

to the total number of licensed recreational fishermen with one year licenses in Escambia County. The 1998-1999 fiscal year number of Escambia County one year saltwater recreational fishing license holders was 12,418. Even accounting for multiple private citizens utilizing commercial carriers, fewer than 30 different private citizens (non charter) (.24% of Escambia saltwater license fishing holders) personally utilized these areas to build or have built their private reefs.

The FWC proposal would track the level of permits issued over several years after reducing the metal thickness of the structures proposed for reef use and determine if these changes would result in increased legal charter boat and private reef building activity using materials the fishermen can carry out on their personal vessels. The alternative of using commercial carriers who would normally handle heavier, more substantial materials has been available to both groups under the current program and has accounted for the greatest program usage to date. This alternative will remain an option in the program.

The hypothesis to be tested would be that the proposed materials standard changes would result in a significant increase in the current level of direct LAARS program participation by the Pensacola Charter Fleet and private citizens over the next several years.

An alternative hypothesis is that reducing metal thickness and weight standards will not manifest itself in a significant change in the legal use pattern of the area in relation to the total size of the charter fleet and total number of private saltwater fishermen. Possible explanations to be pursued then would be: a) there is reluctance to go through the permitting program because of the history of regulations and requirements; b) there is little risk of successful enforcement action; c) there is low interest in building personal reefs. Interviews or surveys targeting potential participants who did not use the LAARS would attempt to determine the reason or reasons for continued low use level.

A secondary original objective of securing the LAARS in 1994 was to reduce the level of illegal offsite deployment of private reef material by providing a legal reef building alternative. The success of this secondary objective could not be measured due to the level of law enforcement resources required and shortcomings in state artificial reef legislation.

Section 370.25 (6)(b) Florida Statutes was amended in 2000 to require all reef builders storing or transporting artificial reef materials on their vessels to carry an FWC issued cargo manifest as proof that the materials are in compliance with permit conditions. Destination coordinates are also listed. Attached to the manifest is a copy of the relevant permit describing the specific permit area and conditions. With the cargo manifest requirements there is now an enforcement tool that should better assist in the evaluation of the degree to which the LAARS is serving as an effective legal alternative to illegal offsite deployment or illegal use of unauthorized materials. Some enforcement action is now possible without having to see the individual in the act of deploying material because violators can still be cited for storing or carrying unauthorized or uninspected materials.

In summary, the LAARS area provides a legal reef building alternative for private citizens and charter boat fishermen who are interested in working within the system. We want to provide and publicize a user friendly sub-permit system before using our new law enforcement tools. It remains the responsibility of the FWC Division of Law Enforcement and the USCG to deal with the “midnight dumpers” who have no such interest.

E. Concerns about Lack of Design, Stability and Longevity information on light weight secondary use materials. Response: These are valid concerns, however the same concerns could be expressed about the current materials list, based on the unlimited range of possible configurations: inspection is a key program component. If the only inspection standards to be used were 1/8 inch minimum thickness metal and units weighing at least 150 pounds composed of the materials acceptable under the permit, a wide range of appropriate and inappropriate metal objects could in theory be deployed as artificial reefs. The re-authorization request has asked for a materials modification to allow for a greater range of potential materials designs, the specific nature and extent of which cannot yet be predicted. The objective of this materials modification request was to facilitate increased private reef building opportunities as a result of allowing for increased ease of material handling, decreased materials expenses, and providing greater access to reef building materials .

These materials modifications were not requested at the sacrifice of durability and stability considerations. We recognize that based upon past performance, certain types of structures, both large and small, have fared poorly from both a durability and stability perspective at shallower depths (less than 100 feet) in hurricane and major tropical storm events. Knowledge gained from these observations will be incorporated into the materials evaluation process.

To address the above design and stability concerns, we propose to utilize a highly qualified reef materials inspector at the local level. This inspector will personally examine, photograph for archival purposes, and evaluate every proposed reef material item proposed for use in the Escambia LAARS. He will not only serve as a gatekeeper barring usage of polluting and otherwise inappropriate material, but will provide education and technical assistance to the individual applicants.

The designated on site inspector will be the Chief of the Division of Marine Resources within the Escambia County Parks and Recreation Department. The individual, Mr. Robert Turpin, has a masters degree in Marine Biology from the University of West Florida, has personal experience in the development of artificial reefs as a past user (commercial and recreational) as well as having spent six years studying and monitoring biological processes on artificial reefs and the physical performance of reefs during hurricane events as part of his undergraduate and graduate studies. He will work in close coordination with FWC staff since FWC will remain the permit holder with the accompanying liability for any material proceeding offshore under the FWC authorization to use the Escambia LAARS.

The inspector will have the authority to use his judgement and experience in evaluating each unit

presented for inspection. Units presented for inspection not meeting ACOE/EPA permit materials composition/pollution standards will be rejected outright since permit conditions will be strictly adhered to. Materials meeting the minimum criteria under the ACOE permit will be further dealt with in one or more of the following ways: a) the inspector may still require additional structural modifications to stabilize the item or improve its habitat value; b) the item will be required to be deployed no closer than 1/4 mile from the boundaries of the permitted sites; c) the applicant may be asked to place the object at greater depth to decrease the likelihood of movement outside the permitted area, or d) the inspector may still reject the unit even though it may meet the minimum requirements. This would be done if the inspector, in consultation with FWC staff, determines that deployment of the units based upon stability concerns or other factors is not in the best interests of the FWC permit holder from a liability standpoint. The proposed reef unit may be rejected if the inspector believes the material as presented, with no options for modification will have no value in achieving the objective of serving as a successful artificial fishing reef, and fishery habitat.

The intent is to maximize the stability of those units of borderline acceptability by modifying their configuration or requiring placement at a depth great enough to eliminate or minimize movement. With the LAARS having depth ranges from 73-248 feet this is an option. The advantage of the LAARS is that if there is some limited movement of any structures, due to the size of the permitted area, absence of any known grass beds, and very localized minimal hard bottom areas, the item can be expected to remain within the permitted area without causing environmental damage.

The nature of the allowable materials composition is such that when the structures do deteriorate, there will be no associated unballasted component parts released such as plastic, wood, fiberglass, unballasted rubber tires, etc. which would be more prone to offsite migration. The metals over time will break down and return to their elemental state in seawater (Fe, Al, etc.) or calcium carbonate in the case of concrete.

Representative materials of previously unstudied stability and durability but otherwise approved under the ACOE permit for use by private individuals will be placed at a study site within the LAARS and assessed on a semi-annual basis. FWC and County staff time will be allocated for this purpose. Additionally the Escambia County Division of Marine Resources (ECDMR) will also coordinate with charter and private reef builders to conduct onsite performance assessments of selected units for which no prior performance and stability information is available.

Variation in life expectancy (durability) from a few years to one or more decades of items proposed by charter or recreational fishermen that might qualify under the proposed LAARS re-authorized materials guidelines is anticipated. Realistically, some of the smaller, lighter, reef units will not have the habitat life span the public and sanctuary reefs can be expected to have. However an objective is to achieve some degree of habitat value and shelter. Longevity standards of 20-30 years for county, state, and federally funded projects will continued to be pursued. A ten year reef life span goal will be sought for the private reefs.

Metal corrosion rates are variable and depend on the alloy composition of metal materials used, any electrolysis occurring as a result of the proximity of two different metal types, depth, oxygen levels, temperature, current speeds, bio-fouling, etc. Even with metal thickness reduced to 1/8" (3.2 mm) and using a high end corrosion rate of structural steel in 30-50 m of water of up to .25 mm/year, in theory steel framework or plating could retain structural integrity for close to a decade.

Historical arguments of west Florida reef builders is that natural loss of low relief (less than one meter) hard bottom habitat occurs with major storm events because the areas are either buried or the attached organisms themselves, if not buried, are displaced or destroyed through scouring and storm surge activity. Associated fish species are redistributed, sometimes miles away from their particular reef habitat, as tagging studies by the University of South Alabama have shown (Dr. Bob Shipp, personal communication). Re-colonization of newly exposed hard bottom or remaining hard bottom that has been rendered species poor by storm action is a process that occurs at irregular intervals. The fishermen believe the lighter less substantial reef units in a similar manner mimic this low relief ephemeral hard bottom community cyclic changes. Once lost, the material is cheaply replaced by other manmade secondary use ephemeral structure, and fish and invertebrate re-colonization begins again.

