

# STANDARD OPERATING PROTOCOL FOR ARTIFICIAL REEF CONSTRUCTION

December 2021

Alabama Department of Conservation and Natural Resources Marine Resources Division  
Dauphin Island (251) 861-2882  
Gulf Shores (251) 968-7576

**Any person, firm, or corporation wishing to deploy structures to be used as artificial fishing reefs must adhere to the following construction and deployment guidelines and float plan filing procedures. THE ALABAMA ARTIFICIAL REEF CONSTRUCTION PROTOCOL CAN CHANGE! CONTACT YOUR LOCAL MARINE RESOURCES DIVISION OFFICE FOR UP-TO-DATE INFORMATION.**

## **INSPECTION AND PERMITTING**

**1) All Structures must be inspected and permitted prior to deployment.** Structure(s) to be inspected must be in such position as to allow a complete and safe inspection.

**2) A \$33.00 inspection/permit fee** is required for each individual structure, payable to the Alabama Department of Conservation and Natural Resources - Marine Resources Division (ADCNR/MRD) by personal check, cashier's check or money order. If the applicant intends to deploy two or more structures to build a single reef, each structure must be strongly affixed to one another such that components remain attached upon settlement on the seabed after deployment. Multiple components not so attached will be permitted separately and subject to additional inspection/permit fees for each independent structure. ADCNR/MRD inspectors will signify approval of an acceptable structure(s) and configuration by applying an approved ADCNR/MRD Permit Placard (see example Permit Placard in Appendix I) to the structure(s) and issuing a permit. A Permit Placard signifying ADCNR/MRD approval will not be placed on the structure(s) until all discrepancies identified by the inspector have been corrected. Also, the ADCNR/MRD agent will complete the first three sections of the Permit Application Form (Appendix II) and the ADCNR/MRD agent's signature signifies acceptance of the Permit Application Form. The Permit Application Form is considered the "Permit" after the ADCNR/MRD agent has signed the Permit Application Form. The "Float Plan" section may be completed at the time of permit authorization if the applicant has sufficiently planned the deployment voyage. If the applicant has not sufficiently planned the deployment voyage, the "Float Plan" section will not be completed at the time of permit issuance. The applicant will be issued two carbon copies of the signed Permit Application Form (a pink and yellow carbon copy). The yellow copy is issued for the applicant to keep for the applicant's records. The pink copy will be submitted to ADCNR/MRD from the applicant after reef deployment and the "Notification of Completion" section has been completed. The pink and yellow carbon copies of the Permit Application Form signed by the ADCNR/MRD agent and the Permit Placard(s) affixed to the structure(s) serve as the required permits for the project and must be possessed and affixed, respectively, for the duration of the deployment project.

**3) The \$33.00 inspection/permit fee per individual structure applies to all artificial reef building structures transported through Alabama's waters for deployment offshore to reef zone areas specifically designated on the permit.** If permitted artificial reef structures are transported through Alabama waters for deployment in another state's waters, **permit(s) from that state must be in the possession of the permittee, in addition to the Alabama permit.**

## **STRUCTURES AND COMPONENTS**

The Marine Resources Division's goal is to provide long-lived, locationally stable marine habitat that will support a complex reef community. Material(s) to be used in the construction of artificial reefstructures should be chosen with safety to the marine environment, durability, and stability in mind. All structures must be of such construction and material type so as not to disassociate and be substantially weighted to ensure that it will stay in place on the bottom. All materials that could float during deployment must be removed, and all components of the structure(s) must be cleaned to ensure that no visible oil or other chemical "sheen" will be evident upon deployment. Similarly, all components of the structure(s) with a coating that could be considered a contaminant to the marine environment may require further investigation prior to being permitted. **Prospective reef builders should consult with ADCNR/MRD inspectors regarding the acceptability of any potential structure before construction. Call the ADCNR/MRD for information and/or pre-certification.** Examples of acceptable materials follow.

### **CONCRETE**

Concrete, whether from demolition or purposely fashioned, makes excellent artificial reef structure and components. Specifics of preparation include:

- 1) Concrete must be clean and free of residue.
- 2) Any exposed steel reinforcement rod associated with concrete structures must not extend greater than 4" from the concrete limit entanglement of fishing gear and endangerment to divers.
- 3) Reinforcement rods used in purposely fabricated concrete reef structures to increase structural complexity must be configured so as to not entrap wildlife.

