# GULF COUNTY RESTORE ACT PROJECT PRE-PROPOSAL FORM

*Project Name:* North Site Artificial Reef Construction

*Submitting Entity:* Mexico Beach Artificial Reef Association (MBARA)

**I.** *Please select one or more eligible activity that the project is classified under:*

- ☑ *Restoration and protection of the natural resources, ecosystems, fisheries, marine and wildlife habitats, beaches, and coastal wetlands of the Gulf Coast region.*
- ☑ *Mitigation of damage to fish, wildlife and natural resources.*
- ☑ *Implementation of a federally approved marine, coastal or comprehensive conservation management plan, including fisheries monitoring.*
- ☑ *Workforce development and job creation.*
- ☐ *Improvements to or on State parks located in coastal areas affected by the Deepwater Horizon oil spill.*
- ☑ *Infrastructure projects benefitting the economy or ecological resources, including port infrastructure.*
- ☐ *Coastal flood protection and related infrastructure.*
- ☐ *Planning assistance.*
- ☑ *Promotion of tourism and seafood in the Gulf Coast region.*

**II.** *Please provide an executive summary of the project. Describe/quantify the economic (jobs, infrastructure, tourism, etc.) and environmental benefits (habitat, quality, knowledge, long-term sustainability, etc.).*

*The project plan is to construct artificial reefs using prefabricated materials consisting of one US Coast Guard Cutter (or similar type of vessel), 69 Florida Limestone Artificial Reef modules, 82 Ecosystem Reef modules, and 28 Grouper Reef modules will be distributed as 17 patch reefs within a one-square nautical mile area currently permitted by the US Corp of Army Engineers (USACE). The project area is named the Bridge Rubble Site and is located 15 nautical miles west of the Saint Joseph Peninsula State Park.* ***(See attached illustrations and descriptions.)***

*The economic benefits associated with artificial reefs in northwest Florida were measured by Bell, Bonn, and Leeworthy (1998). The purpose of the study was to assess the economic impact, user valuation, and benefit-to-cost ratio associated with artificial reefs located in the waters adjacent to Escambia, Santa Rosa, Okaloosa, Walton, and Bay Counties.*

*A total of $414 million in expenditures were associated with artificial reef use. Those expenditures supported 8,136 jobs and $84 million in wages and salaries. Of the total expenditures, $359 million and $56 million were attributed to visitors and residents, respectively. Of the five counties studied, the total expenditures were distributed as*

*follows: Bay (36%), Okaloosa (30%), Escambia (22%), Santa Rosa (7%), and Walton (5%). The willingness to pay for an artificial reef program was also measured for the region. The annual recreational use value was estimated to be $19.7 million, with a discounted asset value of $656 million for the reef program. The benefit-to-cost ratio of the artificial reefs within the northwest Florida region was estimated to be 131, a value indicating an extremely high, positive return to the cost of developing and implementing the artificial reef programs within the five-county, northwest Florida region.*

*Large vessels demonstrate great economic returns. The Oriskany is an aircraft carrier sunk approximately 22 miles off the coast of Pensacola, FL. Approximately 4,200 chartered dive trips were taken to the Oriskany during the first year after the sinking. Average expenditures for dive trips originating from non-local destinations were estimated to be $463, while an average local dive trip resulted in expenditures of $352. Dive activities originating from Baldwin and Escambia Counties combined resulted in dive-trip related expenditures of $2.2 million, with an economic impact of $3.6 million, the creation of 67 jobs, and the generation of $1.4 million in local incomes. Dive activities originating from Escambia County only resulted in dive-trip related expenditures of $1.2 million, with an economic impact of $2 million, the creation of 37 jobs, and the generation of $740,000 in local incomes.*

*Artificial reefs will benefit the local environment. Our Gulf of Mexico coastal waters are vastly sand bottom environments with an extremely low presence of natural reef habitats and marine life. Artificial reefs create highly productive marine habitats supporting a complex web of marine life vital to sustainment of game fish thereby enhance fisheries for recreational and commercial user groups. These reefs also attract and sustain non-game and ornamental fishes enjoyed by divers, snorkelers, and wildlife observers.*

*Long term, artificial reefs are sustainable. When an artificial reef is constructed, there isn't any maintenance or upkeep required. Nature takes over and builds upon the foundation created by the artificial reef. Suitable and approved artificial reef materials are expected to last and be productive for a minimum of 50-300 years.*

***III.*** *Please provide a cost summary/budget. Detail any matching/cooperative funds available for use, and any cooperative support from governmental or other agencies.*

**Cost Summary:**

*The following costs include administration, preparation, transportation, and installation:*

| Contract | Unit Cost | Quantity | Total Cost |
|---|---|---|---|
| *US Coast Guard Cutter* | *$1,250,000* | *1* | *$1,250,000* |
| *Florida Limestone Artificial Reef Modules* | *$1,495* | *69* | *$103,155* |
| *Ecosystem Reef Modules* | *$1,590* | *82* | *$130,380* |
| *Grouper Reef Modules* | *$1,395* | *28* | *$39,060* |
| ***Contract Totals*** | | | **$1,522,595 (98%)** |
| *Planning Administration* | | | *$5,000* |
| *Construction Administration* | | | *$10,000* |
| *Monitoring Administration* | | | *$15,000* |
| ***Administration Total*** | | | **$30,000 (2%)** |
| **Project Total Cost** | | | **$1,552,595 (100%)** |

**Matching Funds:**

*Previous completed project funding and sources :*

**$57,574** *US Fish & Wildlife Service and Florida Fish & Wildlife Conservation Commission.*

**$19,191** *Mexico Beach Artificial Reef Association (MBARA).*

**Government and Agency Support:**

*The City of Mexico Beach will allow use of artificial reef permit sites.*

*MBARA divers will perform reef monitoring surveys.*

*MBARA will publish artificial reef descriptions and locations for public use on the MBARA website.*

**IV.** *Please provide a timeline for project completion. Explain the technical and environmental feasibility (including any permitting considerations) of the project.*

**Technical and Environmental Feasibility**

*The City of Mexico Beach holds USACE Permit SAJ 2006-01340 (IP-MMW) issued on 27 Nov 2006 and valid through 27 Nov 2016. This permit allows artificial reef construction as prescribed. Artificial reef construction has already taken place at this site with plans for further development.*

