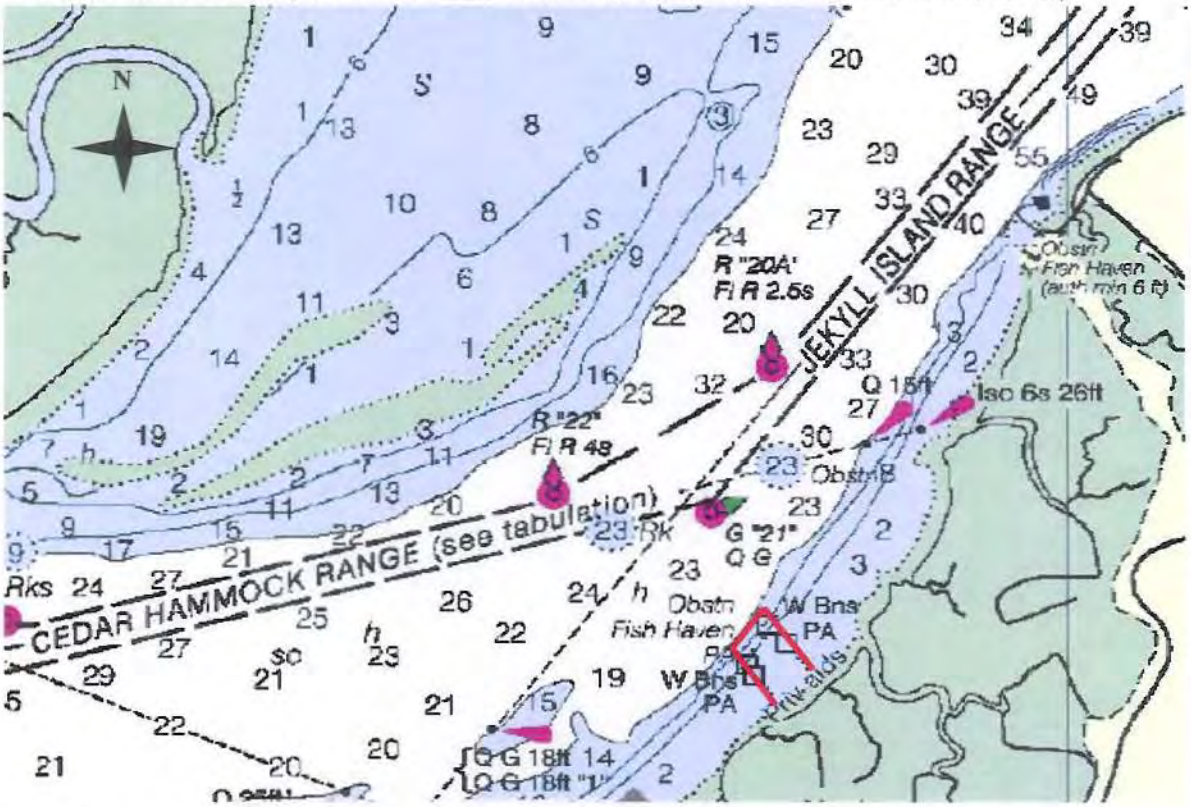


Figure 2. Reef Site Aerial Photograph shown with existing pilings, materials, and footprint (400' x 400'). For navigational purposes the southernmost piling is outlined in red.

APPENDIX XIV-Henry Vassa Cate (Twin Sister's) Site

Table 2	Piling Locations: Latitude & Longitude	Southernmost Piling Location: Latitude & Longitude for Navigational Purposes	Total Area
Site Name:	31.104433° / -81.425900°		160,000 Ft^2
Henry Vassa Cate	31.104067° / -81.425617°		3.67 Acres
(Twin Sisters)	31.103717° / -81.426917°	**31.103383° / -81.426667°**	

Figure 3a.

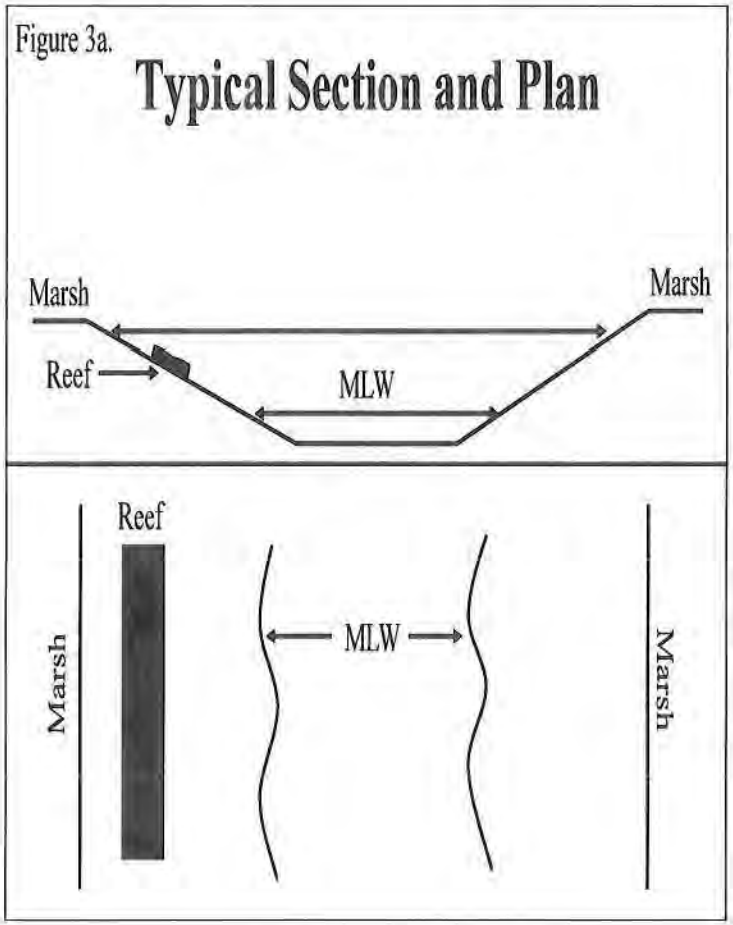
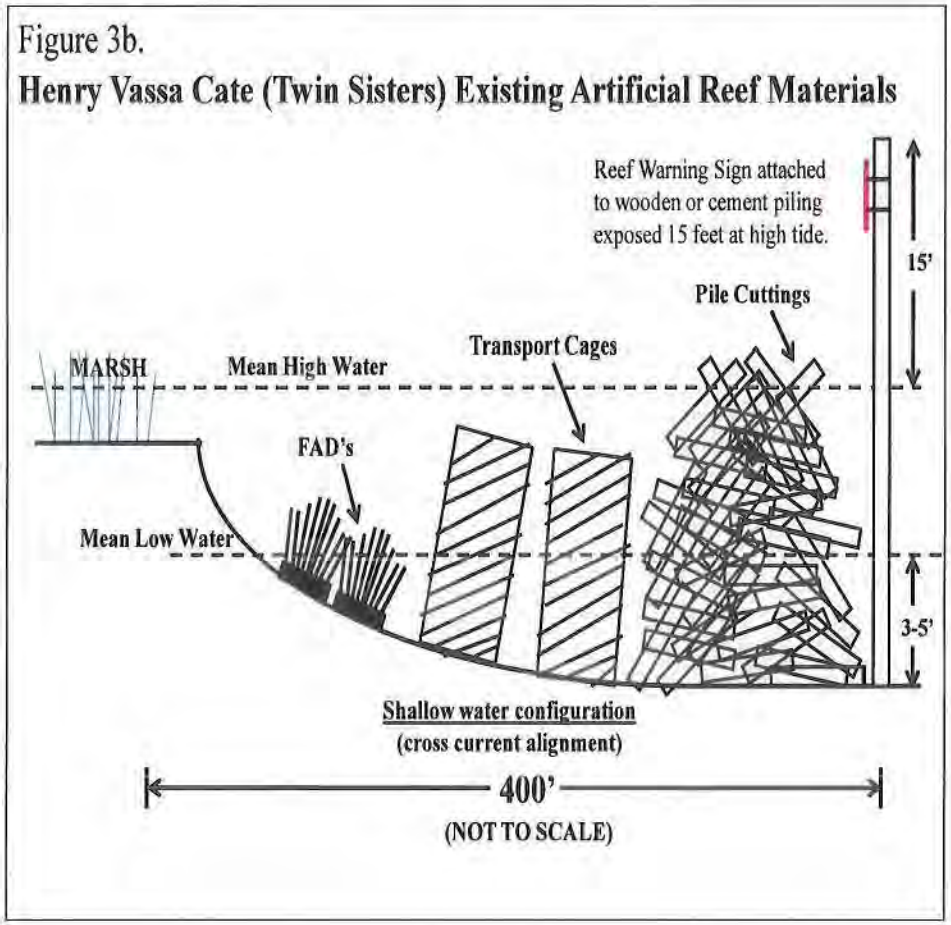


Figure 3b.