### **STEEL OR OTHER METALS**

Certain metal may be permitted for use as structures deployed to build in artificial reefs. Inspectors will review plans and evaluate same based upon composition, durability and proper weighting, with permits being issued on a case-by-case basis.

### **LARGE VESSELS**

Ships and other large vessels will be inspected and permitted on an individual basis and may require United States Coast Guard and/or Environmental Protection Agency certification. Cost of testing materials during certification application process is the responsibility of the owner or may be negotiated.

### **Wood**

Wood may be incorporated into reef structures with the following requirements: wood is free of creosote or potentially deleterious treatments, sufficiently attached or embedded in the structure and does not provide sufficient buoyancy to the reef to facilitate movement during tropical storm activity. Permissibility of wood is determined on a case-by-case basis.

## **Containers**

Some containers may be used as artificial reef material provided they are clean and modified to meet density, hydraulic pass through (i.e. surface area of overall reef shape whereby water can enter and pass through the reef from one side of the reef to the other side of the reef), and structural requirements. Containers such as large roll off dumpsters or CONEX shipping containers may be used after additional weight and interior structural braces are added to prevent walls from collapsing, increase locational stability, and strengthen structural integrity. Additionally, holes must be cut in each side/roof of CONEX shipping containers (and other similar containers) to ensure at least 25% hydraulic pass through on all sides.

## **MISCELLANEOUS STRUCTURES - Constructed of approved material(s)**

- Density must be at least 1.5 lbs per ft<sup>3</sup> if hydraulic pass through is greater than 75%,
- Density must be at least 3.0 lbs per ft<sup>3</sup> if hydraulic pass through is between 50% and 75%
- Density must be greater than 4.5 lbs per ft<sup>3</sup> if hydraulic pass through is between 25% and 50%.
- Density must be greater than 7.5 lbs per ft<sup>3</sup> if hydraulic pass through is less than 25%.
- If the structure has an open bottom, the structure must have an unobstructed opening on a side adjacent to the bottom if the structure has greater than 75% pass through.
- Structure must weigh at least 600 lbs
- Structure must have a volume no less than 125 ft<sup>3</sup>.
- Weight per square foot of the entirety of the footprint of the reef must be at least 15 lbs/ft<sup>2</sup> if pass through is greater than 50%
- Minimum thickness of primary frame or structural components of metal must be at least 3/16" and metal less than 1/8" in thickness will not be permitted
- Cylindrical items (excluding concrete) must be modified to have a structural beam (of sufficient length) extending through the middle of the structure and perpendicular to the longest axis of the structure to prevent rolling due to hydraulic forces
- Chain link, woven or twisted wire fence material will not be permitted
- Structures that do not meet the above criteria may be modified to meet the required specifications. For example, concrete may be poured into a container or the structure may be embedded into concrete to increase density.
- Alternative designs that do not meet these criteria will be evaluated on a case-by-case basis.

Examples of possible structures and modifications potentially suitable for artificial reef construction.

<b>Structure</b>	<b>Volume (ft<sup>3</sup>)</b>	<b>Weight (lbs)</b>	<b>Density</b>
M60 battle tank	5,400	108,000	20.0
20 yd dumpster*	644	4132	6.4
30 yd dumpster	955	4745	5.0
40 yd dumpster*	1,294	5,379	4.2
10' Conex Shipping Container*#	680	2,850	4.2
20' Conex Shipping Container*#	1,360	5,050	3.7
20' High Conex Shipping Container*#	1,520	5,181	3.4
40' Conex Shipping Container*#	2,720	8,000	2.9
40' High Conex Shipping Container*#	3,040	8,775	2.9
Chicken Transport Devices Permanently Attached	128	600	4.7
15' Concrete Pyramid	1,049	37,000	35.3
8' Concrete Pyramid	176	5,500	31.3
42' X 8' X 3' Cylindrical Tank**	1,008	8,500	8.4

\* Concrete ballast must be added to increase density or holes cut in solid surfaces to increase hydraulic pass through.

\*\* Perpendicular beam must be added to prevent rolling.