**Project Time Line**

| | TASK DESCRIPTION | START DATE | COMPLETION |
|---|---|---|---|
| 1. | *Notification of project funding* | *Day 1* | *Day1* |
| 2. | *Develop contract specifications* | *Day 2* | *Day 32* |
| 3. | *Solicit contract bids* | *Day 33* | *Day 33* |
| 4. | *Close and award contract bids* | *Day 34* | *Day 44* |
| 5. | *Construct/Prepare materials* | *Day 45* | *Day 280* |
| 6. | *Notify FWC, USACE, and USCG of pending deployments* | *Day 266* | *Day 280* |
| 6. | *Develop deployment schedule.* | *Day 280* | *Day 280* |
| 7. | *Deploy materials* | *Day 281* | *Day 285* |
| 8. | *Submit Material Placement Reports.* | *Day 285* | *Day 315* |
| 9. | *Pay contractors* | *Day 316* | *Day 346* |

V. *Please provide the qualifications of the Submitting Entity, the financial feasibility/sustainability and the economic feasibility and sustainability of the project (probability of success, etc.).*

*The Mexico Beach Artificial Reef Association (MBARA), Inc is recognized as non-profit 501(c)(3) organization by the IRS and State of Florida. It has Board of Directors consisting of 9 officers plus 243 members.*

*The MBARA was established in 1997 and has managed the construction of over 150 artificial reefs valued at over $1,000,000. The funding for these reefs was accomplished through volunteer fundraising, donations, and grants.*

*The MBARA has an annual budget of $124,530 to support fundraising, artificial reef construction, and artificial reef monitoring. It is also supplemented by grants where and when available. Over the past 3 years, the MBARA has raised funded over $280,000 in artificial reef construction.*

*Artificial reefs are financially and economically feasible/sustainable. Economic impact studies conducted in Northwest Florida show an annual return of $131 for every $1 invested in artificial reefs. Artificial reefs create habitat producing marine life sustaining greater fisheries for recreational and commercial use. Greater numbers of reefs produce greater numbers of fish attracting greater numbers of recreational users (local and tourist) that purchase goods and services in the local area to support their recreation activities. Goods include fuel, food, tackle, equipment, and tourist shopping. Services include hotels, restaurants, fishing/diving charters, and other tourist activities. When an artificial reef is constructed, there isn't any maintenance or upkeep required. Nature takes over and builds upon the foundation created by the artificial reef. Suitable and approved artificial reef materials are expected to last and be productive for a minimum of 50-300 years. Therefore, every $1,000 invested into artificial reefs is predicted to generate economic returns of $6,500,000 - $39,300,000 over the life expectancy of artificial reefs.*

**VI.** *Please provide the anticipated results of the project, and whether it is included in a City of Port St. Joe, City of Wewahitchka or Gulf County Comprehensive and Mitigation Plan?*

*In summary, this project has great economical and environmental benefits. Studies on economic impact of artificial reefs in Northwest Florida demonstrate an annual return of $131 into the local economy for every dollar invested into building of artificial reefs. Large wrecks/vessels prove to attract more fishing and diving recreation promoting tourism driving greater economical returns in jobs and revenues from tourism. Artificial reefs also have positive environmental impacts by creating and replacing lost marine habitat essential to rebuilding fishery resources for both commercial and recreational use.*

*Additionally, this project supports the Coastal Management, Conservation, Recreation, and Economic Development elements of the County's Comprehensive Plan. It also enhances the County's Local Mitigation Strategy (LMS). The LMS recognizes fishing among the County's four economy resource areas. According to the LMS task force, "tourism from sports fishing drives the local economy". Constructing more artificial reefs creates more habitat increasing local fisheries attracting more tourism for fishing, diving, and snorkeling.*

Submitted By: ROBERT COX, PRESIDENT OF MBARA INC.