F. Anchoring questions (NMFS). Response: Units permitted to be deployed must be inherently stable at the depth deployed without the addition of an external anchoring system. In most cases our experience has been that unless stability characteristics are an integral part of the basic design of the reef unit at the depth deployed, effective external anchoring systems and subsequent maintenance thereof, especially at depths beyond 130 feet are beyond the financial, and engineering scope of private reef builders and most local governments.

G. Concerns about fish entrapment (GSMFC). Response: Monitoring of the Escambia LAARS to date, have not revealed any reports that structures have trapped fish or federally listed species such as marine sea turtles, or marine mammals. All units will be inspected to insure that units such as frame or cage structures, if authorized, will be so designed or modified to insure that any fish or other organisms entering the structure to seek shelter will be able to escape.

H. Comment about LAARS impact on marine reserves (SC).

Response: The closest marine reserve, the Madison Site, is 65 nautical miles southeast of the Escambia LAARS. According the Mr. Steven Atran, GMFMC, (pers. comm.) no adverse impacts by activities on the LAARS are expected on this reserve, set aside as a gag grouper spawning area.

II. Specific Answers to Information Requests Made by the ACOE

A. Provide written correspondence from the U.S. Coast Guard Eighth District regarding

the need or lack thereof to mark the Escambia East and Escambia West reef sites.

Response: A letter (November 27, 2000) was federal expressed to the U.S. Coast Guard Eighth District (Rick Harrison, Chief, Private Aids to Navigation Section)(Attachment 2) requesting guidance on this matter. A response dated November 30, 2000 was FAXed to the Commission on December 4, 2000 and is included as Attachment 3. By Direction of the District Commander, Mr. Harrison stated that the USCG had no objection to the LAARS re-authorization. Furthermore no aids to navigation are required at this time as long as a clear depth of 50 feet is maintained in these areas.

B. Describe what procedures or mechanism will be utilized by the FWC to ensure deployments will not detrimentally impact natural habitat such as live bottom, existing reefs, etc.

Response: The initial steps to minimize impacts to hard bottom natural habitat and sea grass beds occurred in 1993 with the initial exclusionary mapping efforts conducted by current FWC staff to develop the site boundaries which have existed in their current form since 1994. The minimum depth of the Escambia LAARS (73 feet) exceeds the normal depth range of Gulf Coast marine seagrass species with the possible exception of paddle grass (*Halophila decipiens*). This is an annual plant (leaf blades 2.5-3 inches long) occurring April-October, then dying off in winter and sprouting again in spring from seed. This grass has been reported infrequently to depths as deep as 90 feet at scattered locations off the Big Bend (Kent Smith FWC, Bureau of Protected Species Management, personal communication). This grass has not been noted in the northern shallowest areas of the Escambia LAARS where the species could be observed in warmer months if it were present. Escambia County and FWC staff will continue to be alert for the possible occurrence of this vegetation.

Hard bottom in the general area of the LAARS is sparsely distributed. The Escambia LAARS and the two inshore Okaloosa County LAARS occur in a planning region called Pensacola NH 16-5 . This area ranges from 88 degrees West Longitude to 86 degrees West Longitude and south to 30 degrees North Latitude, an area which encompasses both the Escambia LAARS complex and the two inshore Okaloosa LAARS. In this area, 143, 918 acres of bottom (14.1% of the area) have been surveyed. Only one-half percent (.5%) of this total area surveyed was hard bottom and that area was classified as low relief (less than one meter tall) (Continental Shelf Associates, Inc. 1992).

One notable hard bottom feature intersecting the southern part of the Escambia East Site is the "30 fathom shelf break". This is a granular limestone escarpment up to 6 meters high that trends to the southwest and northeast, approximately 27 nautical miles due south of Pensacola Pass. Areas of erosion along the break have created some ledge habitat. This formation is a well known feature to fishermen; it was historically a productive commercial fishing ground and still attracts larger charter and recreational fishing boats. The break itself, based upon diver observations (Robert Turpin, Escambia County Parks and Recreation, personal communication) historically

was free of artificial reef materials. It is highly unlikely that private artificial reef deployments would occur in the vicinity of the ledges because the typical fishing methods involve running the boat along or across the shelf break ledge system until a good “show” of fish is displayed on the fathometer. Thus any private reef would be discovered. It would be easy to determine from a proposed artificial reef permit application if a reef deployment was planned in the vicinity of this 175-195 foot geologic feature and the private reef builder could be counseled to shift to a more appropriate area.

Other natural “hard bottom” features that exist in the vicinity of the Escambia LAARS fall into two general categories: 1) low-relief (<1 meter) ledges; and 2) individual rocks 1-2 meters (length x height)(Turpin, 1991, unpublished). Two separate areas of these formations occur in the extreme west and northeast regions of the Escambia East LAAR site. Due to the isolated distribution of these features, they may be avoided by performing a sea floor survey using a vessel-mounted fathometer prior to artificial reef deployment.

Every entity approved to deploy artificial reef materials within the FWC Escambia LAARS will be required to conduct a fathometer survey of the proposed deployment location immediately prior to the deployment to determine the presence or absence of existing hard bottom, including both natural formations and existing artificial reefs. If any existing hard bottom is observed, the deployment location will be slightly modified to avoid any direct physical impacts. This requirement will become part of the application form, and all applicants to use the FWC permitted areas will be required to certify that this requirement has been met when reported to the FWC. For Publicly funded reef projects, an additional visual survey (remote camera or diver survey) will be required prior to the reef deployment.

Other natural habitat to be considered is the vast expanse of sand bottom which occupies about 95% of the total area surveyed to date in the Northeastern Gulf of Mexico. This sand bottom habitat is a well sorted layer of fine- to medium grained quartzite sand, originally transported to the shelf from eastern continental rivers during the Pleistocene and early Holocene (Thompson et al. 1999). The sand bottom habitat is so extensive in the region of the LAARS that adverse direct cumulative physical impacts to this habitat by replacement with a few dozen acres of hard bottom substrate added over the next five years is inconsequential.

C. Clarify the minimum vertical clearance above deployed reef materials. The original permit stated a minimum clearance of 50 feet was required, however a minimum of 55 feet is specified in the FWC June 19, 2000 correspondence in combination with a working clearance of 60 feet. What is the minimum vertical water column clearance being requested?

Response: The minimum vertical clearance formally requested is the same as it appears on the current nautical charts for these Escambia LAARS areas: 8.25 fathoms or 49.5 feet, rounded to 50 feet (MLW). However, it is the FWC’s intent, as in the past with these sites, to be conservative with regard to navigational concerns and incorporate into all Escambia LAARS

projects a minimum clearance of 60 feet. Thus any variations in tidal cycle, errors in depth gauges, fathometers, etc. will be amply compensated for.

D. Clarify the goals and objectives of the three proposed categories of reefs (public reefs, private reefs, sanctuary reefs) referenced in the FWC June 19, 2000 correspondence.

Response: An objective of each category is to increase the amount of low profile shelter available within the LAARS as a method of increasing recruitment. For example, one of the new Gulf of Mexico Fishery Management Council's gag grouper spawning area closures is roughly 65 miles from the LAARS. It is positioned between the spawning area and the seagrass areas in Escambia Bay.

1. *Public Reefs:* Public artificial reefs in the Escambia LAARS are those defined as those reefs constructed with state, county, and/or federal revenues intended for access and use by the general public as well as providing long term hard bottom of fisheries habitat value.

Public Reef Goal: Provide a system of boater accessible, readily locatable artificial reefs composed of complex, stable and durable environmentally safe materials intended to accomplish multiple objectives.