# Internal structural supports must be added to increase structural integrity

## **STRUCTURES AND COMPONENTS NOT ALLOWED**

**AUTOMOBILES, BUSES, AUTOMOTIVE AND/OR TRUCK BODIES OR PARTS - will not be permitted.**

**PLASTIC or METAL DRUMS or CYLINDRICAL TANKS - will not be permitted**

**SMALL GARBAGE DUMPSTERS – will not be permitted**

**SMALL BOATS - will not be permitted.**

**WHITEWARE (APPLIANCES) - will not be permitted.**

**SHOPPING CARTS - will not be permitted.**

**PVC PIPE - will not be permitted.**

**FIBERGLASS – will not be permitted unless specifically integrated with concrete for marine construction purposes.**

**Corrugated Metal Pipe Less than 6ga – will not be permitted**

**TIRES – will not be permitted.**

**ROPES – will not be permitted**

## **DEPLOYMENT FLOAT PLAN**

1) Following structure inspection and permit issuance, the applicant will notify the individual agent of the ADCNR/MRD who issued the permit, or in his absence, the administrative support staff from that ADCNR/MRD office, and provide the following specific information regarding the proposed deployment event:

1. **Alabama Artificial Reef General Permit Area(s) in which the structure(s) will be deployed.**
2. **Port of departure.**
3. **Date and time of departure from dock.**
4. **Estimated time of arrival at destination.**
5. **Estimated date and time of return to dock.**

2) Float plans **must** be filed with the appropriate ADCNR/MRD agent or office between 8:00 a.m. and 5:00 p.m. Monday through Friday **at least one day in advance** of planned departure to allow for notification of multi-agency enforcement and the U. S. Coast Guard. If planning a Monday deployment, contact the ADCNR/MRD agent or office of permit issuance on the Friday prior, for plan filing instructions. ADCNR/MRD staff will record the above information on the "Artificial Reef Deployment Float Plan" (see example in Appendix III) and in the "Float Plan" section of the Permit Application Form. The ADCNR/MRD agent will email the completed Artificial Reef Deployment Float Plan to U.S. Coast Guard Marine Safety Office (251-441-6169) and Alabama Law Enforcement Agency - State Trooper/ Marine Patrol Division (251-981-9248). The completed Artificial Reef Deployment Float Plan will also be distributed throughout the ADCNR/MRD enforcement section.

## **DEPLOYMENT**

1) Deployment vessels may only be underway during deployment voyages on weekdays (Monday through Friday). The applicant will have **ten (10) weekdays** to deploy a structure(s) after receiving a permit, after which the permit must be revalidated. Under certain circumstances, special deployment provisions (such as minimum depth) may be added to the permit by the inspector.

2) Vessels transporting permitted artificial reef structures shall depart the dock and deploy said structures only during the hours of one hour before sunrise to one hour after sunset. Return travel (empty) from the deployment site is allowed during darkness. Should prevailing conditions prevent the deployment of all permitted structures during the prescribed time frame, the permittee is allowed to return to port with remaining reef structures. Following such an event, the permittee must contact the Marine Resources Division for permit revalidation prior to subsequent deployment voyage.

3) The deployment of approved reef structures from the same permit, during multiple deployment voyages can be executed during the same day if authorized by the ADCNR/MRD agent. Multiple voyages planned to deploy materials from the same permit must be sufficiently planned and follow the approved Float Plan.

4) Deployment on days or times other than those listed above will require a bond approved by the Department.

5) Reef structure(s) permitted as a functional unit, but later separated and deployed individually, shall invalidate the permit.

### **NOTIFICATION OF COMPLETION**

Within two (2) weeks of permit expiration, the builder must file a Notification of Completion (incorporated in the Permit Application Form). The Notification of Completion must be delivered (via U.S. Postal Service or in person) to the ADCNR/MRD office that authorized the permit. **New permits will not be issued until ADCNR/MRD has received from the applicant a properly executed Notification of Completion for the previous reef-building permit.**

## **REEFING OF OIL AND NATURAL GAS PLATFORMS AND JACKETS**

The expansion of oil and gas platforms throughout the Gulf of Mexico has significantly contributed to the overall diversity and productivity of marine life. Unfortunately for the marine life in which they support, the structures must be decommissioned after oil/gas production at the site becomes nonprofitable, the expiration of Outer Continental Shelf Lease Block contracts, or damage due to tropical cyclones. In order for the structures to continue supporting and producing the extraordinarily high diversity of marine life, ADCNR/MRD encourages partnerships with regulatory agencies and the owners of the oil/gas rigs to repurpose the structures into artificial reefs.