Robert Cox
Signature

8 JAN 2013
Date

MEXICO BEACH ARTIFICIAL REEF ASSOC INC. (MBARA)
Company Name

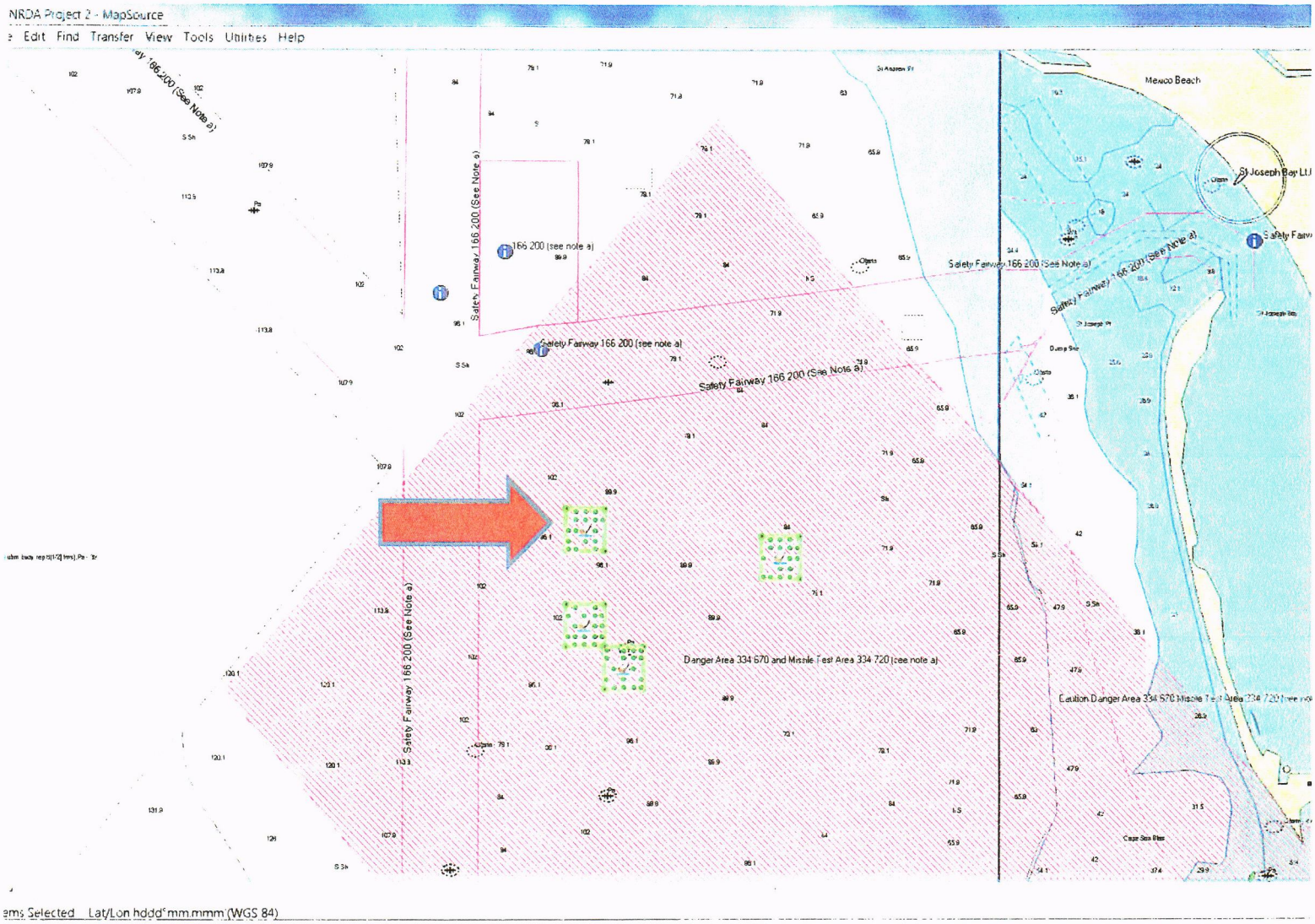
P.O. BOX 13006
Address

MEXICO BEACH, FL 32410
Address

850-527-6306
Telephone Number

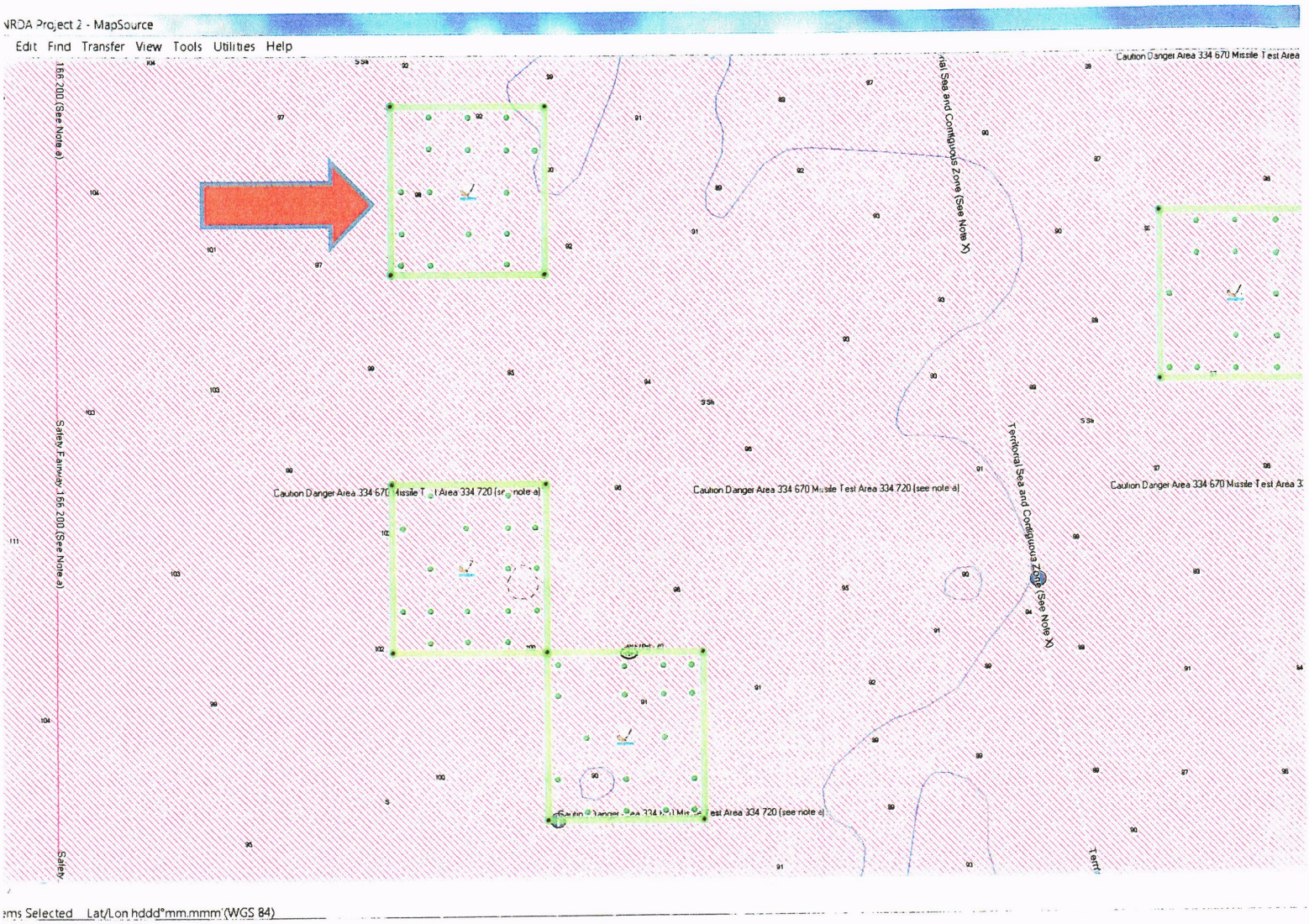
RCOX@MCHSI.COM
E-mail Address (if applicable)

# North Site



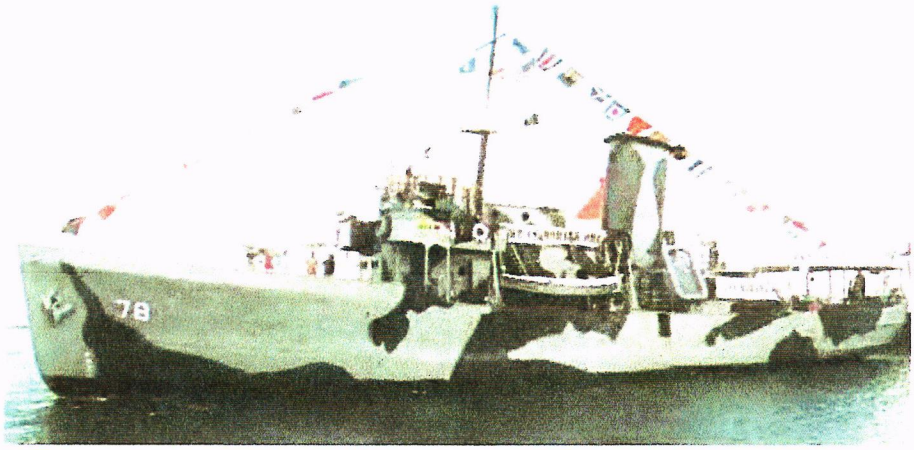

# -USACE Permit valid 18 Mar 2011 thru 18 Ma

# North Site Site




- Green dots represent proposed patch reefs to be constructed
- Sailboat represents 1 vessel to be deployed as a shipwreck reef