Public Reef Objective #1: These reefs are to be placed in the Escambia LAARS to allow access to fishing sites within two hours running time from shore by vessels 18 feet long or larger, and will be primarily concentrated at depths of 75-150 feet. The current and proposed public reefs and their coordinates will be intentionally publicized by the state and county to raise public awareness of these resources and enhance the public's ability to locate them. In a questionnaire to reef users in the Florida Panhandle, (Bell et al. 1998), 75.9% of the respondents felt that the ease of location of the public artificial reefs was a definite factor in their use of the reefs. During 1997-98, 82% of resident boaters interviewed indicated they had fished on one or more Escambia artificial reefs in the previous 12 months. Artificial reef users were repeat users who returned to artificial reefs where they had previously fished. 81.6% of the fishers who used artificial reefs stated they used the sites because of a previous fishing experience at these sites. These reefs are intended for public use, both local and visitor, under a legislatively mandated objective of providing "saltwater opportunities" (Section 370.25, Florida Statutes). Such opportunities include recreational fishing and diving, including spear fishing and nature appreciation. The service provided to user groups is the driving force behind public reefs developed in the LAARS.

Questionnaires returned during a five county Florida Panhandle artificial reef socio-economic study (Bell et al. 1998) indicated that recreational fishermen preferred fishing on public artificial reefs at depths of 150 feet or less. Most recreational divers prefer access to reefs within no decompression diving limits (130 feet or less). For this reason, the Escambia LAARS public reefs will be primarily located within the 75-150 foot depth range. These shallower areas of the LAARS are also closer inshore than deeper areas of the sites, making them more easily accessible from a time, fuel economy, and safety standpoint.

Public Reef Objective #2: Modify and diversity sand bottom habitat by providing complex artificial reef community hard bottom habitat. The habitat shall be designed and placed to be attractive to both legal sized and juvenile specimens of recreationally and commercially important reef obligate and reef associated fish species and their fish and invertebrate prey species. The current and proposed public reef habitat will be designed and composed of materials suitable to serve as a functioning artificial reef for a minimum of 20-30 years and resist movement or break up in a 20 year return interval storm event at the depth placed, based upon prior field experience with the materials used, engineering stability studies, or a combination of both. Because public funds are employed, materials durability and overall reef longevity may exceed minimum ACOE reef permit requirements.

Public Reef Objective #3: Enhance an existing system of artificial reefs off Escambia County in order to maintain or increase fishing, diving and tourism related benefits to the local economy. Of the estimated 72% of all boating days spent on fishing and 2.5% of such days on diving off Escambia County, about 60% of these days were spent on artificial reefs, primarily off of Escambia County (Bell et al. 1998). An estimated 1,040,998 user days were spent on or about artificial reefs off Escambia County. Fishing and diving visitors alone during a 12 month period in 1997-98 spent over \$71.58 million in Escambia county engaged in saltwater fishing and diving on or about artificial reefs. This supported 1,614 full and part-time employees who receive an estimated \$15.7 million in wages. Residents spent \$21.23 million for the same activities supporting 327 employees receiving an estimated \$3.23 million in wages (Bell et al. *ibid*). At the end of the next five years a survey methodology will be developed and implemented to assess the value of the LAARS public reefs in comparison to Escambia's overall artificial reef program.

Public Reef Objective #4: Minimize user conflicts between charter boat and individual recreational fishermen and divers by providing public sites which cater to the general resident and visiting boating public by virtue of the reefs' well publicized nature, size, and accessibility. Reduce overcrowding at public reefs by increasing the number of public reefs available to an expanding recreational boater public with fishing interests. The intent of the public reefs is to segregate private anglers by providing public alternatives to their use of the smaller unpublicized sites that the charter fishing fleet depend upon. Public user feedback of the recreational boaters' perception of the level of crowding of Escambia County artificial reefs will be solicited at the end of five years and compared with the perception recorded by Bell et al. (1998) that 67% of the boaters felt that public reefs were too crowded (see private reefs, objective #2).

Public Reef Objective #5: Continue FWC sponsorship of the public reef building program in the LAARS to help the County by shouldering cost, liability and responsibility for the program in these areas. For the last several years, Escambia County, lacking valid artificial reef permits has been unable to further develop its public artificial reef program without relying exclusively on the Escambia LAARS. These large areas have become a key element in the County's artificial reef program and have represented the only mechanism whereby the County has been able to continue expansion of its reef program during the past three years.

2. Private Deployment Reefs. Private reefs as defined under this LAARS program are those structures constructed, purchased, donated or otherwise secured through legal title transfer by charter boat operators or private recreational fishermen using private funding or other personal resources. The units go through a county inspection process and if approved are deployed at unpublicized locations within the Escambia LAARS. Since there is no leasing of the sea floor or the water column by the individual sponsoring this project, there is no exclusive ownership or right of use of the structures. Once on the bottom they become the property and responsibility of FWC, the permit holder, who also assumes the accompanying liability. We will work with the permit holder to randomly select and cooperatively visit sites to document the effectiveness of these deployments.

Private Deployment Reef Goal: Continue support of a charter boat and private initiative to develop a network of unpublicized patch reefs to enhance fishing opportunities for clients and participating private individuals. The original and proposed ongoing goal of private reefs for this program, discussed under **I-D** of this response is to assist the charter fleet and County in the continued support of a legal mechanism that allows the maintenance of a system of unpublicized private reefs that the charter fishermen can husband. Preliminary studies by Auburn University scientists (Dr. Steve Szedelmyer unpublished, 2000) suggests that such reefs appear to be less likely to receive the level of fishing and diving pressure that public reefs experience because fewer people fish them, resulting in reduced intensity and frequency of fishing pressure. The result is a numerically larger standing stock of slightly larger fish compared to those found on public reefs of similar size.

Private citizens will continue to be included in the Escambia LAARS program because they represent a historically more numerous user group of private reef builders in the LAARS program than the charter fleet to date. However the number of actual private reef building participants is also low in relation to the total saltwater licensed fishing community in Escambia. (see **II D**).

The original goal was for 25% participation by charter boat fleet operators in the program, based on estimates of reef building activity by the Destin Charter Fleet. In 1993 the Okaloosa County reef coordinator estimated that about a fourth of the charter fleet historically built reefs while the other 75% try to locate those sites (Jack Spey, personal communication). A continued goal is for 25% regular participation by the charter fleet (about 10-11 different charter boat operators active in the LAARS reef building program) over the next five years.

Private Deployment Reef Objective #1: Coastal Community Economic Benefit Enhancement: Providing continued support to the local fishing charter industry in the development of a network of unpublicized patch reefs to serve as husbanded fishing sites for clients and private use. This in turn provides a measurable positive economic benefit to Escambia County by providing services to visiting recreational fishers. Bell et al. 1998 noted that by far, Escambia County visitors played a greater role in the economic impact of artificial reef-related spending, accounting for almost 77% of the total economic impact. The reason for this as the report stated, was that

visitors spend several times per day what residents spend per diving or fishing day in a coastal community. The charter fleet plays a key role in the transport of these visiting fishers and to a lesser extent divers to offshore artificial reef sites, both public and private.

To measure the success of charter boat reef building in the LAARS in terms of its economic contribution to Escambia County, one would need to look at the number of unpublicized reefs actually built by the three participating members of the charter fleet under the program in the LAARS and compare that with the total number of other reef sites (public, private, natural) potentially available to the fleet during that time period. Since individual charter fishermen have highly guarded books of numbers, each totaling in the hundreds of fishing locations, the current relative economic value of the Escambia LAARS private reef building program probably can't be broken out from the larger system of artificial reefs. This existing reef system includes all existing public (known) and private legal and illegal reefs (numbers unknown).

Continued tracking of the level of legal charter and private unpublicized reef development in the LAARS program (number of different participants, number of different reef locations, with quantification of materials by type) will continue over the next five years. A means of measuring the specific economic contribution of the LAARS private reef building program to the total contribution of the artificial reef system off Escambia will be investigated and an evaluation will be made at the end of the next re-authorization period.