Once ADCNR/MRD is notified of the abandonment of an oil or natural gas well, ADCNR/MRD will begin coordinating with Bureau of Safety and Environmental Enforcement, United States Coast Guard and U.S. Army Corps of Engineers to ensure compliance during the reefing process.

### **Reefing of Oil and/or Natural Gas Structures Within the Boundaries of the Offshore General Permit Zones**

Oil/natural gas structures that are reefed inside the boundaries of one of the Offshore General Permit Zones will be subject to following the reefing requirements previously stated in this document. Also, a comprehensive survey of the selected reef site that utilizes multi-beam side-scan sonar and ROV obtained video may be required to be provided by the owner(s) of the structure(s) prior to reefing to ensure undesirable impacts to the marine life and habitat do not occur.

### **Reefing of Oil and/or Natural Gas Structures Outside of the Boundaries of the Offshore General Permit Zones**

Oil/natural gas structures that are reefed outside the boundaries of the Offshore General Permit Zones will be subject to the reefing requirements previously stated in this document as well as federal regulatory/legislative policies for the area in which the structure will be reefed (which could require installation and perpetual maintenance of a lighted signal buoy, greater depth of navigable clearance above the reef than the required depth if reefed within the boundaries of the Offshore General Permit Zones, etc.). A comprehensive survey of the selected reef site that utilizes multi-beam side-scan sonar and ROV obtained video may be required prior to reefing to ensure undesirable impacts to the marine life and habitat do not occur.

### **Donation and Title Transfer**

A Memorandum of Agreement (see Appendix IV) must be completed and signed to validate the transfer of liability, title, and monies to ADCNR/MRD from the owner(s) of the platform and/or jacket. The negotiated value of monies donated to ADCNR/MRD will be deposited into the Department of Conservation and Natural Resources' Seafoods Fund.

**Artificial reef construction permit; transportation, inspection, etc., of reef materials; bond; penalties.**

**Code of Alabama 1975 §9-12-150.**

Relating to artificial reef construction in the offshore waters of this state; to provide for certain notification, permitting, and bonding requirements, to provide for certain penalties, and in connection therewith would have as its purpose or effect the requirement of a new or increased expenditure of local funds within the meaning of Amendment 621 of the Constitution of Alabama of 1901.

**BE IT ENACTED BY THE LEGISLATURE OF ALABAMA:**

**Section 1. (a)** Before any person, firm corporation, or association constructs or attempts to construct an artificial fishing reef in the coastal waters of the State of Alabama as defined by Section 9-710, Code of Alabama 1975, or waters approved by the U.S. Corps of Engineers adjacent to or which may affect the coastal area of Alabama as defined by Section 9-7-10, Code of Alabama 1975, and transports or attempts to transport material from which artificial reefs may be constructed through the waters of this state, the person, firm, corporation, or association shall have the material inspected and approved by and shall obtain a permit from the Alabama Department of Conservation and Natural Resources, Marine Resources Division, or any agency designated in the future by the division, the cost of which shall be twenty-five dollars (\$25) per reef (**see footnote**) and shall be credited to the Marine Resources Fund. Materials are limited to those permitted under The Standard Operating Protocol for Artificial Reef Construction through the Marine Resources Division of the department. An operator of a vessel loaded with material which is to be used in construction of artificial fishing reefs, or the operator of a vessel towing or pushing a vessel loaded with the material, shall have in possession a current valid artificial reef construction permit when transporting the material through the waters of Alabama. The operator of a vessel registered in Alabama shall have in possession a current valid artificial reef construction permit when depositing the material in an area approved by the U.S. Army Corps of Engineers adjacent to the coastal area of Alabama or which may affect the coastal area of Alabama. The term "vessel", as used in this Section includes any watercraft or barge used to transport materials for the construction of artificial reefs.