APPENDIX XV- Mud Creek Site

Figure 1. Mud Creek Inshore Artificial Reef Site Shown in Red
Nautical Chart #11504 (NOAA: St. Andrew Sound and Satilla River)

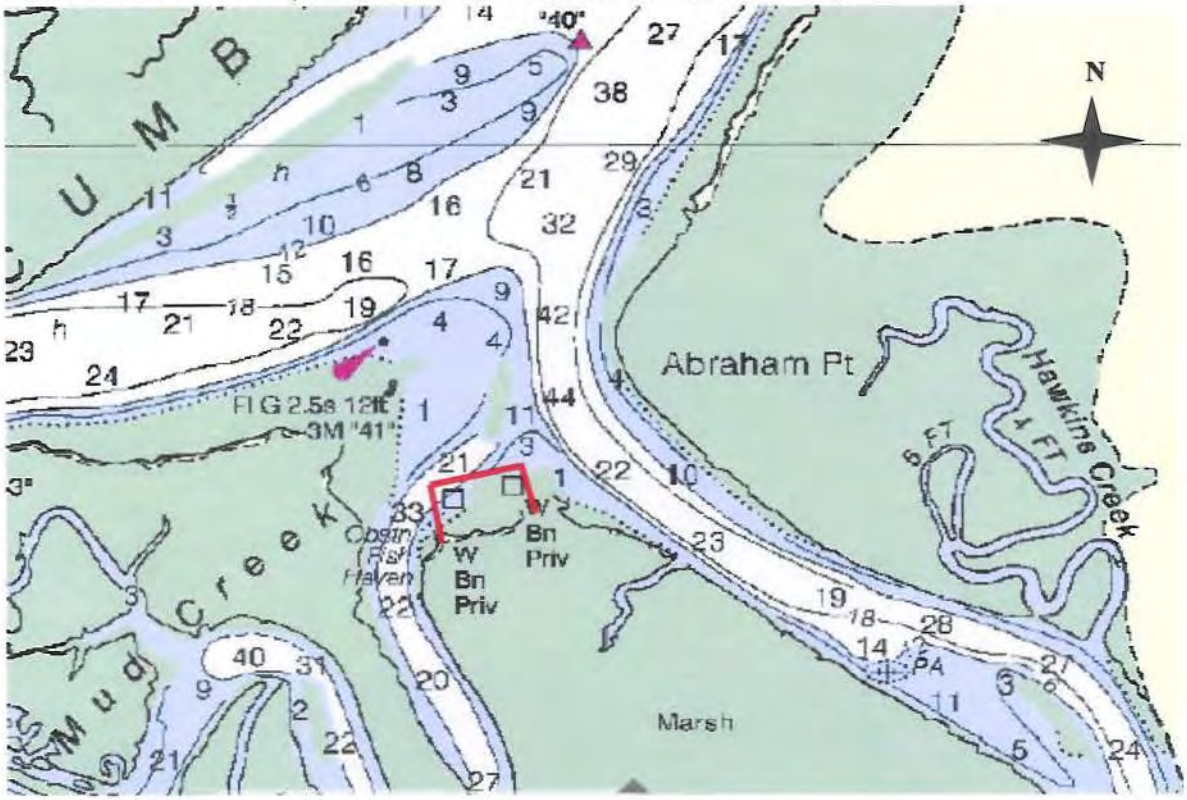


Figure 2. Reef Site Aerial Photograph shown with existing pilings, materials, and footprint (200' x 600'). For navigational purposes the southernmost piling is outlined in red.

APPENDIX XV- Mud Creek Site

Table 2	Latitude & Longitude	Southernmost Piling Location: Latitude & Longitude for Navigational Purposes	Total Area
Site Name: Mud Creek	30.905667° / -81.468217°	**30.904667° / -81.469500°**	120,000 Ft^2 2.75 Acres

Figure 3a.

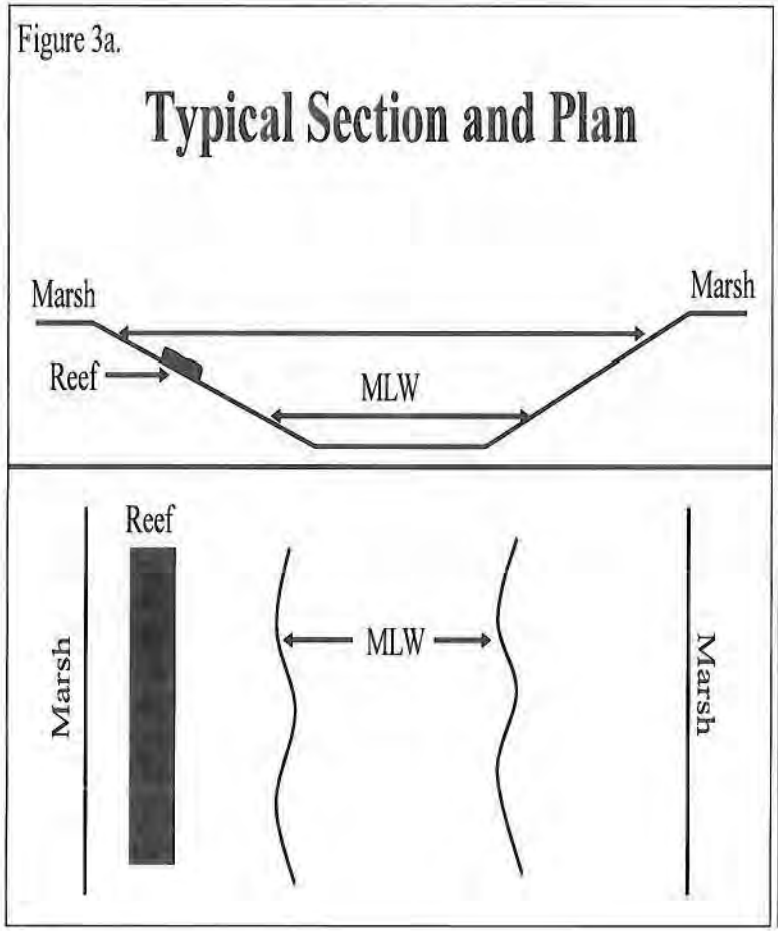
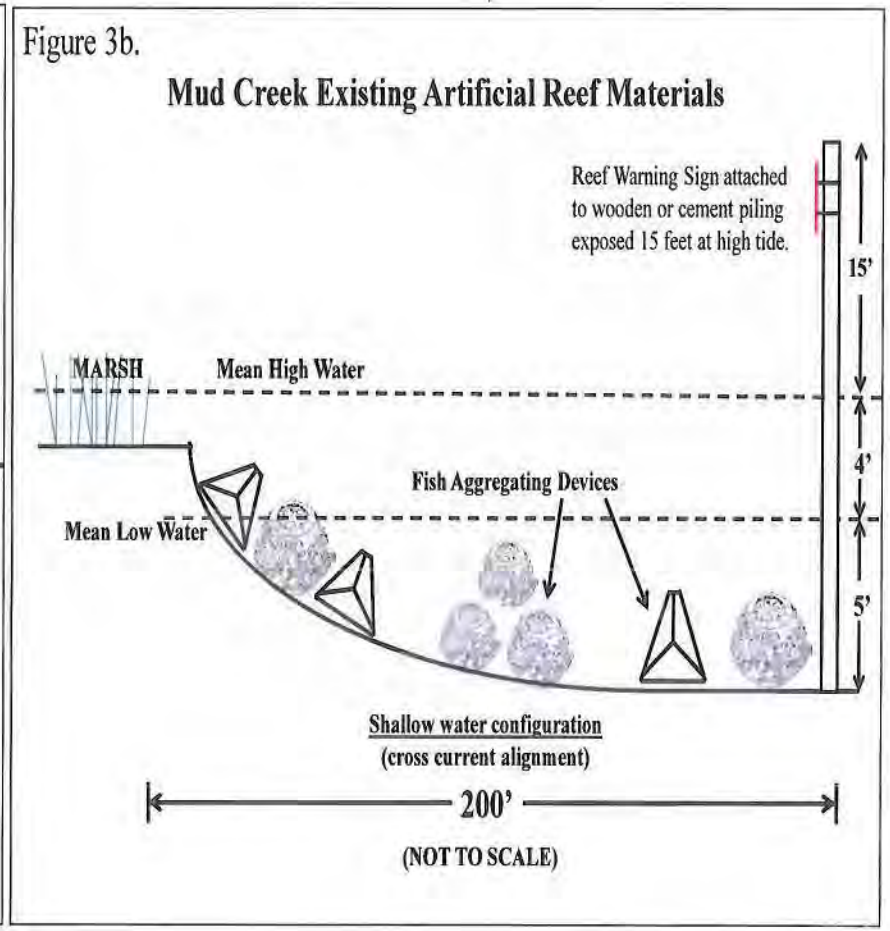


Figure 3b.



APPENDIX XVI- Stafford Island

Figure 1. Stafford Island Inshore Artificial Reef Site Shown in Red
Nautical Chart #11504 (NOAA: St. Andrew Sound and Satilla River)

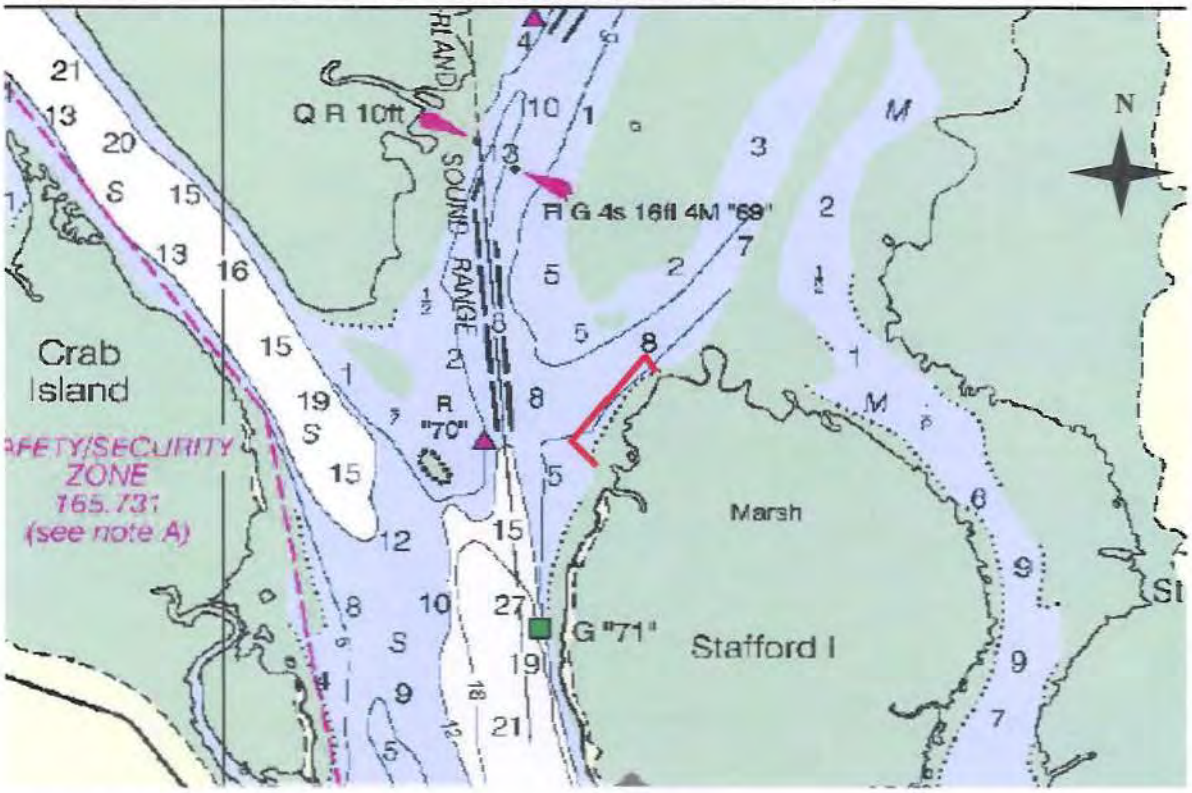


Figure 2. Reef Site Aerial Photograph shown with existing pilings, materials, and footprint (200' x 800'). For navigational purposes the southernmost piling is outlined in red.