Private Deployment Reef Building Objective #2: Reduce user conflicts and complaints of overcrowding at public reefs. An ongoing objective of private reef building in the LAARS is the continued effort to partially separate charter fishing activities from private recreational fishing and diving activity in order to reduce crowding and conflicts on public fishing reefs. In questionnaires sent to fishers and divers who use artificial reefs (Bell et al. 1998), 67% felt that the public artificial reefs are currently too crowded. Weekend observations of multiple vessels crowded on and around public artificial reefs also suggests the potential for both user conflicts and localized over fishing. Because of public artificial reef funding limitations which must be dispersed to meet the needs of a statewide program, the level of public reef building off Escambia County is not expected to fully keep pace with projected entry of additional offshore boaters into the fishery over the next five years. Issuing sub-permits to private individuals for their own reef building activities might also play a role in reduction in user conflict. A means of measuring this objective will be to repeat a user questionnaire at the end of five years to determine if there has been a perceived decline among users in the perception that public reefs are too crowded or that user conflicts remain problematic, particularly on public reefs.

Private Deployment Reef Building Objective #3: Increase the availability of target reef obligate or reef associated fish species for increased efficiency of recreational harvest. Reefs will be created under the private reef program to increase the local availability for more efficient harvest of the following reef obligate or reef associated families: Lutjanidae (snappers, primarily red snapper), Serranidae (groupers, primarily gag and red), Scombridae (mackerels, primarily king mackerel), Carangidae (jacks, primarily greater amberjack), Balistidae (triggerfish, primarily grey

triggerfish).

Private Deployment Reef Building Objective #4: Provide for the use of a wider range of reef structures available to private reef builders that are built of allowable materials but provide for unit cost reduction and increasing ease of handling. The alteration of materials standards for private reefs (minimum 1/8 inch metal thickness, allowance for the use of aluminum, and minimum unit weights in air of 150 pounds are proposed strictly to meet this objective. The goal for private reef units will be a projected 10 years of longevity and a deployment and design plan that will insure that the material neither moves off the permitted site nor is purposefully placed off site.

Gag grouper, red snapper, vermilion snapper, and amberjack are opportunistic in reef utilization. These fishes will congregate around newly-deposited artificial reef materials (DEP report on the 1992 automobile study, after Hurricane Andrew) and gut analyses indicate that these fish do not appreciably feed on reef-attached biota, it is unlikely that it matters to what they are attracted. That these fishes prefer substrate is insufficient proof that they need any particular substrate for any particular quantity of time.

3. Sanctuary Reefs. Under the Escambia LAARS program, these reefs are defined as unpublicized artificial reefs intentionally placed to emphasize habitat enhancement and fisheries resource conservation over the aggregation of target species. There are no regulations in place to protect them from harvest activity should a recreational or commercial fishing operation fortuitously run across one of these reefs. However they will be constructed in a fashion to snag and obstruct fishing gear deployed on them. Like private reef deployments, the intent is to scatter patch reefs in the large areas and “hide” them from intense directed fishing pressure. This strategy enjoyed long term success in the Levy County with the Suwannee Regional Reef Monitoring program.

Sanctuary Reef Goal: to provide hard bottom Essential Fish Habitat where fully or over exploited recreationally or commercially targeted reef obligate fish species can achieve productivity gains through biomass increases in the process of growth to maturity through the creation of increased shelter and reduced or absent directed fishing pressure.

Sanctuary Reef Objective #1: Diversify the Escambia LAARS program by enhancing fully or over exploited recreational and commercially important reef fish resources by promoting conditions of reduced fishing mortality from directed fishing pressure through the placement of unpublicized complex and stable reef habitat with a minimum 30 years operating life expectancy at widely scattered patch reef locations. These reefs will be relatively low profile (1-3 meters) mimicking vertical relief of the majority of natural structures in the northeastern Gulf of Mexico, also making them a little more difficult to locate. Additional means will be investigated to passively render these reefs more difficult to fish if discovered.

"Full"
1 mi² area(s)

Sanctuary Reef Objective #2: Increase the standing biomass of target reef fish species on sanctuary reefs in comparison to similar public and private reefs. A targeted measure of this objective is that representative monitored sanctuary reefs will show after a four year period of monitoring a pattern a 20% greater number of target recreational fishes (based on visual or hydroacoustic observations) per patch reef of standard unit size, and an average of 15% greater amount of biomass per fish in terms of weight based upon length-weight relationships.

Sanctuary Reef Objective #3: Over the next five years, commit a minimum of \$200,000 to the development and monitoring of unpublicized sanctuary patch reefs in the Escambia LAARS. Selected sanctuary reefs will be evaluated for a four year period against public and private reefs of similar design to determine the value of utilizing such a program in an area where there is not full protection from harvest. The size of the sanctuary reef program will be dependent upon the availability of funds received through a line item legislative budget request from the state legislature. A request for \$550,000 to fund an enhancement reef program for the seven large areas in the Florida Panhandle has been presented for consideration in the 2000-2001 legislative session. If special funding does not become available, an average of 25% of all state funded public reef resources developed in the Escambia LAARS over the next five years will be directed to the development of unpublicized sanctuary reefs, a representative portion of which will be monitored.

Other results expected to occur which are common to all three reef types: increase overall benthic species diversity in the MMS Pensacola NH-16 planning area where presently open sand bottom residents dominate. Species diversity increases associated with the addition of hard bottom substrate can be expected to be seen in the phyla Porifera, Crustacea, Annelida, Mollusca, and Cnidaria and among non target reef obligate and reef associated fish species. Some of these organisms will serve as important food resources for recreationally and commercially important fish species.

E. Clarify how materials to be deployed as referenced in the Corps August 17, 2000 public notice are consistent with the goals and objectives referenced in letter "D" above.

Response: As proposed in the August 17, 2000 Public notice on this re authorization, the materials requested were listed as: clean concrete rubble, quarried limestone, steel hulled vessels cleaned to FWC, EPA, ACOE and USCG standards, materials composed of metal at least 1/8" thick welded and securely fastened and weighing at least 150 pounds, prefabricated materials composed of the materials previously mentioned, and a variance to utilize in an experiment, concrete frame tetrahedron incorporating intact, unballasted automobile tires.

1. Clarification of materials proposed for use

As noted in I A of this completeness letter response, the variance request for the tire unit tetrahedron as proposed in the submitted design has been withdrawn.

To provide further clarification of the above list, the materials proposed for use would also

include clean steel non productive oil and gas support structures (as previously permitted), heavy gauge steel surplus military equipment cleaned in accordance with EPA guidelines (as previously permitted). Both of these materials, though not necessarily readily available, have withstood 20 year return interval hurricane events, have life spans as functioning reef materials that will exceed 30 years, and have been shown in studies to provide fisheries habitat benefit to targeted recreationally important reef species (groupers, snappers, jacks).

“Metal” materials were intended to be limited to steel alloys, iron, or construction grade aluminum alloys with no other heavy metals allowed (copper, lead, chromium, tin etc). For private reefs, units composed of metal would have no metal component of the frame or skin less than 1/8 inch and would have to have a minimum weight in air of 150 pounds. For public and sanctuary reefs, for any units composed chiefly of metal, or with metal components, metal thickness would be 1/4 inch minimum.

Concrete rubble was specifically meant to include selected contaminant free (including asphalt) clean concrete or concrete and reinforced steel pieces (parts of bridge spans, supports) from coastal bridge or road demolition projects. Such rubble is intended for large reef project use with individual pieces weighing 150 pounds or greater and deployed and stacked in such a manner that the reef would provide ledge overhang habitat and a variety of holes and crevices of varying size range. Sufficient materials would be available so as to be deployed in sufficient quantity to create a high profile reef (>1.5 meters) with many interstitial spaces. Contaminant free concrete building material would also be considered on a case by case basis.

Secondary use (i.e. materials originally designed for some non artificial reef use) precast concrete was also intended to be specifically listed in addition to concrete rubble. Different from rubble in that the individual materials may not necessarily be broken into pieces, concrete precast materials would include pilings, culverts, junction boxes, large blocks, traffic barriers, and other appropriate formed structures individually weighing hundreds of pounds. These precast materials when used as reefs are placed or stacked to provide shelter opportunities for reef fish. These shelter spaces may be within the units if hollow, between or under the units where stacked.