**(b)** Any person, firm, corporation, or association cited for not having in possession a current valid artificial reef construction permit shall be required to immediately return to the dock. Failure to do so shall be considered a separate violation of this section.

**(c)** Vessels in transit through the waters of Alabama are subject to inspection of the reef material by authorities including, but not limited to, the U. S. Coast Guard, Alabama Marine Police, or the Marine Resources Division, when transporting material through the waters of Alabama. Vessels registered in Alabama are subject to inspection by authorities when depositing or attempting to deposit material in an area approved by the U.S. Army Corps of Engineers adjacent to the coastal area of Alabama or which may affect the coastal area of Alabama regardless of whether vessel traveled through Alabama waters.

**Footnote**

Regulatory actions subsequent to §9-12-150 resulted in an increase of the cost of permitting each reef by ADCNR/MRD. Alabama Department of Conservation and Natural Resources Administrative Code, Regulation 220-3-.84, authorizes an increase in the permitting fee from \$25 to \$30, and §4 1-1-11 provides the authority for 220-3-.84.



**(d)** Vessels and vessel operators transporting permitted artificial reef material shall notify the Marine Resources Division of the Department of Conservation and Natural Resources in advance of deployment reporting the time of departure from the dock, destination, and estimated time of arrival at destination. Vessels shall also file a float plan at least one day in advance of deployment in accordance with the Standard Operating Protocol for Artificial Reef Construction through the Marine Resources Division of the department.

**(e)** Any person, firm, or corporation depositing unpermitted reef material or permitted material in areas other than those designated by the Corps of Engineers shall be in violation of this section. The deposit of the material must be witnessed to support a conviction for a violation.

**(f)** The Marine Resources Division of the Department of Conservation and Natural Resources may require a bond in an amount sufficient to protect the interest of the State of Alabama payable to the Department of Conservation and Natural Resources in the event of a violation of the permit. The bond shall be issued by a licensed bonding company approved in advance by the department.

**(g)** Any person, firm, corporation or association violating this section shall, upon conviction, be guilty of a Class A misdemeanor and punishable by a fine of not less than five thousand dollars (\$5,000) and not more than ten thousand dollars (\$10,000).

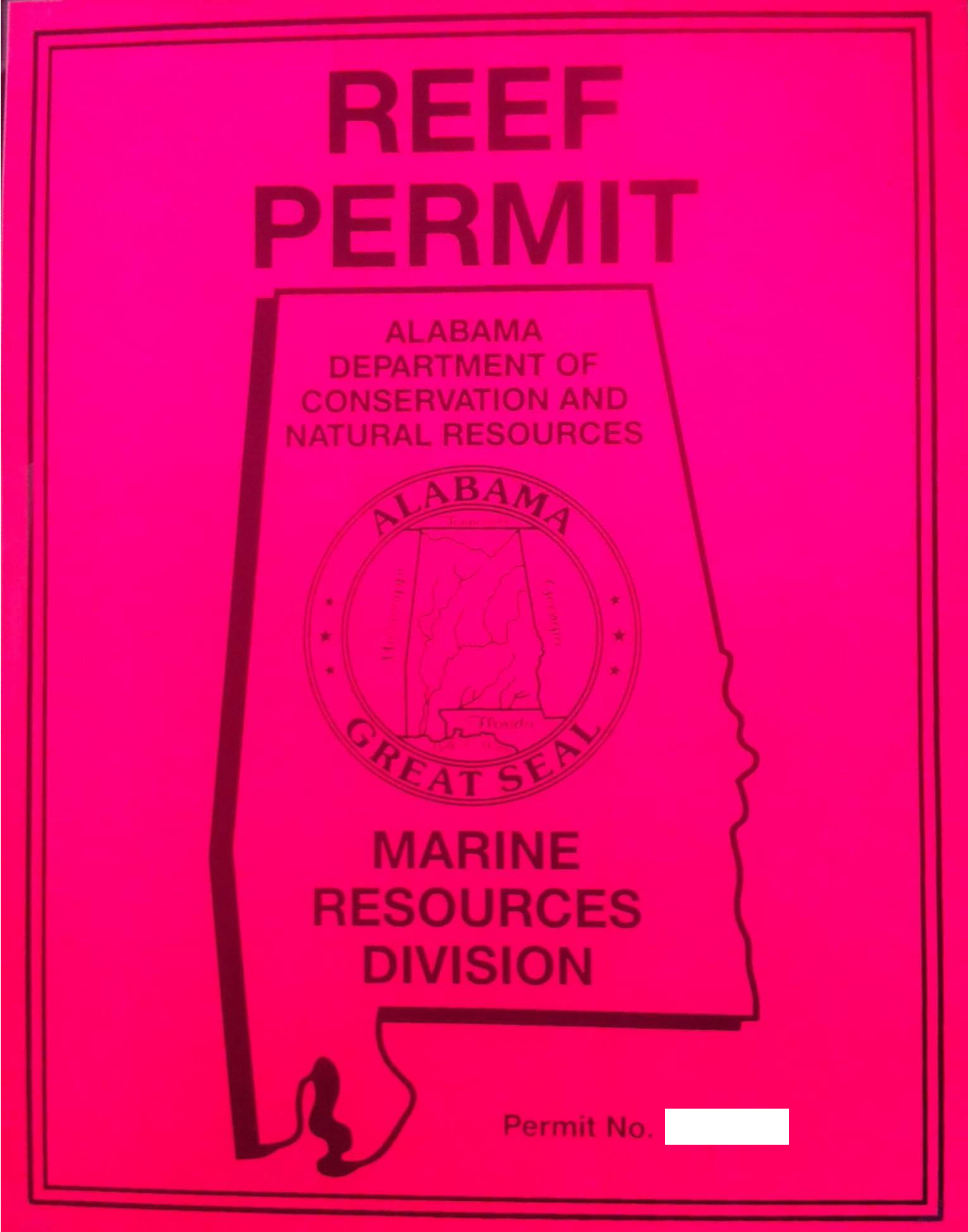
**Section 2.** The provisions of this act are severable. If any part of this act is declared invalid or unconstitutional, that declaration shall not affect the part which remains.