APPENDIX XVI- Stafford Island

Table 2	Latitude & Longitude	Southernmost Piling Location: Latitude & Longitude for Navigational Purposes	Total Area
Site Name: Stafford Island	30.820833° / -81.487167°	**30.818917° / -81.488850°**	160,000 Ft^2 3.67 Acres

Figure 3a.

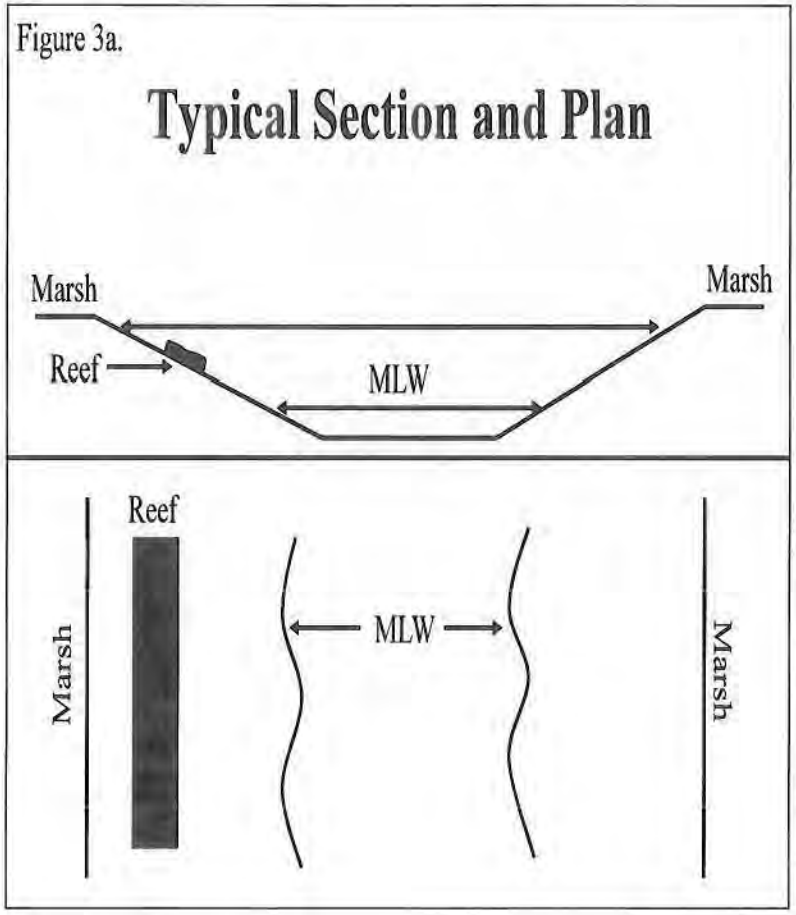
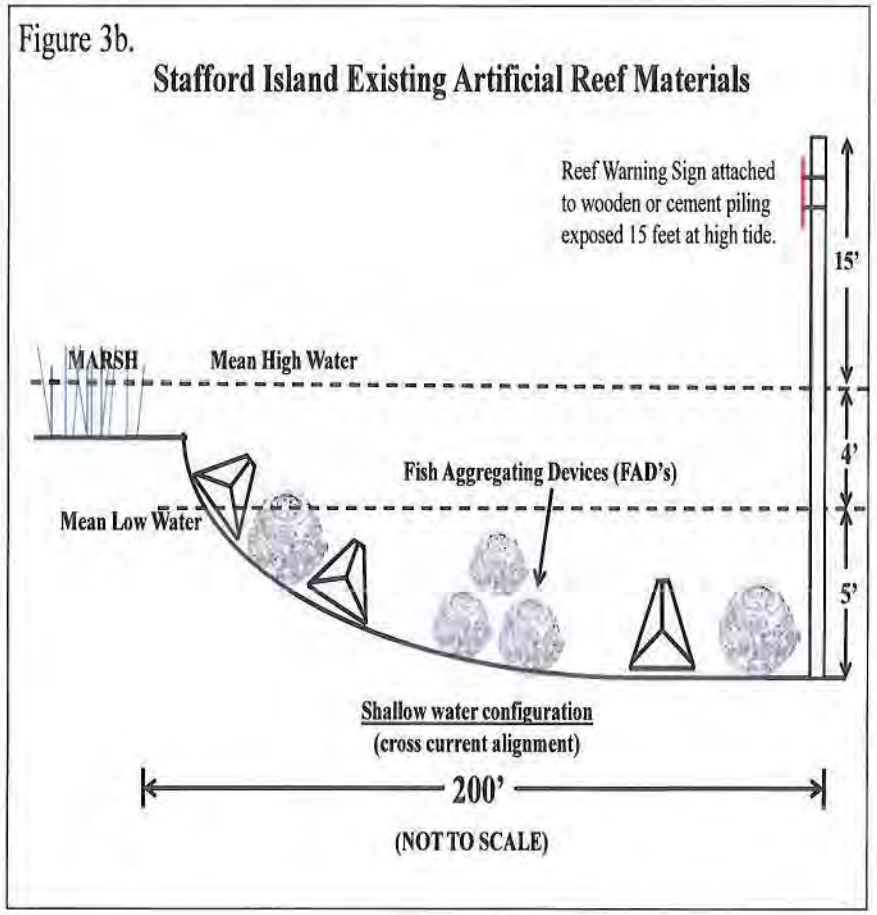


Figure 3b.



APPENDIX XVII- Jekyll Island Pier Site

Figure 1. Jekyll Pier Inshore Artificial Reef Site Shown in Red
Nautical Chart #11506 (NOAA: St Simons Sound, Brunswick Harbor, & Turtle River)

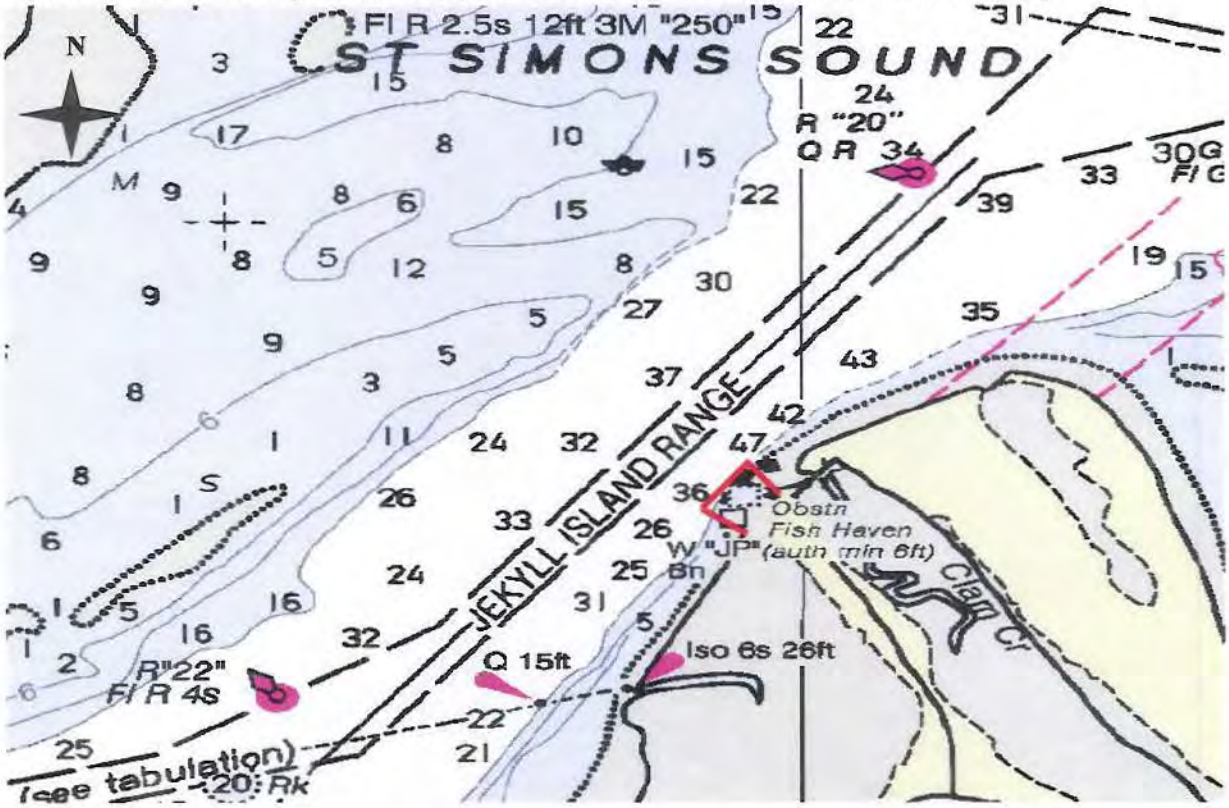


Figure 2. Aerial Photograph of the Jekyll Pier Inshore Artificial Reef Site. Existing materials/footprint (175' x 150') on the west arm of the pier and a new footprint (175' x 150') for the east arm of the pier.