Quarried limestone is intended to reflect the use of multiple large boulder sized units (individual boulders 150 pounds or larger placed in interlocking piles to form multi-ton reef formations. This material, while periodically used in reef development in south Florida, has historically not been used in west Florida artificial reef projects due to limited local availability. However, the stability of these reefs created by the interlocking nature of rock boulders, the rugosity of the rock surfaces, and the interstitial spaces created has resulted in boulder reefs serving as excellent habitat. Anticipating some future use of this material, we have requested that it remain on the list of permitted materials

Prefabricated structures are intended to mean units designed and built by a company as artificial reef units and composed of concrete, construction grade structural steel or aluminum, natural rock, or some combination thereof and no other material except fiberglass reinforcement rods

imbedded in concrete.

Proposed to be excluded from consideration as reef material in the FWC Escambia LAARS are white goods (stoves, washers, dryers, refrigerators) and any sheet metal structures not meeting the 1/8 inch minimum requirements, any structures composed of or incorporating into their structures fiberglass (except as reinforcing rods imbedded in concrete), wood, polyvinyl chloride and other plastics; rubber or synthetic tires; other synthetic petroleum based products, and plexiglass materials; storage tanks that formerly contained hazardous chemicals including petroleum products. Other items to be excluded would be automobiles, buses, trucks, vans, agricultural vehicles, commercial non combat aircraft and their components, not meeting the clean metal thickness standard; any materials containing pollutants and hazardous wastes such as PCBs or asbestos that can't be effectively cleaned to EPA standards under the Toxic Substances Control Act (TOSCA); concrete construction debris where usable concrete can't be effectively separated from wood, drywall, visqueen, or insulation; any materials whose inherent basic design increases the likelihood of rolling extensive distances; any materials so flimsily constructed that catastrophic structural failure is immanent even under normal winter weather conditions. Also excluded are all surface and midwater fish attractor devices (FADS).

Additional guidance provided in a letter from EPA region IV on May 16, 1994 (Wesley B. Crum, Chief Coastal Programs Section to Jon Dodrill, State Reef Program Administrator) emphasized the following:

1. All reef materials placed offshore must be done so consistent with an approved artificial reef program.
2. All materials should provide long-term viable fisheries habitat. The use of materials which would only act as short-term fish attractants have therefore been considered trash disposal, requiring an ocean dumping permit.
3. The following materials are prohibited by federal and international law from being used as part of an artificial reef:
 - a. Atomic, biological or chemical warfare agents.
 - b. High level radioactive material and low level radioactive material above trace levels. Any article or device licensed by the Nuclear Regulatory Commission would be considered in greater than a trace concentration, including but not limited to radium dials or gauges.
 - c. Persistent inert synthetic or natural materials which may float or remain suspended in the ocean. This includes material which, within a reasonable time, could break off and float.

2. Consistency of Materials with Reef Building Goals and Objectives

For public reefs and sanctuary reefs, the stability and durability construction objectives of no movement in a 20 year return interval hurricane event at the depth placed, no movement outside the permitted area in a 50 year return interval storm event, and a functioning artificial reef life of at least 20 years will be sought. Decisions on material stability and durability will be based upon past field experience with similar materials and/or engineering stability analyses. Reef design and placement will emphasize providing habitat for appropriate adult and juvenile fin fish species and their fish and macroinvertebrate prey bases. Appropriate habitat will include emphasizing the

use of environmentally acceptable material with structural attributes known to be attractive to important reef fish species for shelter and or feeding and subsequent growth. Habitat complexity will be emphasized.

For unpublicized sanctuary reefs, some experimental use of designs that make structures more difficult to fish and provide some indication as to whether or not fishing has been taking place on these structures may occur. The sanctuary reef program will focus more heavily on the use of engineered structures previously proven to be useful to important reef obligate species or innovative units specifically designed to be utilized by such species at one or more life history stages. Designed units will be able to provide standardized units of known volume and surface area which will also facilitate comparison monitoring between publicized and unpublicized reefs.

For private reefs, the materials and designs will also emphasize creating habitat and shelter attractive to legal size recreationally important fish and their reef associated or reef obligate prey bases. Units may be lighter to meet the objectives for safe loading and offloading of material from private boats, but are intended to be so placed in the permitted areas that they will not move out of the permitted areas in a 50 year return interval storm event. Any materials with a known past history of extensive movement (hundreds of yards) will not be considered for use as private reef building materials. The target life expectancy for private reefs as shelter will be 10 years.

For all three reef types no materials will be used which are suspected of causing harm to human health, the marine environment, or present risks to navigation through creation of obstructions or property damage (NFEA Section 203(4-5)).

F. Clarify how the materials to be deployed are consistent with the guidelines of the NARP, GMARM, and CARPG.

Guidelines in the above documents are that artificial reef materials should have functionality, cost effectiveness, durability, stability, long term compatibility with the marine environment, not adversely impact human health, safety, or property, and not disassociate into components parts which may move or float outside the permitted area. Nevertheless these are guidelines may be waived if they are at variance with the permit and with research objectives of the program.

The proposed material composition of all three reefs types meets the composition guidelines in the above documents. There is no single longevity standard, since it is a function of safety, stability, cost, purpose, and habitat values sought. Stability, a potential issue with the private reefs will be mitigated through deeper depth placement, and location in the reef area inside a .25 mile buffer from the permit boundaries.

G. Clarify how the monitoring and management of the LAARS will be accomplished specifically in light of the goals and objectives referenced in letter “D” above.

Response:

1. Public and Sanctuary Reef Monitoring.

The goals and objectives for public and sanctuary reefs have been described in the response to item **II-D**. Monitoring of the public and sanctuary reefs will be conducted in a cooperative effort among the FWC Assessment Dive Team, Escambia County staff, local volunteers and hired outside assistance as needed. The establishment of an Escambia County Division of Marine Resources (ESCMR) gives Escambia County a powerful artificial reef management tool to assist the FWC in monitoring and management of the Escambia LAARS as well as other County artificial reef sites. For example, ECDMR received from FWC a \$14,000 monitoring grant to ground truth and assess older artificial reef sites inshore of the LAARS in 2000-2001. The County is committed to a cooperative partnership with FWC in the monitoring and management efforts of the LAARS sites.

Compliance monitoring of the correct physical placement at appropriate depths of all publicly funded reefs (both public and sanctuary reefs) will be through an on-site observer who will either be a staff member of the Escambia County Recreation and Parks Department or a FWC staff member.

Physical and biological performance of the public reefs will be conducted through the combined resources of the Escambia County Division of Marine Resources (ECDMR), FWC staff, and additional assistance obtained through monitoring grants to the County. Biological monitoring of fishery resources using point count, total count, or roving diving methodology on 5 selected sanctuary reefs will be conducted beginning one year post deployment in spring, summer, and fall and compared with similar publicly fished structures placed at similar depths and during a similar time frame for a four year period (30 dive events/yr). Ten other examples of selected public reefs which have been deployed for two or more years will be visually inspected for performance on an annual basis. The intent is that all public reefs will be visually inspected at least once every two years, during which structural condition and utilization by marine fish and macroinvertebrates will be assessed. Additionally, after the first year, hook and line fish censuses targeting recreational species will also be made on five additional sanctuary and five comparable public reefs for length/weight comparison purposes (assuming availability of private reef funding).

2. Private Reef Monitoring.

Four aspects of private reef monitoring will take place: 1) monitoring for suitability of material leaving the dock through a formal inspection program; 2) monitoring of representative materials of previously unknown stability, durability or habitat history by setting examples of these materials aside in a study site; 3) pre and post deployment compliance monitoring of selected private reefs through cooperation with the private reef builders.

Examples of representative materials deployed by private fishermen will be placed in a single study area location within the Escambia LAARS and monitored for biological and physical performance on an annual basis.

The Chief of ECDMR, Captain Robert Turpin, will also arrange through charter captains and private individuals to accompany them offshore to observe deployments of representative unpublicized artificial reefs in the LAARS areas. A target number of 20-25% of the annual private pre-deployment trips will be monitored to document development and permit compliance.