**Section 3.** Although this bill would have as its purpose or effect the requirement of a new or increased expenditure of local funds, the bill is excluded from further requirements and application under Amendment 621 because the bill defines a new crime or amends the definition of an existing crime.

**Section 4.** This act shall become effective on the first day of the third month following its passage and approval by the Governor, or its otherwise becoming law.

**Appendix I**

Image of a Permit Placard that is applied to the reef structure after an ADCNR/MRD agent has approved the structure for deployment.



## **Appendix II**

# APPLICATION FOR ARTIFICIAL REEF CONSTRUCTION OUTER CONTINENTAL SHELF OFF MOBILE AND BALDWIN COUNTIES, AL

Permit # \_\_\_\_\_

## INSTRUCTIONS

The material for reef construction must be assembled at a shore point for inspection. Contact the Alabama Department of Conservation and Natural Resources, Marine Resources Division, P.O. Box 189, Dauphin Island, Alabama 36528 (251.861.2882); or the Alabama Department of Conservation and Natural Resources, Marine Resources Division, P.O. Drawer 458, Gulf Shores, Alabama 36547 (251.968.7576). No material may be placed without inspection. At the time of inspection, the applicant will be given two signed copies; one for the applicant's records and one to be returned to the Inspector when the work is completed. Artificial reefs may be constructed only within the areas permitted to the Alabama Department of Conservation and Natural Resources. Any construction outside of permitted areas will be considered a violation of the MARPOL Act, and shall be subject to criminal prosecution.