APPENDIX XVII- Jekyll Island Pier Site

Table 2 Site Name: Jekyll Island Pier	General Locations: Latitude & Longitude **(No Pilings Exists)**	Area	Total Combined Area
West Arm of Pier	31.116696° / -81.418431°	23,158 Ft^2	47,885 Ft^2
East Arm of Pier	31.117506° / -81.417463°	24,727 Ft^2	1.1 Acres

Figure 3a.

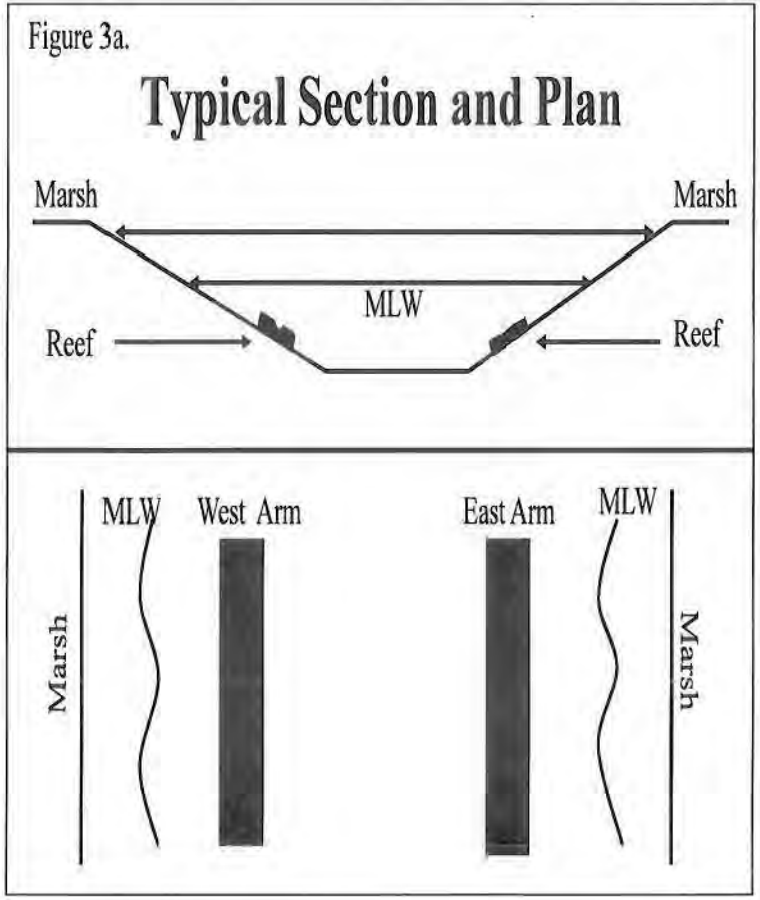
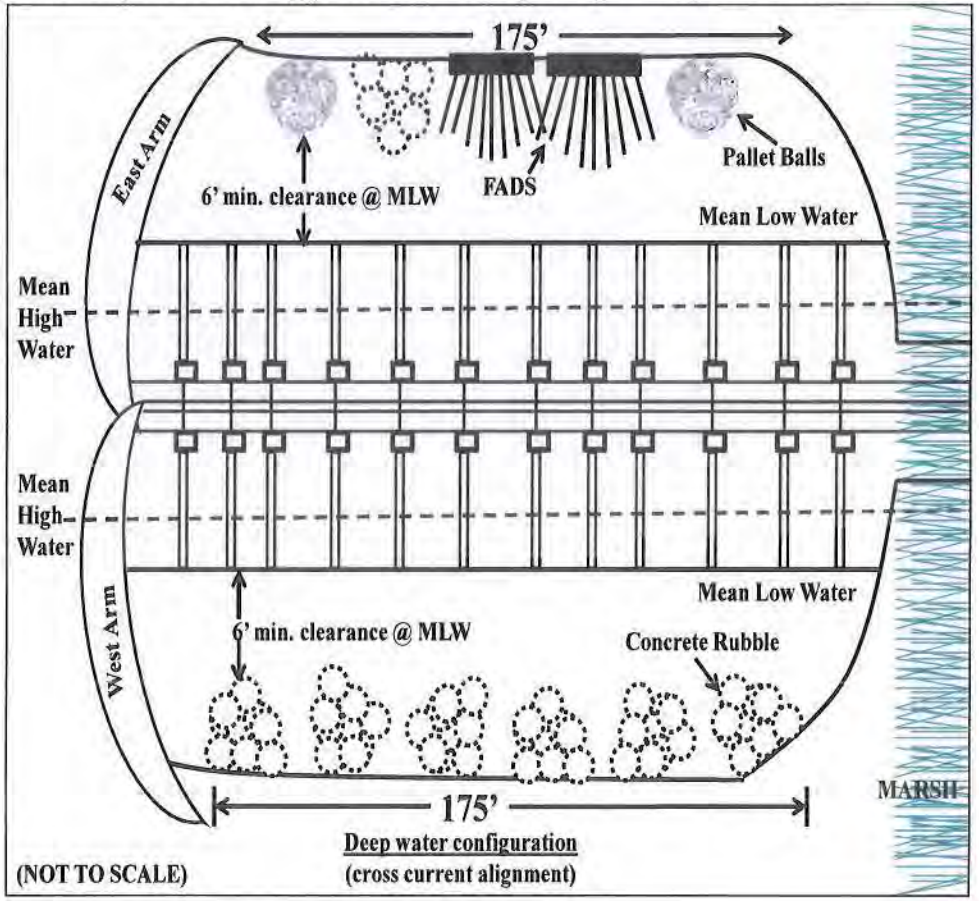


Figure 3b. Jekyll Pier exisiting (west arm) and proposed (east arm) artificial reef materials.



APPENDIX XIII- St. Andrews Site

Figure 1. Proposed St. Andrews Inshore Artificial Reef New Site Shown in Red
Nautical Chart #11504 (NOAA: St. Andrew Sound and Satilla River)

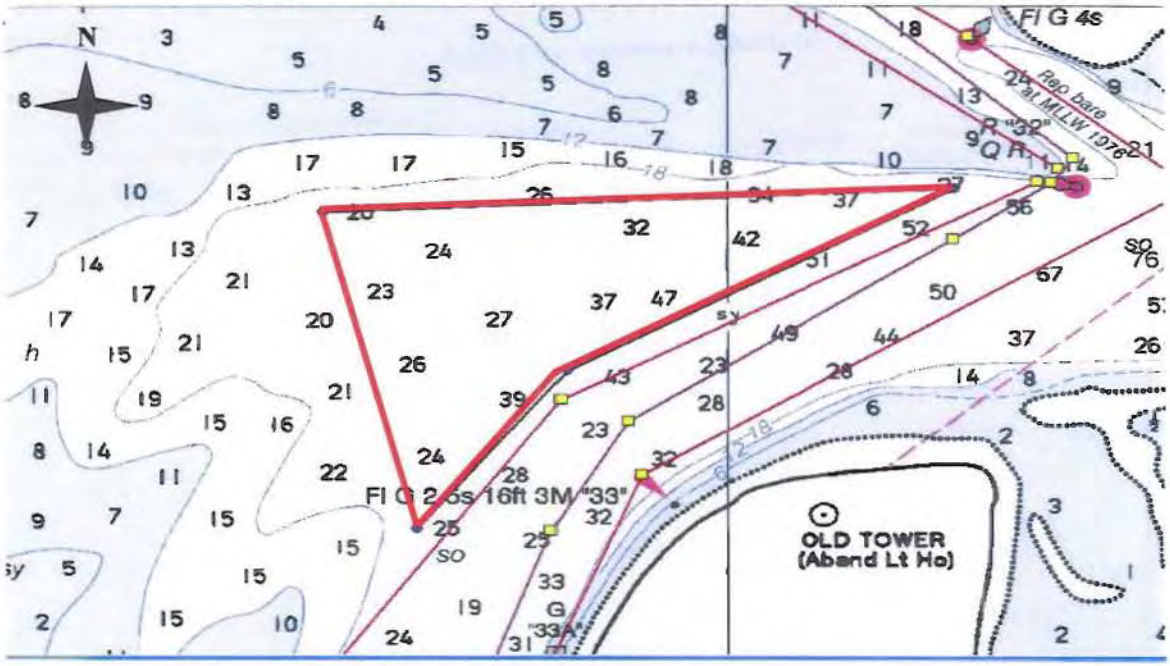
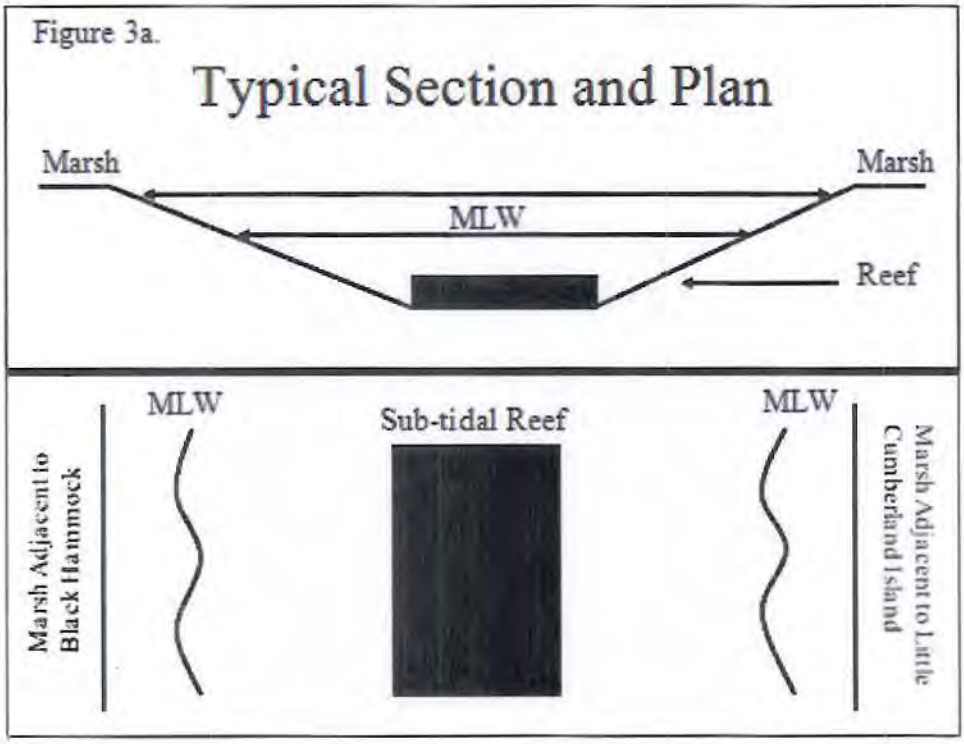


Figure 2. Aerial Photograph of the Proposed St. Andrews Inshore Artificial Reef New Site, no pilings or materials exist on site and the proposed footprint (~305 acres) is shown.