Beginning in year #2, and to continue each year thereafter over a five year period, the Chief of ECDMR will also arrange with private reef builders to confirm reported post deployment locations of other randomly selected five sites previously deployed in year #1 or in subsequent years. The intent is to conduct sample spot checks of deployed private reefs to: 1) insure they have been placed in the LAARS ; 2) assess their physical condition in relation to the 10 year longevity goal and 3) obtain feedback from the users on how they feel their private reef sites are performing in terms of meeting their fishing objectives.

For the above post deployment assessments, the two large areas will be divided into one nautical mile square grids. Location of private reefs will be randomly selected from these grids. Arrangements will be made with the user to proceed to the appropriate grid and identify the reef and if possible its current condition. Initial deployments will have been based upon providing coordinates that fell within an agreed upon one square nautical mile grid square within the LAARS areas.

3. Public and Sanctuary Reef Management.

Management will start with planning. On an annual basis, based upon the availability of funding for public reefs, the Chief of ECDMR in consultation with FWC will develop a detailed plan (usually in the form of a grant application) for the construction and deployment of artificial reefs in the LAARS for that year. Ongoing management of existing reefs will include active efforts on the part of the County to solicit feedback from the general public and charter fleet on their experiences with public artificial reef use in these LAARS areas. At the five year conclusion of this proposed re-authorization, a formal user evaluation of this LAARS site will be conducted. Using GIS mapping, the relationships of existing public reefs to each other will be used in determining future locations of public reefs over the next five years as well as the locations of unpublicized sanctuary reefs proposed for placement, depending on the availability of funding.

Management of the public reefs will include provisions for siting of the public reefs in differing locations (water depths) to accomplish public reef objectives 1,3,4, and 5. Objective 2 will be accomplished by selecting the materials for public reefs that will provide suitable habitat for target species, with sufficient mass at the proposed water depth to ensure a minimum of 20 year durability and stability.

Management of the sanctuary reefs will include an analysis of previous public reef locations and the general locations of private reefs to determine travel and use patterns. Locations for the siting of sanctuary reefs will be selected so as to minimize their discovery by fishers using public reefs or those using their own private reefs.

Some of the original aspects of artificial reef management discussed in the National Artificial Reef Plan (1985) such as maintenance of a series of buoys to advertise the location of the sites or indicate hazards to navigation are not appropriate for the Escambia LAARS. Since 1985, increases in navigation technology allowing for readily affordable GPS satellite receiver units have made it unnecessary to incur the expense of marking public reef sites. Today most vessels venturing beyond 10 nautical miles from shore have GPS equipment. However, it is important that public reef sites are identified with the correct latitude and longitude. Ground truthing of any public LAARS sites where accurate GPS coordinates may be in question will be an ongoing County/FWC task. These coordinates will be advertised at both the County level, through the FWC marine website, with new public reef coordinates also featured in published FWC fishing regulations. The USCG 8th District has determined that no aids to navigation are needed as long as the 50 feet minimum clearance is heeded. Both Escambia County and the FWC feel that by not placing buoys offshore, an expensive maintenance problem is avoided, and potential night navigation problems associated with unlighted buoys being accidentally struck by small boats is eliminated.

Another historic public reef management objective has been that of “renourishment” or adding to reefs. This is a holdover from a time when not all public reefs consistently used long-lived reef materials or placed the material on unsuitable bottom so that reefs sometimes sank into fine sediments. The LAARS public and sanctuary reef management objective is to build and properly place long-lived reef structures the first time around and do so at multiple locations, as opposed to continually add to the same few locations because prior material got buried, fell apart, or washed away.

The FWC in conjunction with the County will develop a pictorial brochure describing the LAARS program including locations of public reefs, how the private reef building program component can be properly used, etc.

BROCHURES

4. Private Reef Management.

Management of the private reef building component of the LAARS program represents the greatest quality control challenge to the program. Understandably, private reef building activity has elicited some of the greatest concern among the public. One area of concern is that there is no means by which FWC, the permit holder, can ensure that a private citizen will deploy his artificial reef within the permit area, without putting an observer on every vessel. Escambia County is not prepared to provide the resources for this effort, nor are FWC artificial reef program resources currently available out of Tallahassee. This must be addressed by FWC’s Division of Law Enforcement, the USCG, and citizen cooperation with the permit program. We will work with County staff to meet and discuss the issue with affected stakeholders and use existing resource violation alerts (1.800 and *FMP numbers) to increase the “eyes on the water”. A concerted effort will be made to affirm or refute these comment assertions over the next permit period.

We recognize that the greatest level of quality control over placement of materials can be

achieved by placement of a County staff member or FWC employee on every private vessel carrying reef materials offshore to the LAARS. In the absence of Escambia County staff resources available to undertake this management action on every deployment, we propose an alternate management approach: With sufficient advance notice, the County inspector may request to accompany the private individual to a previously deployed private reef, reported to have been placed in the LAARS, to confirm that the reef is within the LAARS boundaries. The inspector, with sufficient advance notice, may also request to accompany a subset of private individuals participating in the program to the LAARS to make reef deployments with the understanding that the inspector will not retain the precise coordinates of the private reef (see monitoring, above). The inspector will also work with LAARS users in an outreach capacity to encourage them to properly utilize the large areas.

We recognize that the program is probably not a legal deterrent to a certain segment of private reef builders. However, the FWC and ECMRD want to provide a program so managed that it serves as a viable resource for private citizens in northwest Florida who wish to build reefs under the terms and conditions of the ACOE permit. If this component of the large area program is abused, the private reef building sub-permitting activity will be dropped to avoid revocation of the permit by the ACOE. Focus would then continue on public and sanctuary reef development activity.

A second management concern is that even if all private reefs approved under the LAARS program are deployed legally in the permitted areas, their actual locations are still unknown. This will be addressed, to some extent through the monitoring program, so that a sample of sites can be used to address deployment issues.

A third area of public concern is that by modifying materials standards to let the recreational fisherman build his own reef, that these materials are going to migrate offsite even if they were deployed on site legally. The management tool proposed to address these concerns is the continuation of an inspection program run by an experienced and competent County inspector and to continue to permit only materials of acceptable composition.

The inspector will evaluate every proposed private deployment in light of past performance of such materials as documented from personal experience and the literature. He will also assist FWC with monitoring of material designs of unknown prior performance and undertake education efforts with private citizen applicants in the course of providing them technical assistance and suggestions for maximizing the stability of their reefs.

H. The FWC correspondence dated June 19, 2000 references biyearly monitoring of the LAARS. Will all three categories of reefs be available for inspection? Approximately how many reefs would be inspected during each monitoring event?

Response: Please see **II G (1-2)**, monitoring of public, sanctuary, and private reefs. ECDMR will monitor all three categories of artificial reefs within the LAARS. At this time it is

not possible to predict the total number of annual monitoring dives due to budgetary uncertainties. Volunteer groups have been utilized in other parts of Florida. This may provide an effective means to subsidize the ECDMR and FWC artificial reef monitoring efforts, along with monitoring grants, and assistance from FWC Tallahassee staff.

I. The FWC correspondence dated June 19, 2000 appears to suggest that basic performance monitoring would be on the LAARS. Please clarify if monitoring (compliance, performance, biological, fisheries, and socio-economic) as discussed in the NFEA, NARP, and CARP will be accomplished for the LAARS. If so provide a description of how it will be accomplished.

Response: Please see **II G (1-2) and II L** for monitoring procedures.

K. Clarify if maintenance as referenced in the NFEA, NARP, and the CARPG will be accomplished for the LAARS

Response: Maintenance of artificial reefs created within the LAARS, are referenced in the NFEA, NARP and CARPG. NARP and CARPG maintenance requirements are essentially identical. The LAARS program for physical reef maintenance once materials are on the bottom will only be accomplished when required. Preventative maintenance will be practiced through materials selection and preparation before the reefs go in the water as well as site selection, to insure for example, these reefs don't sink out of site in some mud bottom. Mud bottoms appear to be more prevalent further west as the continental shelf sediment composition comes increasingly under the influence of the Mississippi River.