# USCG *MOHAWK* (WPG-78)



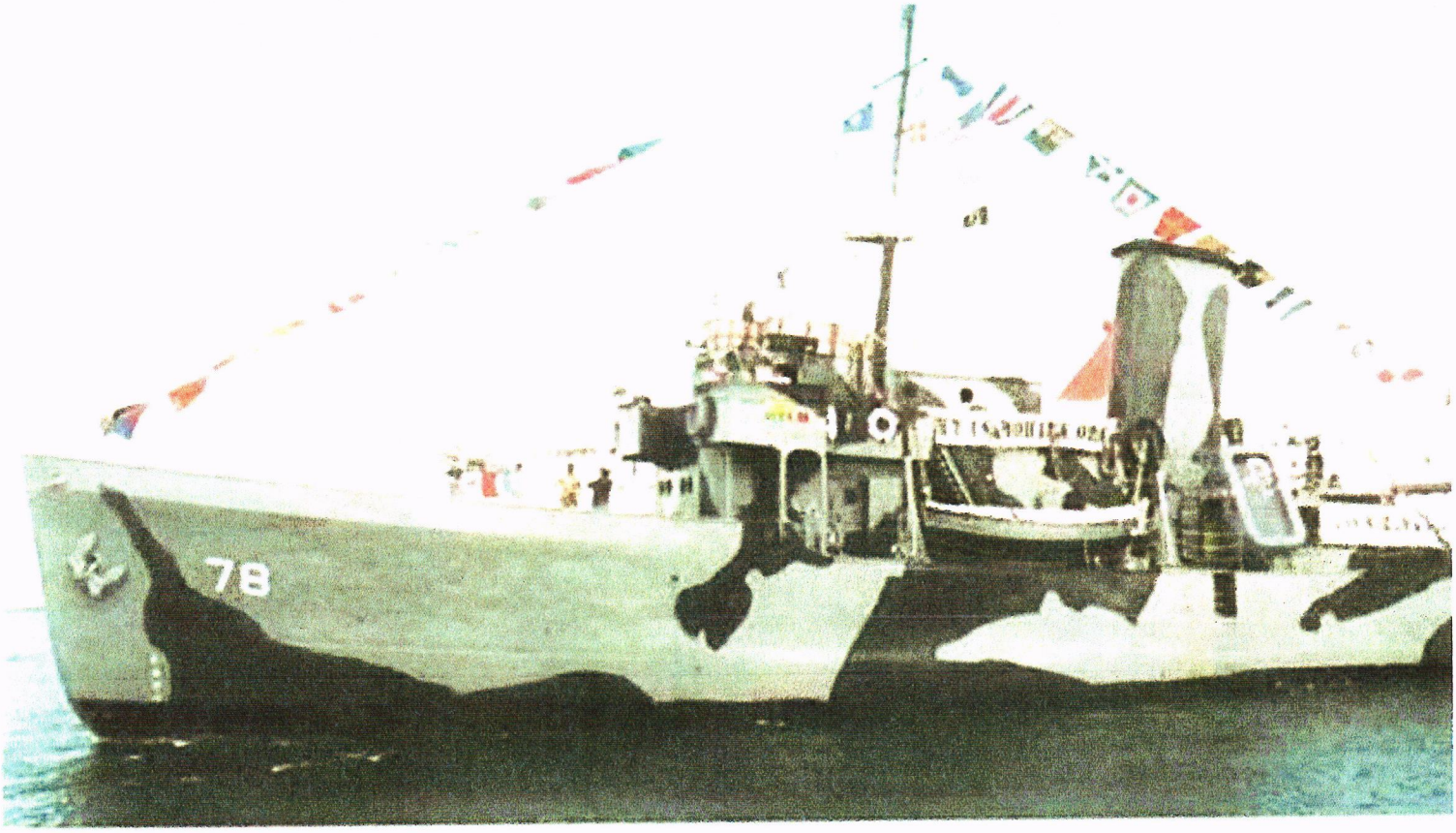

**Class:** "A" Class Cutter
**Type:** Escort/Ice Breaker
**Launched:** 1 October 1934
**At:** Pusey & Jones Corporation, Wilmington Delaware
**Commissioned:** 19 January, 1935

**Length:** 165 feet
**Beam:** 36 feet
**Draft:** 12 feet, mean
**Displacement:** 1,005 tons
Armament: 2 x 3"/50; 2 x 20mm/80 (single mount); 2 x depth charge tracks; 4 x "Y" guns; 2 x mousetrap; 2x 50 cal. Machine guns; 2x 11 mm anti-aircraft guns.

**Address:**
USS MOHAWK CGC Memorial Museum
Truman Waterfront
Post Office Box 186
Key West, Florida 33041

Key West, Florida 33041

# USCGC Mohawk 78

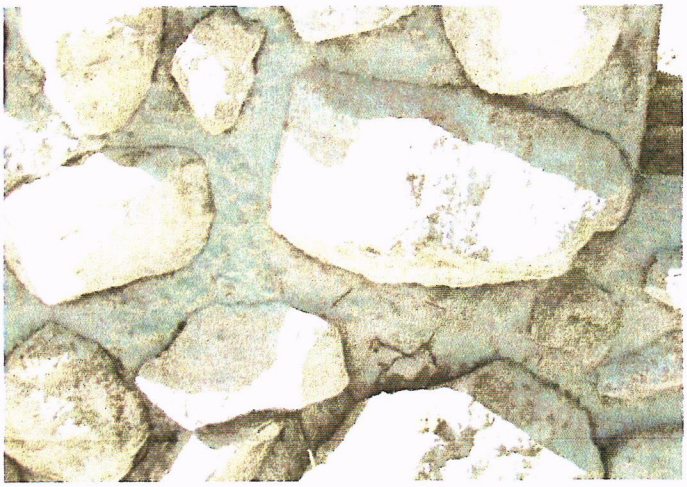


WALTER MARINE
P.O. BOX 998 • ORANGE BEACH, ALABAMA 36561
251-981-6258 FAX: 251-967-2022

The most recent artificial reef developed by Walter Marine is a Grouper reef. It's designed to target Grouper as a habitat. It has one opening to simulate a ledge like cave. The top can be covered in Limestone rock to enhance the reef's PH and habitat qualities. The design has a large opening to mimic Grouper habitat and prevent Sea Turtles from becoming trapped inside.