APPENDIX XIII- St. Andrews Site

Table 2 Site Name: St. Andrews (Submerged Reef)	Latitude & Longitude Perimeter Boundaries for Navigational Use As **No Pilings Exists On Site**	Estimated Total Area
NE Corner Boundary	30.988700° / -81.408333°	305 Acres 13,269,318 Ft^2
NW Corner Boundary	30.987800° / -81.431283°	
SW Corner Boundary	30.975650° / -81.427883°	
Mid W Corner Boundary	30.981700° / -81.422450°	



APPENDIX XIX- Inshore Artificial Reef Program Historical Overview

Program Summary:

In the mid 1980's as inshore saltwater fishing's popularity grew in Georgia so did the need for additional 'fishing drops'. The Georgia Department of Natural Resources (GADNR), Coastal Resources Division (CRD) recognized this and through Sport Fish Restoration, State, and private funds, established an Inshore Artificial Reef Restoration Program (hereinafter referred to as Program). Sites were surveyed for depth, substrate suitability, and distance to navigable traffic channels and accessibility to boating access sites. Once Program sites were selected materials of opportunity such as donated old road beds, bridge railings, metal chicken transport cages, concrete rubble, and designed modules such as Fish Aggregating Devices (FADs) were used in deployments. By 1999 fifteen Program sites along six coastal counties located in seven of the State's estuaries had been permitted by the United States Army Corps of Engineers (USACE). Thirteen of the reefs were placed in inter-tidal waters, 0-3' mean low water (MLW), where reefs were designed to replicate natural occurring oyster beds and other 'drops' providing small vessel anglers additional resources. Conversely, two reef sites: Little River (8-12' MLW) and Jekyll Island Pier (5-6'MLW) were placed in sub-tidal areas. Both inter-tidal and sub-tidal sites were marked with pilings for easier recognition and to comply with United States Coast Guard (USCG) navigational aid regulations. Appropriately worded, plainly visible and legible, reef warning signage were posted and maintained on each piling. Annual helicopter over-flights, versus on the water side scan sonar (SSS) surveys, were primarily conducted to document and monitor marker piling conditions, signage, material settling rates, and movement of sandbars and mudflats at all 15 sites. CRD creel clerks also survey angler's dockside for species catches at nearby boat ramps and marinas, if inshore artificial reef sites are not accessible by land.

Due to differing water dynamics and substrate properties at individual sites, some reefs have been more successful than others. Successful reefs and materials include FADs placed at the Halfmoon River reef, concrete rubble and FADs located at the Henry Vassa Cate reef and metal transport cages at located at Jove Creek. All of these materials have sustained structural longevity, provided substrate for oyster and barnacle growth, as well as provided Essential Fish Habitat (EFH) and angling opportunities. Meanwhile, materials placed at other unproductive sites include metal transport cages at the Timmons River site, and FADs located at the Romerly Marsh Creek site which- have sunk below the mud line all but disappearing. It should also be noted that FADs with Polyvinyl chloride (PVC) spikes arranged vertically, pin cushion style, have been subject to breakage where only 3" concrete slab remains. It is assumed that vessels drove over the FADs causing the breakage.

The creation of thirteen inter-tidal artificial reefs have established areas of "Essential Fish Habitat (EFH)" along the Georgia coast. EFH is defined as "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity." The secondary benefits of creating inshore artificial reef sites are the potential for oyster recruitment and shoreline stabilization. Inter-tidal oyster beds are considered EFH by South Atlantic Fisheries Management Council (SAFMC) and National Marine Fisheries Service. SAFMC also designates oyster

aggregations and tidal inlets as Habitat Areas of Particular Concern, a subset of Essential Fish Habitat occurring in Georgia's tidal waters.

In 1984, two inshore reefs were permitted: Little River and Jekyll Island Pier. In June of 1984, the Little River Program site was permitted and materials were placed along the Little River at the FJ Torras Causeway in Glynn County. This sub-tidal site consists of both east (260' x 60') and west (330' x 60') bank footprints where concrete bridge rubble and railings from old causeway bridges were deployed. This site is highly active as it is accessible by land from the Little River Bridge making it one of the more popular inshore artificial reef fishing sites and it is also accessible by water from the Mackay River boat ramp or several nearby marinas. Creel surveys are performed randomly throughout the year by CRD creel clerks who have noted that sheepshead (*Archosargus probatocephalus*) and whiting (*Menticirrhus americanus*) are the most frequently caught species in addition to some spotted seatrout (*Cynoscion nebulosus*) in the fall. Though sub-tidal, side scan sonar (SSS) surveys as recent as summer 2012 have shown significant piles of rubble on each bank. Over-flights are conducted annually to document and monitor the condition of each bank's single marker piling and signage.

Also in June 1984 the Jekyll Island Pier Program site was permitted with a 175' x 150' footprint. Bridge rubble and railings from the FJ Torras Causeway were deployed on the south side of the "T" at Jekyll Island Pier in a lattice box configuration and a single layer design. The reef was marked by a single concrete piling with signage. In 2003 a barge collision with the piling and pier subsequently knocked the piling over. Fathometer transects found no trace of the marker piling and given the reef's close proximity to the pier a request was submitted to USCG Private Aids to Navigation for the discontinuation of the marker. Over-flights are not conducted for this site as it is sub-tidal and the marker piling no longer exists. The Program reef is accessible from the pier or by water from the nearby Mackay River or Jekyll Creek boat ramps.

In November of 1987, three inshore reefs were permitted: Romerly Marsh Creek also known as Joe's Cut, Halfmoon River, and Henry Vassa Cate formerly known as Twin Sisters. The Joe's Cut Program site is located at the mouth of Romerly Marsh Creek, Wassaw Sound, in Chatham County and consists of an overall site footprint of 250' x 550'. This site is only accessible by boat and materials deployed consist of PVC/concrete FADs. SSS surveys performed in summer 2012 show breakage of a large number of FAD PVC spikes leaving only the concrete bases which are spread throughout the reef site and settling. Over-flights to document and monitor the single pilings' condition, signage, material settling rates, and movement of mudflats have been annually conducted since 2004. Angler site surveys have not been performed, however the nearby Turners Creek boat ramp is randomly surveyed by CRD creel clerks.

The Halfmoon River Program site is also located in Chatham County, Wassaw Sound, at the mouth of the Bull and Halfmoon Rivers. This site is accessible only by boat and the reef consists of 176 PVC/ concrete FADs which are visible at low tide and do not appear to have subsided

during 25 years. The Halfmoon River area is highly productive, actively used by the fishing community, considered a multi-used site, and is one of the more successful inshore artificial reef sites. Just outside of the GADNR reef footprint (400' X 800'), the University of Georgia has placed several experimental clam beds which are visible at low tide. Annual over-flights have been conducted since 2004 to document and monitor conditions of the four marker pilings', signage, and material settling rates versus the use of SSS surveys which are nearly impossible due to the density of materials on this site. Angler site surveys have not been performed; however the nearby Turner's Creek boating access facility is randomly surveyed by CRD creel clerks.

Henry Vassa Cate (HVC), formerly known as Twin Sisters, is located in St. Simons Sound one mile southwest of the Jekyll Island Pier in Glynn County. Accessible only by boat HVC was originally permitted for PVC/concrete FADs. The permit was modified in 1992 to include approximately 30 concrete pilings placed in a lattice box configuration, partially visible at mean high water. Most of the materials are visible at low tide and remain stable without any signs of settling. Due to the density of materials at this highly productive site, SSS surveys are typically very difficult to perform within the 400' x 400' reef footprint. However, over-flights have been conducted annually since 2004 to document and monitor the condition of the four marker pilings', signage, material settling rates, and movement of sandbars and mudflats. Angler site surveys have not been conducted but the nearby Mackay River and Lanier boat ramps are randomly surveyed by CRD creel clerks.

The Jove Creek Program site, opposite Intracoastal Waterway (ICW) marker R"238" in Glynn County was permitted in November 1990 with a 150' x 600' footprint. Accessible only by boat the reef was originally permitted for PVC/concrete FADs. In 1992 the permit was modified to allow the addition of metal chicken transport cages, donated by Gold-Kist in Douglas GA. FADs and transport cages can currently be seen on the bank at low tide and SSS surveys were conducted in 2012 showing materials scattered throughout the reef. Over-flights are conducted annually to document and monitor the four marker pilings' condition, signage, material settling rates, and movement of mudflats. Angler site surveys have not been conducted but the nearby Mackay River boat ramp is randomly surveyed by CRD creel clerks.