If private reef materials are found to have been placed or moved offsite and these or other materials can be linked back to the LAARS program, the offsite materials will be recovered at the expense of the permit holder, FWC.

Some private reef maintenance may occur with respect to heavier designed units which are also more expensive. To protect a private reef builder's investment, at least two commercial carriers have advertised the ability to physically move deployed private structures short distances if the builder feels that other anglers may have located the site. If materials are moved outside the one square nautical mile grid in which the original reported coordinates existed, the mover of the reef will report revised coordinates. Commercial carriers and private reef builders will be informed that they are not to move units that they themselves did not place on the bottom.

"Renourishment" i.e. replacement of reef materials lost through deterioration or perhaps burial is expected primarily to occur with the private reef program component of this operation, through the replacement of units lost through deterioration over time. This is a largely obsolete concept that was discussed in **Section II G 3**, when site selection or material type results in limited durability.

While the FWC can make recommendations, we understand that specification of maintenance and other above mentioned requirements is the ultimate responsibility of the Corps when issuing permits.

Reef maintenance is also mentioned in Section 205(b)(2), but again this federal law relates to the responsibility of the Administrator of the Environmental Protection Agency under section 402 of the Federal Water Pollution Control Act, and not the applicant for a permit, to consult with the Secretary of the Army to ensure that any permit issued by EPA is consistent with any permit issued by the Secretary of the Army. It is our understanding that only a single re-authorization permit would be issued, which would represent EPA input.

The NARP describes maintenance of artificial reefs in Section III(E)(3). Section III(E)(3)(a) states that certain maintenance may be necessary to comply with permit conditions for items such as buoys. Since the placement of buoys is not currently a permit condition and is not proposed in the reauthorization request, this requirement becomes moot (please see buoy maintenance discussion under **II G(3)** of this response). Section III (E)(3)(b) of the NARP states that additional maintenance such as adding materials to maintain reef effectiveness due to the subsidence or burial may be required. This would be undertaken in the LAARS when monitoring surveys demonstrate a need for such maintenance but ideally would be avoided in advance by using publicly funded reef structures resistant to complete burial and at locations where burial is less likely to occur.

NARP Section III (E)(3)(c) states that data on the reefs such as material type, deployment date, deployment location and fish surveys should be maintained. Maintenance as relates to these parameters will occur on every reef constructed within the LAARS and housed in a database such as has been maintained since the permit was originally issued. This guideline goal is generally met with fish surveys limited to spot checks and not formal repetitive monitoring events on every single public, private, and sanctuary reef. The ideal is beyond the scope of any state program. However, ongoing assessment of reef species and reef effectiveness will occur on representative examples of all three reef types as part of a formal monitoring program.

The CARPG requirements are identical to those described above for the NARP and such maintenance within the LAARS will be as described above.

L. Clarify how the LAARS will be monitored and managed in accordance with GSMFC fisheries management guidelines.

Response: The GSMFC fisheries management guidelines referenced in this question are actually the CARPG document (Clif Payne, pers. comm. 12/01/00). The monitoring section of the CARPG describes monitoring as being required for two primary reasons; the first is to ensure compliance with permit conditions and other regulations, and the second reason is to provide an assessment of the predicted performance. In response to questions, GSMFC is preparing a letter stating that the guidelines are just that, an aid to development and were never meant as absolute

requirements, standards, or regulatory conditions.

The compliance monitoring section in the CARPG indicates that recording and reporting requirements should be held to a minimum to demonstrate that conditions of the governing permit(s) are being met. The actual monitoring is described as the documentation of material stability and structural integrity and may be accomplished with simple depth recorders.

Within the LAARS, all compliance monitoring conditions contained within the re-authorized permit will be followed by the FWC. The application and reporting process as described in the application explains that the final coordinates of all public and private deployments will be required of the applicants requesting to utilize the LAARS. The County inspector will play a critical role in determining to what degree of accuracy private reef coordinates can be secured. A realistic target goal for private reef deployments is to insure they are in the permitted area within an agreed upon designated one square nautical grid square, and cooperation in arranging for spot checks with the private deployers.

The performance monitoring section in the CARPG indicates that this is a voluntary activity to provide an on-going evaluation to determine if the reef is accomplishing its objective. The engineering assessment section indicates that on-going determination of reef material stability and structural integrity is usually accomplished by examination by SCUBA divers. The biological assessment is accomplished in order to collect data on the development of the reef community. The fisheries assessment involves the evaluation of quantifiable impacts of the reef on some type of fishery. The socio-economic assessment is described as a key element in measuring the overall success of an artificial reef or system of reefs.

Within the LAARS, the FWC has proposed to conduct field monitoring at least twice annually, targeting no fewer than 10 representative public sites. Monitoring frequency of sanctuary and private sites will occur as previously described. This should provide the minimum data required for the performance monitoring, engineering assessment, biological assessment and fishery assessment for reefs constructed in less than 110 feet by SCUBA divers. For deeper reefs, these data will be collected using depth recorders and possibly remote cameras or the use of side-scan sonar, depending upon annual funding available to the FWC artificial reef program.

The management section of the CARPG states that reef management should begin with the objectives for the reef, followed by monitoring and maintenance. Management strategies depend on the objectives of the reef(s). These strategies and objectives have been identified and described in the response to Item **H G**.

M. Clarify how or if the siting of the public and sanctuary reefs will incorporate GSMFC fisheries management guidelines.

Response: The GSMFC fisheries management guidelines referenced in this question are actually the CARPG document (Clif Payne, pers. comm. 12/01/00). The siting guidelines of the CARPG

indicate that the initial focus of siting will be to enhance or create valuable habitat that will benefit fisheries associated with the reef material and design. The reefs will create habitat in an area with very little natural hard bottom, as currently available data indicate that less than 5% of the northeastern Gulf of Mexico off the western Florida Panhandle is comprised of natural hard bottom. Of any region on both Florida Coasts, this area of Florida may represent an area of the Continental Shelf where hard bottom habitat may have been a limiting factor for the local proliferation of reef obligate species (groupers, snappers, triggerfish). The primary objective for the public reefs and private reefs will be the enhancement of recreational fishing. However, the secondary objective is to establish reef habitat that meets one or more life history requirements of important reef fish (groupers, snappers, triggerfish)

The intent of this LAARS program is not to interfere with fisheries management objectives of the National Marine Fisheries Service and the Gulf of Mexico Fishery Management Council. The FWC does recognize that the targeted reef species on the LAARS reefs are also those grouper and snapper families, many of whose species are fully or over exploited. If monitoring or other information obtained from the program indicates that this large area reef program is adversely and selectively impacting any of the fishery management plans of the Gulf of Mexico Fishery Management Council, or interfering with the express goals of the Magnuson-Stevens Fisheries Conservation Act, the LAARS program will be reevaluated. Special Management Zones (SMZs) which allow for gear restrictions in artificial reef permitted areas would then be a management tool for discussion. However, there are presently no immediate plans to request gear restrictions through SMZ status, since a need has not been demonstrated.

The goal for the sanctuary reefs would be the creation of numerous, low relief small patch reefs which would provide habitat without substantial directed fishing pressure, which generally occurs with the public artificial reef sites whose locations are well-publicized. These reefs would be sited throughout the LAARS, but will intentionally not be located near public reefs sites nor concentrations of private reefs. Siting of these reefs will be biased towards deeper water, which will reduce the possibility of these reefs being discovered and decrease their fishability.

Theoretically, these small reefs individually would not hold tremendous numbers of target species, though cumulatively they can be expected to hold a greater total number of fish than a single very large reef built of the same amount of material as all the patch reefs combined. Fishing mortality from discovery of a small patch reef would not have the productivity neutralizing impact that discovery of a very large single reef would have. The sanctuary reefs would also be designed so as to increase the difficulty of successfully catching a fish on them, through techniques such as a large number of interstitial spaces and lots of edges designed to increase the likelihood of monofilament being cut as the fish retreats to the safety of the reef after consuming a bait or lure.