**MATERIAL SPECIFICATIONS**:

**A. Detailed Description**: The concrete used is 4,000 lb marine grade concrete with Limestone rock. It is reinforced with #4 (1/2") rebar framework is encased in each reef. All welded together to ensure the strongest of structures. Two lifting eyes are provided for each reef.



B. Surface Area:
Each reef has over 600 square feet of surface area.
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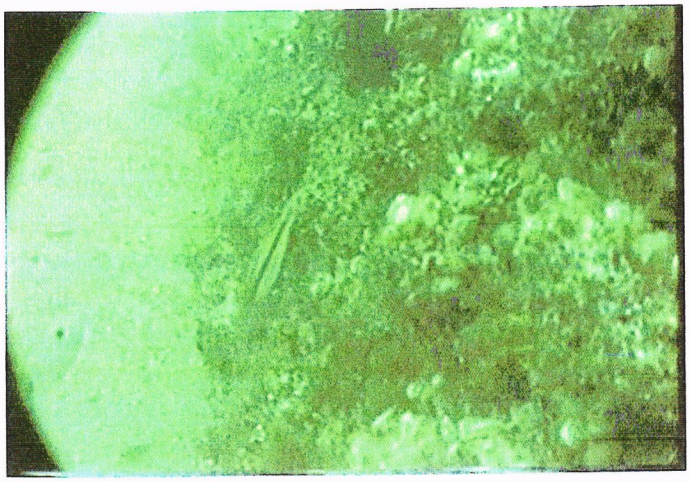
C. Height:
The height is 2 (two) feet.
Length: 8 (eight) feet
Width: 5 (five) feet

D. Volume:
Each reef contains one cubic yard of concrete.

**E. Total Weight:**

4,000 to 5,000 lbs.

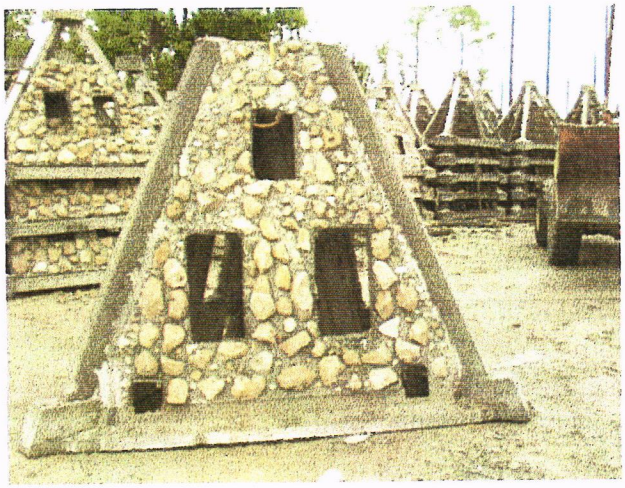


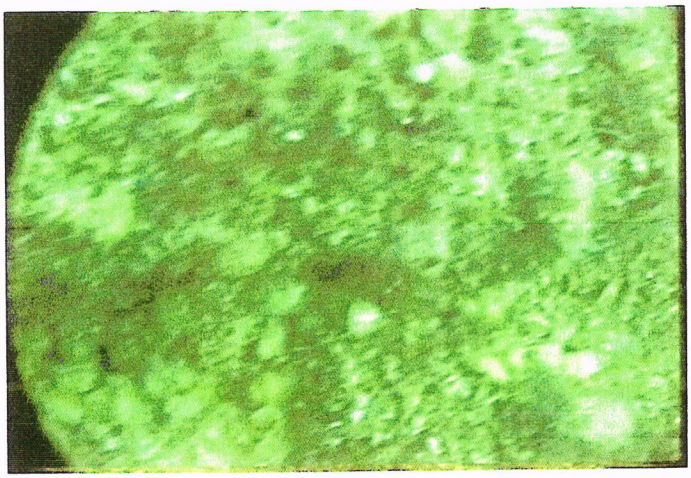
**F. Weight per unit:**

Each unit weights in excess of 4,000 lbs. Each reef could be ordered with 1,000 lbs of Limestone rock.

**G. Microhabitat:**

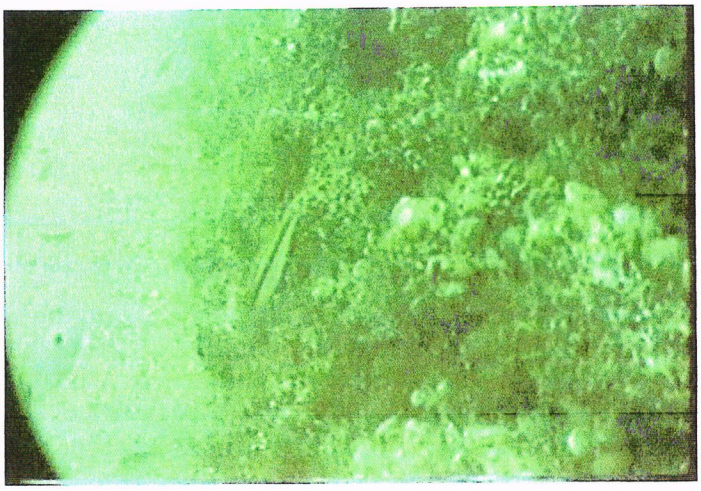
The "Grouper Reef" reef is environmentally and even more so with Limestone Rock added. Its PH perfect surface invites marine animals not usually seen on artificial reefs to settle there. The natural surface attracts and allows all types of marine organisms to attach immediately. The rock relief adds a great deal of complexity to the reef.





**H. Stability/durability:**

The "Grouper Reef" reef was designed for maximum stability and durability. It is heavily reinforced with 1/2 inch rebar. The rebar is welded using a special similar metal welding rod to prevent electrolysis. In addition the rebar is totally encapsulated in concrete with no exposure to saltwater.
The longevity of concrete is yet to be know, so far concrete has survived 2,000 years. It would safe to assume the "Grouper Reef" should last 75 to 300 years underwater and possibility much longer.



**I. Tendency to subside:**

The low profile is not subject to movement or turning over. The foot is 6 inches wide and designed not to scour. The wide footprint will prevent the unit from subsiding.

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The most recent artificial reef developed by Walter Marine uses "Florida Limestone" rocks imbedded in its primary surface area. This coarse-grained, porous, friable variety of classic limestone is made up chiefly of shell fragments. This is the perfect medium for marine animals to attach. Concrete alone has a slightly different PH value and limits growth to hardy species such as Barnacles. Florida Limestone invites all marine animals and because its makeup is the perfect PH and soft enough to allow some boring animals to take up residence.