In 1994, three inshore reefs were permitted: Four Mile Island, Van Dyke Creek, and Timmons River. In July of 1994, the Four Mile Island Program site was permitted with an overall footprint of 200'x 800' for the following materials: PVC/concrete FADs, donated metal chicken transport cages and concrete fabricated Bay Ball units. This reef is located in McIntosh County 0.30 nautical miles (nm) northeast of Four-Mile-Point in Sapelo Sound. Annual over-flights document and monitor conditions of the two marker pilings', signage, and settling rates have shown materials sinking in sand with little visibility at low tide and the creation of a sand bar on the west end of the reef. SSS surveys of this site are scheduled for spring/summer of 2013. Angler site surveys have not been conducted but the nearby Shellman's Bluff Fish Camp boating access facility is randomly surveyed by CRD creel clerks.

APPENDIX XIX- Inshore Artificial Reef Program Historical Overview

The Van Dyke Creek Program site consists of an overall 200' x 800' footprint and is located in Liberty County 0.58 nm north northwest of ICW marker G"121" at mouth the of Van Dyke Creek, St. Catherines Estuary. This site is considered to be one of the more successful inshore reefs because materials have remained structurally viable. In October of 1994, Van Dyke Creek was permitted for Gold-Kist metal chicken transport cages and PVC FADs. Annual over-flights monitor conditions of the two marker pilings', signage, and have documented visible materials during low tide and materials scattered into deeper waters. SSS surveys are planned for spring/summer 2013. The Half Moon Marina is a nearby boating access facilities that is randomly surveyed by CRD creel clerks.

Also permitted in October 1994, was the Timmons River Program site (200' x 800') located in Liberty County 0.87 nm west of ICW marker G"121" on the north side of the Timmons River, St. Catherine's Estuary. This site was similarly permitted for donated Gold-Kist metal chicken transport cages which proved to be an unproductive material as aerial surveys revealed cages subsided into the mud. Over-flights conducted annually document and monitor the condition of two marker pilings', signage, material settling rates, and movement of mudflats. SSS surveys are scheduled for early spring/summer 2013. The Half Moon Marina is a nearby boating access facility that is randomly surveyed by CRD creel clerks.

In December of 1995 an inshore artificial reef in Troupe Creek, Glynn County was permitted 0.30 nm northeast of Troupe Creek Marina in St. Simons Sound. The reef footprint consists of 100' x 600' and is made up of concrete rubble and culvert which are visible at low tide. SSS surveys in the fall of 2012 indicated small concentrations of rubble spread out in the deeper water. Annual over-flights at low tide are completed to appraise the condition of materials, the two marker pilings', and signage. The nearby Mackay River boat ramp is randomly surveyed by CRD creel clerks.

In March of 1997 a 800' x 200' Program site was established on the west side of Stafford Island in Camden County on the ICW just east of marker "70". This reef was permitted for concrete/PVC FADs. Annual over-flights document and monitor the conditions of the two marker pilings', signage, material settling rates, and movements of sandbars and mudflats. Previous over-flights at low tide have documented FADs clearly visible and spread over the reef site. SSS surveys are scheduled for early spring/summer 2013. The nearby Crooked River State Park boating access facility is randomly surveyed by CRD creel clerks.

In 1998, two inshore reefs were permitted: Ogeechee River and Mud Creek. In April 1998, the Ogeechee River 200' x 800' Program site (known by some as Harvey's Island) was permitted for concrete culvert. This site is located in Chatham County 0.6 nm north of the Ogeechee River marker G"1A" along Harvey's Island in the Ossabaw Estuary. Culvert materials were deployed on a very muddy bottom, remain stable after 14 years, and are visible during low tide. Several piles of culvert in the deeper part of the reef are visible at low tide and most materials placed along the bank are always visible. SSS surveys (2012) show sparse material spread throughout

the reef. The nearby Red Bird Creek boat ramp is randomly surveyed by CRD creel clerks. Over-flights conducted annually document and monitor the condition of two marker pilings', signage, material settling rates, and movements of sandbars and mudflats.

Also permitted in April 1998 was the Mud Creek Program site (200' x 600') in Camden County located at the mouth of the Brickhill River south of ICW marker "41" in the St. Andrews Estuary. The reef consists of concrete culvert, fabricated FADs, and concrete walkways. SSS surveys (2012) show the walkways have subsided into the mud but a large pile of concrete culvert is still visible in deeper water at low tide and a few of the fabricated units are also visible along the bank. Over-flights are conducted annually to document and monitor the condition of two marker pilings', signage, material settling rates, and movements of sandbars and mudflats. The nearby Crooked River State Park boating access facility is randomly surveyed by CRD creel clerks.

In November of 1999, two inshore reefs were permitted: Bear River and High Point. The Bear River site in Bryan County was permitted with a 1,000' x 800' overall footprint for deployment of concrete culvert and is located at the mouth of Newel Creek north on the ICW, St. Catherine's Estuary. Culvert material is visible on the site bank at low tide and the remainder of the materials are found in deeper water, rarely exposed. SSS survey (2012) results show substantial piles of stabilized material providing valuable habitat at this site. The nearby Kilkenny Fish Camp boating access sites is randomly surveyed by CRD creel clerks. Over-flights are conducted annually to document and monitor the condition of two marker pilings', signage, material settling rates, and movements of sandbars and mudflats.

The High Point Program site (1,200' x 700') in McIntosh County was permitted in November 1999. High Point is located almost 1 mile southeast of ICW marker "143" at the northern end of Sapelo Island. Materials permitted for this site consists of concrete pilings with some pilings visible at low tide. SSS surveys are scheduled for early spring for 2013. The nearby Shellman's Bluff Fish Camp boating access facility is randomly surveyed by CRD creel clerks. Over-flights are annually performed to document and monitor the condition of the four marker pilings', signage, material settling rates, and movement of sandbars and mudflats.

Georgia's Inshore Artificial Reef Development Programmatic General Permit

Project Summary

The Georgia Department of Natural Resources (GADNR) initiated an inshore artificial reef development program (hereinafter referred to as Program) in the 1960's in order to provide fisheries managers the ability to enhance fisheries resources in estuarine areas lacking suitable habitat and to provide an increase of accessible habitat to coastal anglers. In 1984, GADNR began artificial reef development efforts in the State's tidal creeks and rivers in response to coastal growth and a rapidly growing inshore recreational fishery. Working in partnerships with 1) fishermen; 2) sport fishing clubs; 3) conservation groups such as the Coastal Conservation Association of Georgia; donors; national, State, and local governmental and, fisheries management agencies; 4) research and educational institutes; 5) oversight bodies, including GADNR Coastal Resources Division (CRD) Saltwater Advisory Council, legislative committees, and other advisory groups; and 6) other private interests the program has since constructed two sub-tidal reefs in Glynn County and thirteen inter-tidal reefs in seven of the state's major estuaries (Table 1, Appendix I). GADNR currently proposes the addition of one new reef site, St. Andrews, and augmentation to the previously permitted footprint of the Jekyll Island Pier site. These fifteen existing estuarine artificial reefs have come to play an important role in the State's growing marine fisheries and coastal economies, hence enhancements within the present footprints and the addition of one new site are required to sustain the substantial biological benefits generated through the restoration of these highly productive comminutes.

A State program for artificial reef construction is an integral part of any comprehensive State / federal effort to protect, restore or enhance habitats that are essential to valuable commercial and recreational fisheries. Georgia's Program goals include: 1) the creation and long-term enhancement of fisheries habitat; 2) the development of recreational fishing opportunities; and 3) the enhancement of local and regional fisheries management. Increasing demands on fish stocks by both commercial and recreational fishermen and losses of benthic habitat due to development, fishing pressure, and pollution, have had substantial effects on many reef-associated fish species. Properly constructed and strategically sited, artificial reefs can enhance fish habitats, provide increased access to quality fishing grounds, benefit fishermen and the economies of shore communities, increase total fish biomass within a given area, and provide managers with another option for the conservation and management of fishery resources. The Program takes into account the needs of both boat-based anglers in inshore waters as well as recreational fishing access from bridges (Little River reef site) and piers (Jekyll Island Pier reef site). Enhancement of shore-based angling can have particular social and economic significance to coastal communities with heavy tourist traffic and can help to expand public support for the Program's development.

Since Georgia's recreational fishery overwhelmingly targets inshore waters by boat or from the shore (Knowlton, 2012 personal communication: Marine Recreational Information Program), interest continues in the enhancement and development of estuarine artificial reefs. Strong currents and turbid waters generated by tidal extremes and outputs of numerous freshwater river

systems characterize Georgia's coastal and near shore environments. Many fish species such as spotted sea trout (*Cynoscion nebulosus*), red drum (*Sciaenops ocellatus*), sheepshead (*Archosargus probatocephalus*), southern flounder (*Paralichthys lethostigma*), and other important sport fish are dependent on estuarine habitats for food and/or shelter from predation and currents. Habitat associations may be long-term or only temporary, as many fish rely on several different habitat types throughout their life cycles. GADNR-CRD conducts fisheries dependent / independent monitoring and statistics programs for the implementation of socio-economic surveys, assessments, monitoring, and similar activities which can assist in the characterization and evaluation of Georgia's artificial reefs and other habitats. Creel surveys are implemented to quantify use and harvest as well as ascertain associated socio-economic values and parameters at or near Program sites. GADNR-CRD Fisheries Statistic Unit has surveyed coastal access points in Georgia since 1992 with trends showing fishing effort remaining inshore (Figures a-c). Results of the inshore Artificial Reef Program include: 1) improved quality of fishing in estuarine environments; 2) enhancement of fishery resources to the maximum extent practicable; 3) alleviation of fishing pressure on more congested sites; 4) facilitation of access and use by US recreational fishermen; 5) abatement of user conflicts; 6) stimulation of local economies; 7) adjustments to changes in fishing patterns and techniques; 8) increased fishing safety; and 9) decreased fuel consumption per trip as constituents no longer need or can afford to make long trips offshore.