### Reefs Per Zone

### Reef Zones Available for Reef Deployment Activities

- \_\_\_\_\_ Dr. Bob Shipp Reef: Off Perdido Pass bound by Lat/Long Coordinates: 30 02.20' - 87 52.70', 30 03.50' - 87 32.30', 29 34.00', 87 32.30', 29 52.00' - 87 47.00', 29 55.00' - 87 47.25'
- \_\_\_\_\_ Don Kelley Reef: Off Perdido Pass bound by Lat/Long Coordinates: 29 47.20' - 87 46.50', 29 29.20' - 87 32.30', 29 16.60' - 87 32.30', 29 26.40' - 87 44.90'
- \_\_\_\_\_ Hugh Swingle Reef: Southeast of Dauphin Island bound by Lat/Long Coordinates: 30 03.00' - 88 07.00', 30 03.00' - 87 59.50', 29 55.00' - 87 55.50'. 29 55.00' - 88 07.00'
- \_\_\_\_\_ Tatum - Winn Reef - North: Southeast of Dauphin Island bound by Lat/Long Coordinates: 29 55.00' - 88 02.50', 29 55.00' - 87 55.50', 29 43.10' - 87 46.00', 29 29.00' - 87 45.00' - 88 02.00'
- \_\_\_\_\_ Tatum - Winn Reef - South: Southeast of Dauphin Island bound by Lat/Long Coordinates: 29 35.50' - 88 01.50', 29 25.50' - 87 50.20', 29 24.10' - 88 01.00'

Privacy Act Statement: The AL Marine Resources Div. Permit program for artificial fishing reefs, is authorized by Section 10 of the River and Harbor Act of 1899 and Section 40 of the Clean Water Act. The information requested in this form is optional and is needed to contact applicants. However, if the information is not provided, your request cannot be evaluated, nor can an authorization be issued. Information provided in this application will be available to the public.

APPLICANT NAME: \_\_\_\_\_ ADDRESS: \_\_\_\_\_

CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ ZIP CODE: \_\_\_\_\_ PHONE NUMBER: \_\_\_\_\_ / \_\_\_\_\_

To place the following materials:

Vessel identification (Name/Reg #): \_\_\_\_\_ / \_\_\_\_\_ Number of individual reefs: \_\_\_\_\_

Proposed Lat/Long Coordinates: \_\_\_\_\_ - \_\_\_\_\_ PERMIT VALID FROM: \_\_\_\_\_ to: \_\_\_\_\_

In applying for this authorization, I understand and acknowledge that the reef area is public and my activity does not give me any rights or private use over those of the general public, and the existence of this reef does not exclude any other authorized use of the area. I understand I shall be subject to criminal prosecution if I place materials in any area outside the permitted area. This authorization is valid for ten (10) working days from permit date.

APPLICANT'S SIGNATURE: \_\_\_\_\_ DATE: \_\_\_\_\_

### AUTHORIZATION FOR REEF CONSTRUCTION

The reef material was inspected on \_\_\_\_\_. The applicant is authorized to place the listed materials at the stated location.

Placard number(s) \_\_\_\_\_ - \_\_\_\_\_ BY: \_\_\_\_\_, Alabama Marine Resources Div

#### NOTIFICATION OF COMPLETION

PLACARD #	DEPTH OVER REEF	LATITUDE	LONGITUDE	AFTER DEPLOYMENT OF REEF MATERIAL, PROVIDE THE NECESSARY COMPLETION INFORMATION. SIGN, DATE, AND RETURN TO PERMITTING OFFICE (ADDRESS ABOVE).
_____	_____	_____	_____	<b>*** NOTIFICATION OF COMPLETION MUST BE ON FILE WITH AMRD BEFORE FURTHER PERMITS CAN BE ISSUED. ***</b>
_____	_____	_____	_____	
_____	_____	_____	_____	
_____	_____	_____	_____	
				SIGNED: _____
				DATE: _____

**AMRD - DAUPHIN ISLAND 251.861.2882**

### FLOAT PLAN

**AMRD - GULF SHORES 251.968.7576**

DEPLOYMENT AREA: \_\_\_\_\_ POINT OF DEPARTURE/ \_\_\_\_\_ /

DATE/TIME OF DEPARTURE: \_\_\_\_\_ at \_\_\_\_\_  
Date Time RETURN: \_\_\_\_\_

ETA AT DEPLOYMENT SITE: \_\_\_\_\_

**FLOAT PLAN MUST BE CALLED IN TO A MARINE RESOURCES DIV. OFFICE AT LEAST ONE DAY BEFORE DEPLOYMENT DATE. PERMIT IS NOT VALID WITHOUT A RECORDED FLOAT PLAN.**

DATE/TIME OF RETURN: \_\_\_\_\_ at \_\_\_\_\_  
Date Time

## **Appendix III**



**Appendix IV**

**ACT OF DONATION AND TITLE TRANSFER**