The design is a stable three sided pyramid with a large footprint to prevent settling and turn over. Its height is 8 feet, base 10 feet and weights in excess of 5,000 lbs.

The opening in the sides provide relief from hydraulic pressure during storms as well as fish entrances. The design is open at the top to prevent Sea Turtles from becoming trapped inside. The reef was designed to simulate a cave-like structure attractive for Grouper.

**MATERIAL SPECIFICATIONS:**

**A. Detailed Description**: The concrete used is 4,000 lb marine grade concrete with Limestone rock. Over 240 feet of #4 (1/2") rebar framework is encased in each reef. All welded together to ensure the strongest of structures. Three lifting eyes are provided for each reef.

B. Surface Area:
Each reef has 800 square feet of surface area. The rocks alone have more surface area than a 5 foot X 5 foot boulder.

C. Height:
The height is 8 feet.

D. Volume:
Each reef contains one cubic yard of concrete.

**F. Total Weight:**

5,000 lbs plus.

**E. Weight per unit:**

Each unit weights in excess of 5,000 lbs. Each reef contains approx. 1,000 lbs of Limestone rock and 4,000 lbs of concrete.

**G. Microhabitat:**

The "Florida Limestone" reef is the most environmentally friendly reef manufactured to date. Its PH perfect surface invites marine animals not usually seen on artificial reefs to settle there. The natural surface attracts and allows all types of marine organisms to attach immediately. The rock relief adds a great deal of complexity to the reef and its design elevates the rock up to and including 8 feet above the ocean floor. The Florida Limestone unit is the only manufactured reef that allows and invites all the marine life found on a natural reef

Studies in the Gulf of Mexico after Red Tide blooms found a dead zone from the bottom up to 5 feet on artificial reefs. Areas above 5 feet were unaffected and teaming with marine life as opposed the area just below the 5 foot mark. Its possible that a reef taller than 5 feet could save reef dwelling marine animals during a Red Tide attack.

**H. Stability/durability:**

The "Florida Limestone" reef was designed for maximum stability and durability. It is heavily reinforced with over 240 linear feet of 1/2 inch rebar. The rebar is welded using a special similar metal welding rod to prevent electrolysis. In addition the rebar is totally encapsulated in concrete with no exposure to saltwater.
The longevity of concrete is yet to be know, so far concrete has survived 2,000 years. It would safe to assume the "Florida Limestone" should last 75 to 300 years underwater and possibility much longer.

**I. Tendency to subside:**

The base design draws heavily from the "Florida Special" unit which has proved itself to be hurricane proof. The "Florida Limestone incorporates a 6 inch wide flange on the bottom to prevent settling and extended corners to increase stability. Numerous windows in each panel to relieve hydraulic pressure during strong currents to prevent turning over. Its weight in excess of 5,000 lbs., assures the reef will stay where its put.

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Walter Marine's EcoSystems is the reef for all reasons. It is complex artificial reef, wave attenuator and oyster reef restoration tool. It's the ultimate research tool that can be configured to any size, height, distance above the bottom, variable complexity and shape. It can be installed in strong surf without danger of damage, scouring, sinking, turning over or movement.

**MATERIAL SPECIFICATIONS**:

A. **Detailed Description**: The concrete used is 4,000 lb marine grade concrete with Limestone rock. It is reinforced with #4 (1/2") rebar framework is encased in each reef. All welded together to ensure the strongest of structures.

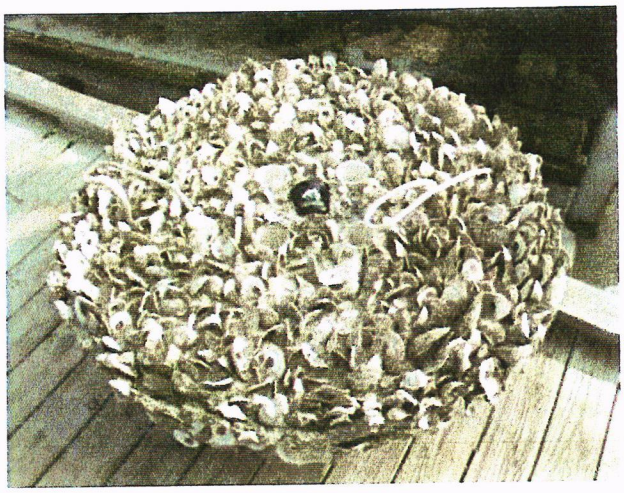
B. Surface Area:
Each disc has over 33 square feet of surface area. .

C. Height:
Variable: Each disc is 9 to 12 inches tall.
Diameter: 3 to 6 feet

D. Volume:
Each reef contains 1/6 cubic yard of concrete.

**E. Total Weight:**

Per Disc 600 to 6,000 lbs

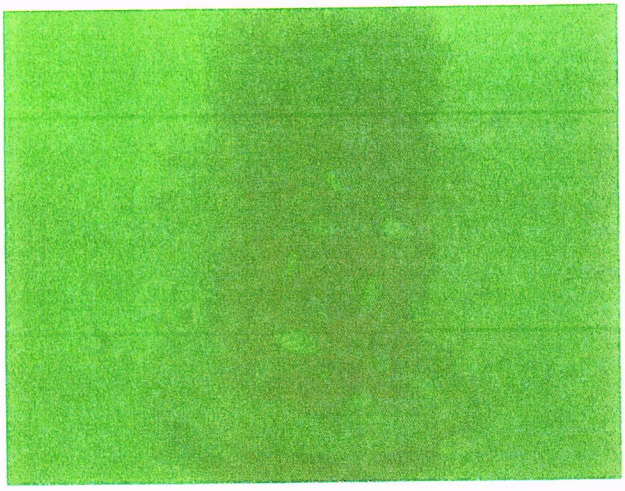


**F. Weight per unit:**

Each disc weights 600 lbs.

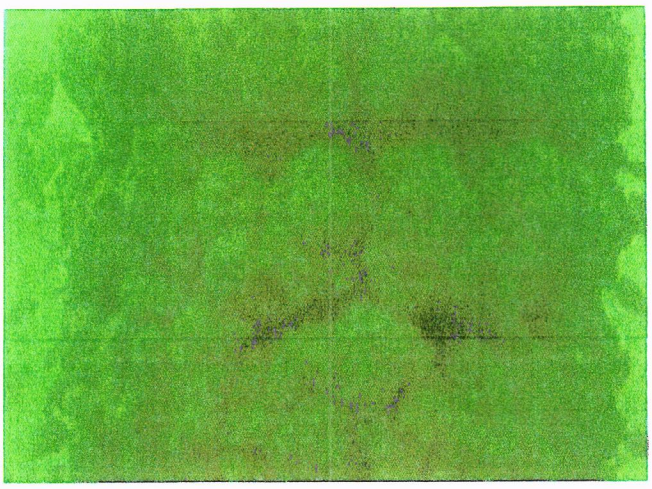
**G. Microhabitat:**

EcoSystems is environmentally and is along with Walter Marine's "Florida Limestone unit is the only manufactured artificial reef in the world capable of attracting and sustaining all the marine life located on a natural reef. The stackable discs is the only complex artificial reef on the market today.