Site Selection and Evaluation

Effective site selection and evaluation is critical in meeting artificial reef development and habitat enhancement goals. Multiple physical, biological, socio-economic, and fiscal parameters require consideration in site selection. Some physical parameters requiring evaluation are substrate type, site topography, water depths, currents and hydrology, wave action, salinities, and water quality. Physical site evaluations also require determination of the possible presence of historical wrecks and artifacts in order to prevent damage to these cultural resources. Added concerns for Inshore Program evaluations include immediate and adjacent property ownership; property lines; landfills; and jurisdictional boundaries. Biological considerations include the life histories and habitat characteristics of targeted fish species and an understanding of associated ecosystems and their requirements. The identification and characterization of existing habitat at and adjacent to proposed sites are also critical biological factors that will determine subsequent development or enhancement efforts.

Social, economic, and constituency factors were all considered in the creation of the Program in order to accommodate a full range of recreational fishing needs. In addition to public input, important socio-economic factors include: 1) the characteristics, resources, and demographics of the targeted user groups; 2) costs for acquisition, cleanup, modifications, transportation, and deployment; 3) safety; 4) accessibility; 5) existing use and other restrictions; 6) regulations; and 7) potential conflicts with navigational interests, shipping, military, and existing fisheries. Economically, artificial reefs can generate significant benefits for relatively low investments. All of these factors were considered when each site was originally permitted. Currently all 15

Figures a-c. Inshore fishing effort trends in CRD-Fisheries Statistic Unit coastal access surveys:

Figure a.

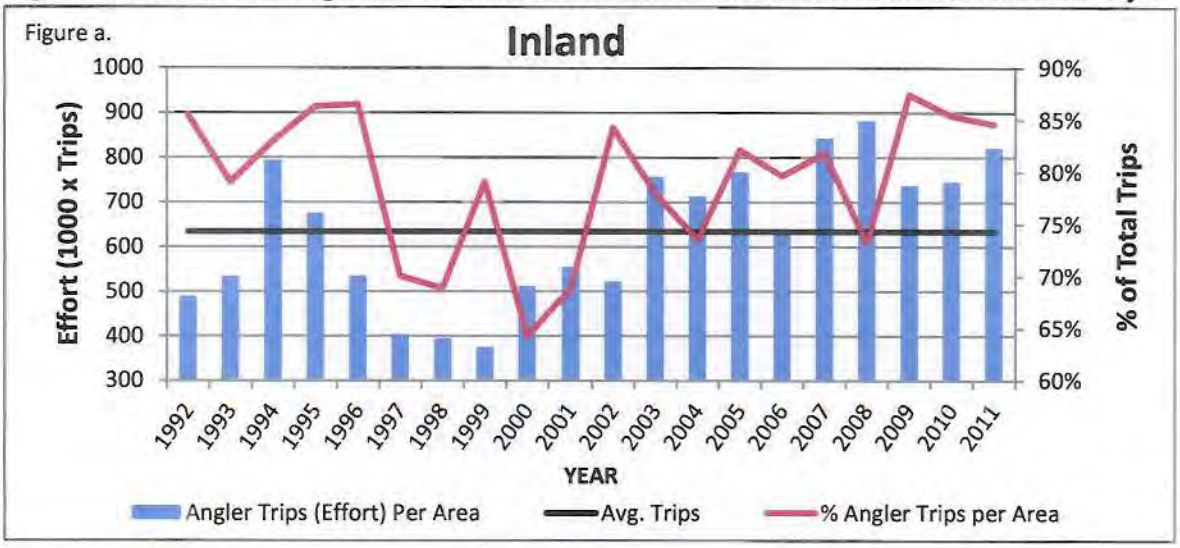


Figure b.

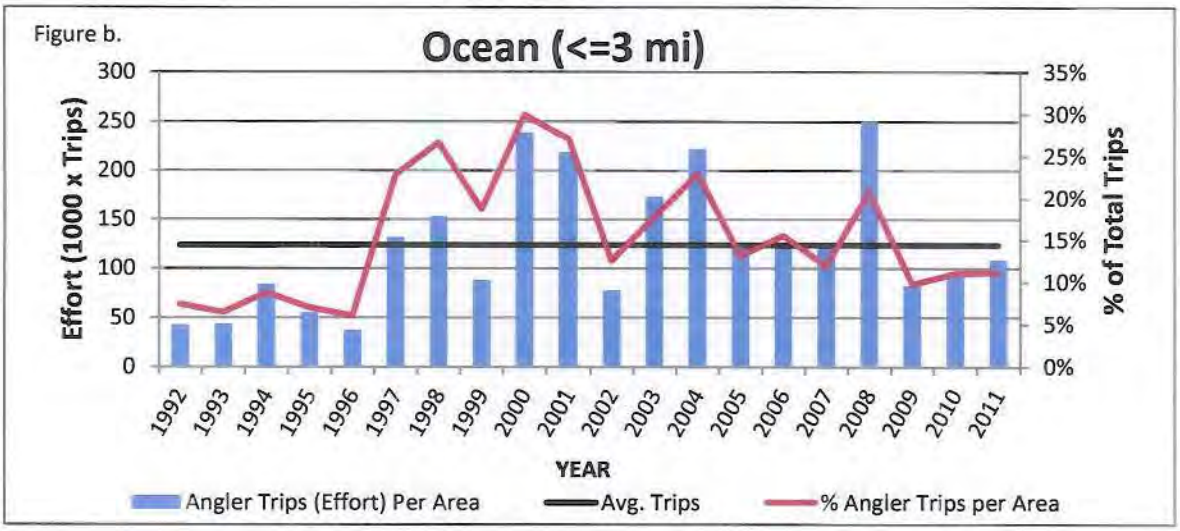
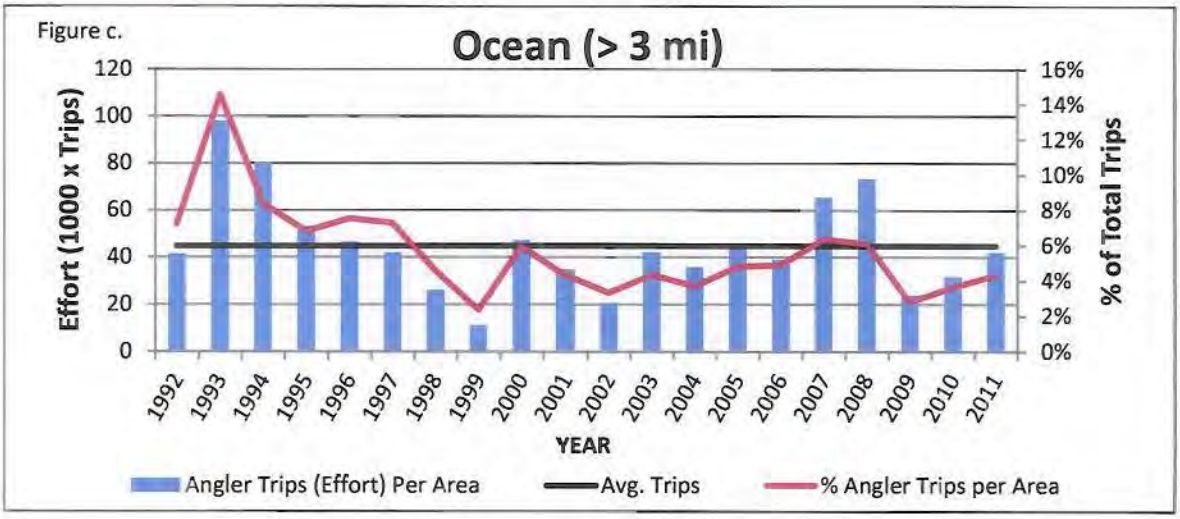


Figure c.



sites are considered productive inshore artificial reefs hence the State's request of a Programmatic General Permit to continue this Program's habitat enhancement through addition of materials to the previously permitted footprints and creation of one new site.

Deployments

The Program is currently the only entity in the State of Georgia with the capability to fund and coordinate development of new and existing reefs in order to enhance fisheries habitat and recreational fishing opportunities. Any materials to be deployed will be inspected by a representative of the GADNR-CRD or its designated official prior to deployment to ensure materials are environmentally safe and free of toxic contaminants or pollutants and meets the terms and conditions in the permit under which the artificial reef is developed. Materials and development activities will satisfy environmental, physical, and other conditions specified in U.S. Army Corps of Engineers (USACE) and State permits, as well as by the U.S. Fish & Wildlife Service, United States Coast Guard (USCG), the Environmental Protection Agency (EPA), Coastal Zone Management, and other state/federal agencies.

Materials have been deployed via contractor or directly by program personnel at the fifteen previously permitted Program sites. Heavy equipment is typically used to move materials on a barge which is then towed to a site where materials are placed in the water. The frequency of deployments is dictated by the Program's fiscal parameters which typically allow for GADNR to conduct deployment of materials one to two times per year at designated reef sites, but this frequency could increase if materials of opportunity are obtained. Materials of opportunity are typically donated and require quick action by GADNR in order to secure the materials. No natural reefs or similar resources occur or will be impacted by reef development activities. Endangered or threatened marine mammals and turtles will not be impacted by the restoration of Program sites, and in general, feeding and foraging opportunities may significantly improve development of these communities. State employee(s) involved with deployment activities will receive endangered species training on: 1) sea turtles; 2) Atlantic sturgeon; 3) manatees; 4) other endangered, threatened, or listed species; and 5) will be present on site when materials are deployed.