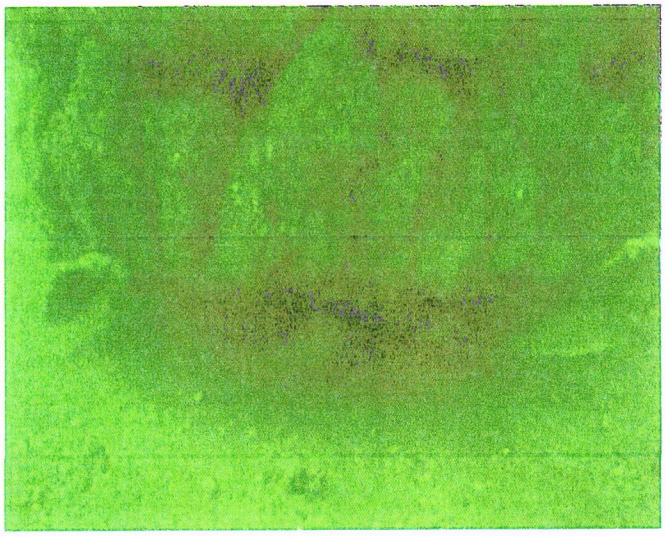
**H. Stability/durability:**

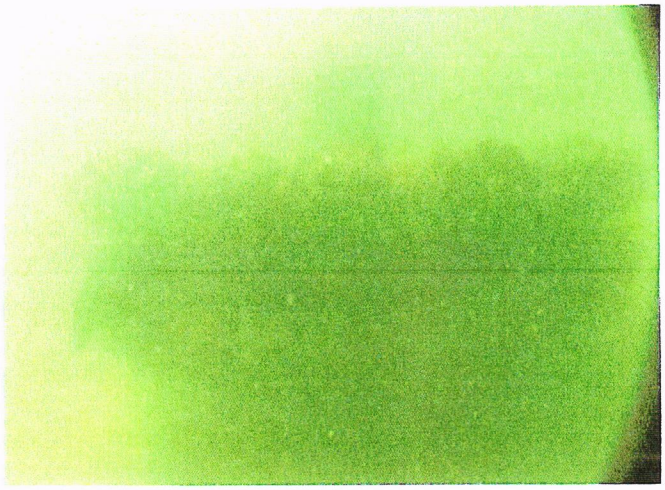
EcoSystems is the most stable artificial reef on the market today, due to its piling mount system. The piling is constructed of fiberglass and neither the concrete discs, Limestone rock or the piling have a known life span. It is know that concrete used 2,000 years ago is still stable and the first fiber-glass made over 50 years ago is structurally sound.



**I. Tendency to subside:**

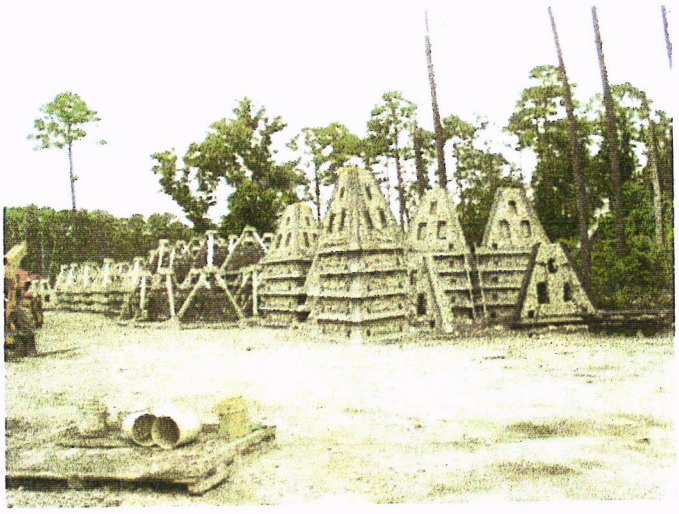
Piling mounting negates any tendency to subside and pedestal/concrete disc mounting has proven stable in 60+ ft.





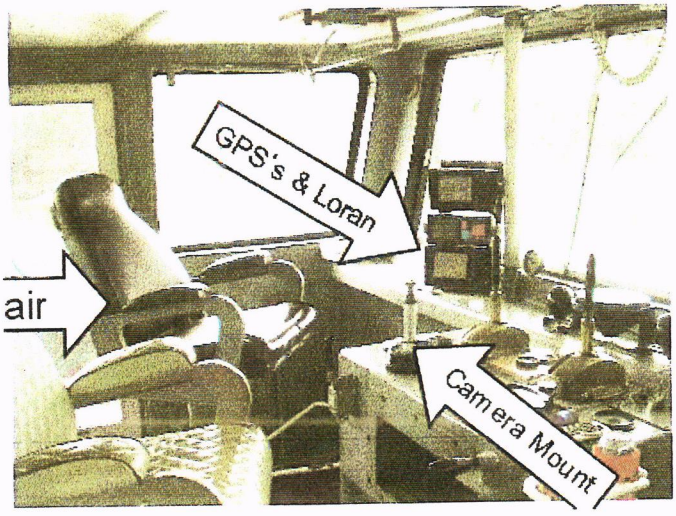
**Available deployment resources:**

- Manufacturing capacity is six reef units per day
- The Florida Limestone comes from a quarry in Perry Florida and is trucked Walter Marine.
- Reynolds Ready Mix is an established concrete plant less than a 1/4 mile from our location.
- Walter Marine owns its own facility on the Intra-Coastal Canal in Orange Beach, Alabama.
- Reefs are manufactured, stored and loaded onto our vessel at our location.
- Storage capacity is over 1,000 reef units.



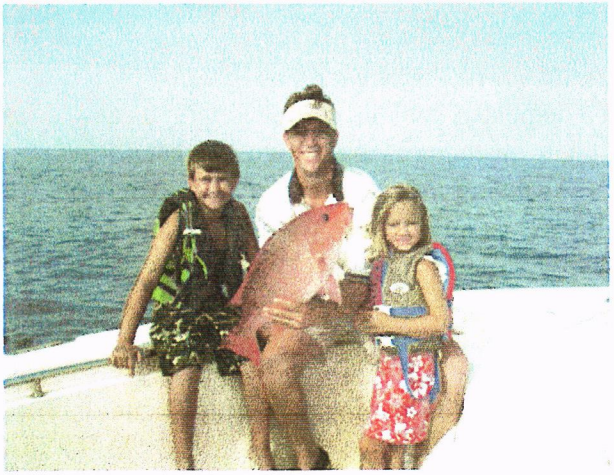
The "MARANATHA" a "State of the Art" deployment vessel refitted in 1996 for deploying artificial reefs. Entities using the "MARANATHA" have commented on the ease and efficiency the "MARANATHA" deploys reefs.
It has a dedicated console complete with a captains' chair for the viewing of two Northstar 951 GPS's. A camera mount is provided to snap a picture of the navigation console at the time of deployment to assure the most accurate of records. Lighting is provided for nighttime operation, should it be required.

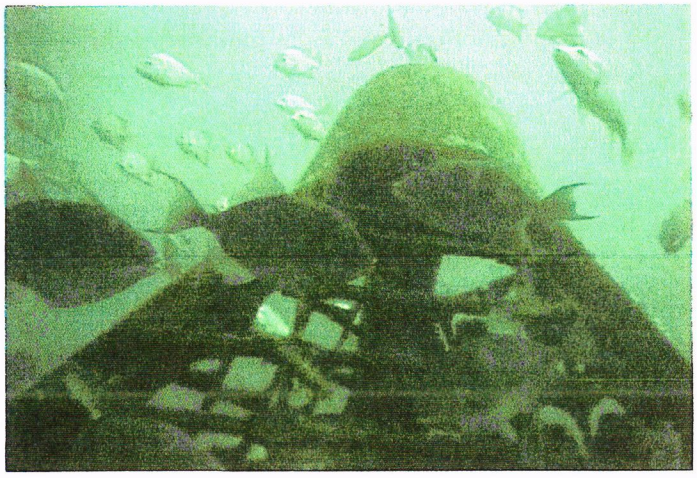
- Reef capacity 70 units
- 20 ton crane for loading and deployment
- 800 HP
- 8 Knots
- 250 KW generator capacity
- 2400 sq. feet of deck space available
- 13,000 gallons potable water
- 12,000 gallons fuel w/off-boat fueling capability
- Barge pushing and towing capability
- Air-conditioned
- Satellite telephone
- Two VHS radios
- Northstar 951 GPS
- Northstar 951 GPS



**Task Plan**

- The MARANATHA will arrive on site at the predetermined time
- Reef units will be deployed using GPS coordinates or for multiple deployments buoys will be used or in some cases anchoring.
- Al reefs are guaranteed to upright and fully intact.
- No sub-contractors are used by Walter Marine
- All reef operations are fully compliant with U.S. Army Corps of Engineers, U.S. Coast Guard, EPA, Florida Department of Environmental Protection, Florida Fish & Wildlife Commission and the Gulf States Artificial Reef Plan.





**Schedule of Operations**

- Upon award of contract officials are invited to our facility at anytime to inspect reef units and begin permitting process.
- Walter Marine will monitor the "sea state" conditions for a deployment window.
- A mutually agreeable window for deployment will be arranged.
- The "MARANATHA" will be loaded with the permitted "Florida Limestone" reef units.
- Travel permit arrangements will be made with the Alabama Department of Conservation
- The "MARANATHA" will depart at a time to allow sufficient time to arrive onsite at the agreed upon time.
- All units will be deployed in one day.

BOARD OF COUNTY COMMISSIONERS
GULF COUNTY, FLORIDA
RESTORE ACT COMMITTEE (R.A.C.)
1000 CECIL G. COSTIN SR. BLVD., ROOM 312 , PORT ST. JOE, FLORIDA 32456
PHONE (850)229-6144 • FAX (850) 229-9252 • EMAIL: tkopinsky@gulfcounty-fl.gov

# PUBLIC RECORDS POLICY AND PUBLIC ACCESS ACKNOWLEDGMENT FOR GULF COUNTY RESTORE ACT APPLICANTS

I, ROBERT L. COX the undersigned authority and/or representative of the entity MBARA and or the individual who has submitted the Gulf County RESTORE Act Proposal/Pre-Proposal titled NORTH SITE ARTIFICIAL REEF CONSTRUCTION hereby acknowledge, consent and accept the following representations that coincide with my/our submission for consideration, evaluation and possible recommendation and approval by the Gulf County Board of County Commissioners for funding from the RESTORE Act distribution that strictly complies with the guidelines and regulations set forth under the Restoration and Ecosystems Sustainability, Tourist Opportunities and Revived Economies of the Gulf Coast States Act of 2012:

1. I/We am the authorized representative of the application/pre-proposal referenced above.
2. I/We have thoroughly reviewed and familiarized myself and/or my entity on which I have submitted the application/pre-proposal on behalf of with the entirety of the Gulf County Public Records policy.
3. I/We have thoroughly reviewed and familiarized myself and/or my entity on which I have submitted the application/pre-proposal on behalf of with the entirety of the Florida Statute Chapter 119 which controls and permits public access to information.
4. I/We hereby acknowledge, consent and agree to the controlling policies and statutes above as well as the free and open exchange of any and all submissions provided hereunder this application/pre-proposal and all information exchanged hereafter including but not limited to further amendments to these proposals as well as surveys, studies, research, data production, books, drawings, property records, work papers, county owner lists, files, forms, reports, accounts, documents, manuals, handbooks, instructions, printouts relating in any manner for the production of the application. In addition, all papers, notes, data, reference material, documentation, programs, printouts, and all other media and forms of expression that in any way include, incorporate or reflect any confidential information of what ultimately shall become the Gulf County plans for use and application of the RESTORE Act funding.
5. I/We acknowledge, agree and fully consent to cooperate with the appointed Gulf County RESTORE ACT committee, county officials and staff as a continuing obligation and condition of final review for this RESTORE Act application/pre-proposal.
6. I/We have submitted this acknowledgment to Gulf County RESTORE Act Committee and the Gulf County Board of County Commissioners for the purpose and intent of receiving an evaluation, review and possible recommendations for anticipated funding from the Restoration and Ecosystems Sustainability, Tourist Opportunities and Revived Economies of the Gulf Coast States Act of 2012.

Signature of RESTORE Act Applicant

Date: 16 JAN 2013

ROBERT L. COX
Printed Name

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