Materials Overview

Suitable natural as well as manmade materials properly sited in estuarine areas can provide the stable foundation needed for the development of marine habitats and ecosystems. A variety of non-toxic materials are utilized in the construction of artificial reefs and vary considerably, depending on specific Program goals and other criteria, such as stability, durability, rugosity, surface area, vertical relief, profile, and other features that maximize habitat and long-term fisheries values. While materials of opportunity or secondary use materials are utilized, planned, and focused for artificial reef development, this does not constitute ocean dumping. Inshore habitat development and enhancement in Georgia has relied primarily on materials of opportunity including: 1) concrete culvert, forms, pilings, rubble, power poles and bases; 2) designed Polyvinyl chloride (PVC)/concrete fisheries aggregating devices (FADs); 3) bridge supports and similar heavy metal structures; 4) and metal transport cages (Appendix II). Properly

sited and strategically deployed, these materials can be extremely effective in creating productive fisheries habitat and generating substantial, long-term recreational opportunities for comparatively low costs. However, the sporadic availability of materials of opportunity can be problematic, especially for long-term planning and budgeting. As a result the Program also employs engineered concrete units (FADs) specifically designed to support the long-term development of functional marine ecosystems and associated fisheries. Commercially available, engineered units represent an important material source and planning option for reef and habitat development programs.

Per permitting and other requirements, all materials utilized in artificial reef construction must be free of floatables and toxins to ensure no degradation of the current water quality. Materials utilized at the reef sites will also be of significant density and composition to ensure stability and durability following placement. Adverse environmental impacts will be minimal at the sixteen proposed sites, as non-toxic and thoroughly cleaned materials with limited existing footprints will be used in reef development.

Materials Criteria and Specific Requirements

Inshore artificial reef materials will not create hazards to navigation or the marine environment and will not create the potential to trap marine vertebrates. Materials are required to be: 1) extremely durable in seawater and non-subsiding in sediments; 2) have suitable substrate characteristics and ample surface area for fouling organisms; 3) create vertical profile and structural complexity to encourage species diversity; 4) ensure adequate water circulation; 5) provide refuge for animals; 6) do not contain exposed rebar or other protruding steel components which may entangle fishing gear or line; and 7) maximize the Program's benefit-to-cost ratio. Additionally all materials used in construction must be free of asphalt, petroleum, other hydrocarbons, and toxic substances that may be harmful to humans, animals or other aquatic life; substances attributed to municipal, industrial, or other discharges producing color, odor or other conditions in such degrees as to create a nuisance; loose free-floating materials; and material producing turbidity will be minimized.

Approved Material Types (Appendix II)

Shell- Shell materials, such as clam and oyster shell, are naturally occurring in the marine environment and pose no threat to the environment or associated living resources.

Rock- Rock is a naturally occurring, stable material that poses no threat to the marine environment or associated living resources. Surfaces of "natural" rock such as limestone and granite are irregular and rough, making them attractive to attaching organisms.

Designed Materials- The use of designed materials are deemed compatible with the marine environment and pose no threat to living marine resources. Such designed materials will adhere to the other basic criteria of function, stability, and durability.

Concrete- Concrete is a dense, stable material that is environmentally compatible and can be used in designed structures, such as Reef Balls, Fish Aggregating Devices (FADs), and other forms, culvert, power poles, or as rubble. Concrete is often readily available.

Rubble- Rubble consists of concrete material that has been cleaned to EPA standards and is free from rebar and toxins. Razed buildings, parking lots, road beds, bridges, and other sources typically contain rubble.

PVC- Polyvinyl chloride (PVC) is used as a component in FADs as these structures contain a 3" concrete slab with PVC spikes arranged vertically, pin cushion style. PVC is a stable material and poses no threat to the marine environment or associated living resources.

Metal- Metal is a stable material that is environmentally compatible, can be found in bridge supports and similar heavy metal structures; transport cages and culvert; and poses no threat to the marine environment or associated living resources.

Disapproved Material Types

Railroad boxcars; Subway cars; Steel and wood-hulled ships; Boats; Barges; Manufactured materials using coal fly ash; Military hardware; Vehicle tires; Wood; Automobiles and other vehicles and their associated parts; Aircraft; Fiberglass; White Good (household appliances).

Program Monitoring and Historical Insights

Monitoring has provided a mechanism to evaluate and learn from the efforts of past projects and to prepare for future reef construction / development techniques and activities. Long-term success of the Program is due to site selection and reef materials deployed which have remained in place over the years and continue to provide a durable, safe, and effective substrate for the foundation of the reef community itself. Stability and structural integrity are critical factors involved in evaluating the success of a particular type of reef material from an engineering standpoint. Due to differing water dynamics and substrate properties at individual sites some reefs have been more successful than others. Program materials are designed to be functional, compatible, stable, and durable for each site location. Each reef was designed with a low profile to replicate naturally occurring oyster beds and other relief for suitable habitat of more demersal/ benthic species. Design criteria also took into account interstitial space and total surface area. Adequate interstitial spaces, numerous holes, crevices, walls and overhangs in a reef structure, are necessary to establish a rich diversity of motile invertebrates as well as numerous cryptic fish species. In low profile benthic reefs, the total biomass that can be supported on an artificial reef will be directly related to the quantity and quality of effective surface area available to sessile marine organisms.

Successful materials deployed by GADNR show recruitment of fish, long-term compatibility with the aquatic environment, and consist of: 1) various types of concrete materials such as

bridge rubble and railings, culvert, pilings, PVC/concrete Fish Aggregating Devices (FADs), commercially constructed FAD units known as "Bay or Reef Balls," and experimental pyramid shaped FAD units; 2) plastic (PVC) culvert pipes of various sizes and diameters, and 3) finally metal transport cages. The only materials to have failed, completely subsided into the substrate, are concrete walkways placed at Mud Creek and metal transport cages at the Timmons River site. It should also be noted that PVC/concrete FADs are highly productive materials but at a few sites concrete bases have subsided in the substrate, and PVC pin cushion style arms have broken, however GADNR feels that this material meets acceptable standards for continued use within the Program.

Program Compliance

This Program will adhere to all conditions and restrictions of the Coastal Marshlands Protection Act as well as comply with all Federal, State, and local statues, ordinances and regulations. Project description and location maps will be provided to GADNR-CRD-Ecological Services Section (ESS) in order to obtain a letter of permission for the deployment of materials at the sixteen inshore artificial reef sites authorized under the Coastal Marshlands Protection Act. Site-specific details will be provided for each individual location as they are identified per fiscal year and a letter of permission will be obtained prior to commencement of work at each location. Certification of Compliance will also be submitted to ESS within 30 days following completion of the permitted activity.

Under USACE and State permitting requirements for the development of Program reefs, the State of Georgia assumes responsibility for all sites and materials subsequently deployed. As permittee, it is the State's responsibility to ensure ongoing compliance with permit specifications, including the stability of deployed materials and structures. Regular compliance surveys and mapping of artificial reef sites and materials occur to ensure adherence to permit specifications, and also to identify and offset potential liabilities that may exist post-placement or develop over time as reef structures deteriorate. Under USACE permitting, the State is also required to submit a compliance report by September 1st of every year. The compliance report includes: 1) a project summary providing an overview of activities per year; 2) site selection and evaluation criteria used; 3) dates of deployments; 4) staff training and on site deployment activities, contractor used; 5) types of materials deployed per site and any specific requirements of materials; 6) the GADNR-CRD-ESS letter of permission; and 7) program maintenance activities such as side scan sonar readings per site evaluated and aerial over-flight photographs / videos.

Baseline compliance surveys and specific activities completed previously at the State's 15 estuarine artificial reef sites include: include post-deployment surveys / verifications; material evaluations; performance monitoring efforts; directed inspections and assessments and other activities needed to support program planning, permitting, and field operations. Survey designs, site variables, and techniques employed at each site differ due to limitations of the side-scan sonar equipment's use over shallow inter-tidal reefs and sites where maneuverability is

restricted. The Program's use of side-scan sonar technology has significantly enhanced compliance and monitoring capabilities by providing baseline information needed for permitting, material quantifications, and future comparisons. The equipment's wide lateral coverage allows for more rapid surveys of existing and potential reef sites and has proven especially useful in turbid inshore waters. In addition to sonar, helicopter over-flights have been conducted at mean low waters to photograph and document material locations and orientations.

Program Maintenance

Each Program reef site is clearly delineated by concrete/wooden pilings with signage warning for navigational interests of reduced water depths and hazards thereby assisting anglers (Appendix II). All pilings have been permitted through the USCG as "Aids to Navigation" or "Special Purpose Marks" as inter-tidal reefs may be slightly submerged at times, the potential risks to navigational interests operating in inland waterways is evident. Typically 2-4 pilings with appropriate hazards and program signage are placed and maintained at each inshore reef site by program personnel. As officially designated private aids to navigation significant penalties may be imposed if these aids are not maintained as specified, in addition to the significant liabilities associated with an improperly maintained or missing navigational aid, especially in shallow and heavily utilized waters. Assessments are performed at all reef sites to re-examine and re-evaluate marking requirements, existing systems, identify ongoing hazards / liabilities, and potential or needed improvements. Ongoing monitoring of potential wear and deterioration to the inshore reef marker pilings occurs during annual maintenance inspections of pilings and hazards signage; and replacements of damaged and worn signage and pilings occurs.

To date, inshore reef maintenance activities have been largely limited to replacements of missing, damaged, or faded hazards and programmatic signs. However, the loss of a corner piling from the Troupe Creek Artificial Reef (Glynn County) in 2008 raised concerns regarding the condition of pilings in place at the estuarine reef sites. Primarily wooden, some marker pilings have been in place for almost 20 years. Subsequent program inspections have noted some deterioration and thinning of other wooden pilings elsewhere. In light of the potential liabilities associated with missing inshore markers and errant pilings, eventual replacement of all wooden pilings with concrete units should be considered if fiscally feasible. In order to remain within annual maintenance program budgets, systematic replacements of the pilings over several years need to be implemented. The Program currently maintains 35 signed pilings at the State's 15 inshore reef sites including 13 inter-tidal reefs that are largely exposed at low tide, 1 entirely submerged sub-tidal reef at the Little River Site, and 1 entirely submerged sub-tidal reef at the Jekyll Island Pier site where no pilings are currently in place as the pier restricts boat traffic near shore.