III. Response to Questions from Public Employees for Environmental Responsibility (PEER).

Background:

PEER submitted numerous objections by correspondence dated September 11, 2000. PEER has requested that the FWC permit re-authorization request for the Escambia LAARS be denied because the design, location, type of deployment materials and quantity of materials to be deployed are not specified, deployment may jeopardize threatened and endangered species, and that some components of the projects are not consistent with ACOE regulations, the mandates of the National Fishing Enhancement Act of 1984 (NFEA), the National Artificial Reef Plan (NARP), the Coastal Artificial Reef Planning Guide (CARPG, Guidelines for Marine Artificial Reef Material (GMARM), and the Florida Artificial Reef Development Plan (FARDP). Responses to the following summarized information requests posed to the ACOE by PEER follow. Numerical designations of responses match the numbers of the questions original PEER letter to the ACOE.

1. The first information request is a request made specifically to the ACOE from PEER for the legal references that allow the ACOE to establish a sub-permit system for activities not directly controlled by the primary applicant. This is a request the FWC is not tasked with answering nor has the authority to make a legal judgement on in the ACOE's behalf. We do note that an operating sub-permitting precedent has been set by the ACOE Jacksonville District in the western Florida Panhandle for seven large areas, all now up for re-authorization, that have been operating under a sub-permit program from 3-8 years. The Mobile District of the ACOE has authorized a similar system for the state of Alabama.

We acknowledge the validity of PEER's statement that FWC under past and proposed LAARS operations cannot insure that the permit condition requirement for the permittee to have precise ground-truthed coordinates of all reef deployments. We are very confident that all conditions and terms of any permit re-authorization issued can be met under the public and sanctuary reef project components of the LAARS program. Reliance on law enforcement agencies and the enhanced enforcement provisions now in state law is consistent with other types of permit enforcement. Our working private reef location target is coordinate accuracy within a one square mile grid and within the permitted area with compliance spot checks. The cooperation and success of this spot check program will determine the future of this portion of the program.

Our already proposed mitigation includes: 1) inspecting all private reef materials going offshore (already in place for the past five years) and allowing only those approved environmentally acceptable materials to be used. If such reefs were placed offsite illegally, negative environmental impacts would be minimized; 2) educating the private reef builders as to the importance of following permit conditions; 3) encouraging involvement in the program by charter and other private reef builders, as opposed to the alternative of pursuing illegal reef building; 4) developing a partnership with the private reef building user group and continue to foster an atmosphere of trust and cooperation among program participants and staff implementing the program; 5) working on a procedure to obtain accurate private coordinates but where these private reef coordinates would not be accessible to the general public who may make

public information requests, and 6) in the absence of putting an observer on board every vessel on every trip, require random spot check observer trips (target 25% of all private trips going out).

The inspection and approval program for individual artificial reef deployments consists of a physical inspection, digital photo documentation, placing an identification mark on all materials, issuing a cargo/inspection manifest, and requiring a follow-up placement report notification. The inspections will be conducted by the Chief of the Escambia County Division of Marine Resources (ECDMR) Chief or qualified County designee. The ECDMR Chief has six years of experience in constructing, managing, and scientifically monitoring and assessing artificial reefs and associated fish assemblages. Materials have been and will continued to be inspected for compliance with pollutant and structural standards specified in the ACOE permit.

Due to insufficient past state law enforcement statutory authority, and the fact that the program is an offshore program in federal waters, private reef deployment outside the framework of a legal program has the appeal of fewer hoops to jump through with minimal risk of incurring penalties for dumping uninspected material offsite. We are optimistic that the enforcement picture can change. This can be accomplished through increased resources from both FWC and USCG directed toward assessing the extent of the illegal dumping problem, the implementation and enforcement of required inspection manifests to be carried on board private vessels, and enhanced cooperation and education from potential users.

2. This response addresses PEER's concern that FWC can't meet requirements of 2104(b)(1) of Title 33, Chapter 35 of the Unites State Code that states: "Each permit issued by the Secretary (of the Army) subject to this section shall specify the design and location for construction of the artificial reef and the types of quantities of materials that may be used in constructing such artificial reefs."

The Location of the Escambia LAARS is clearly defined in the existing permit, has been charted for several years on navigation charts and will not change with the re-authorization request. Navigation clearance are clearly specified (50 feet minimum MLW) with 60 feet historically and currently used as an additional buffer.

Specific proposed locations of reefs within the large areas cannot be anticipated but they will not be permitted within .25 nautical miles of permit boundaries, and will be directed away from plotted public reefs, and what little known hard bottom is present. Use of depth recorders by private reef deployers will insure that reef materials are not placed on existing hard bottom or other artificial reef structures. Coordinates as accurate as can be secured (at a minimum to within a nautical mile grid square) will be obtained from private reef builders and GPS locations obtained from observers on all public and sanctuary reefs. A tentative five year plan for public and sanctuary reef placement (both funding dependent) can be provided upon request. The large areas themselves through original coordination with the MMS and USCG have agreed upon buffers between shipping lanes and active oil leases of at least two nautical miles.

The FWC in earlier responses (see **I-E**, and **II-E(1)**) has discussed the proposed private reef materials use rationale, the proposed composition and general categories of allowable materials as well as those materials which will not be used. Within the realm of lighter weight (150 pounds) materials or materials of 1/8 inch minimum metal thickness, because such items may represent designs previously unavailable for evaluation, we cannot predict what may be presented by the private reef builders in advance. Whatever the material presented, they will have to go through the same inspection standards for compliance under conditions of the ACOE permit as any other material. We do know that constructed metal frames and cages, metal shipping boxes, dumpsters, chicken transport cages, metal pipe, etc that have been composed of metal less than 1/4" in thickness have been presented for use in other Florida Large Area programs.

Under item **I-D** of this response, past materials used in the Escambia LAARS program are listed by general type and quantity, with precast concrete, designed concrete modules, concrete bridge rubble, and construction grade steel structures dominating, along with four steel hulled vessel projects. The privately deployed steel structures were large (hundreds of pounds), 1/4 inch thick steel or greater. The steel and concrete composition trend is expected to continue over the next five years for all reef types.

We anticipate an average of one county, state, or federally funded artificial project per year (five) over the next five years, using any of the historic materials previously permitted and used, resulting in approximately 12-15 public reefs created. We anticipate, if funding becomes available, about 75-100 sanctuary reefs composed primarily of designed units (concrete or steel), averaging about five units per patch reef. If no additional funding is available for the sanctuary reef project, 25% of the public reefs proposed for deployment would be designated as sanctuary reefs.

For private reefs we have as a goal an additional 275 individual patch reefs to be constructed. These reefs will be constructed generally of one to three reef unit structures per patch reef and over the next five years are anticipated to represent a 30% increase in the existing number of private patch reefs built as a result of materials modification and increased program awareness. Some private reefs, as previously developed may be similar to public reef structures. A greater diversity of designs through use of modified materials of opportunity is expected to be proposed by private reef builders. These will be individually inspected and evaluated on a case by case basis. The general allowable material type (i.e. steel, concrete, etc.) will be the same among all reef types and presumably specified in the ACOE permit.

Numerous artificial reef "designs" have been evaluated in the scientific literature. Of particular note is the work by Bortone et al. (1997) who evaluated more than two dozen artificial reef parameters in the course of analyzing fish assemblage data. The results suggest that artificial reef materials and associated design parameters may have less effect on the assemblage of fishes associated with the reef than other factors, particularly location of the reef.

All materials and quantities thereof will be described and quantified as part of the publicly

funded public and sanctuary reef grant funding process, through the providing of materials placement reports which specify, materials type, location, composition, dimensions or tonnage. For private reefs similar information will be required along with photo documentation. All information will be placed in data bases (sanctuary and private reef databases will be separate from the public reef data base) maintained by the FWC artificial reef program in Tallahassee. The FWC has a statutory mandate under s. 370.25 F.S. to maintain a database and track all artificial reef development occurring statewide.

3. **PEER** states that the Escambia LAARS project does not contain any specific and measurable goals and objectives or provide for the incorporation of a long-term monitoring plan.

Response: Goals and objectives for public, private, and sanctuary reefs are described in **II-D** of this response letter. A projected five year monitoring program that will look at physical and biological performance of representative artificial reefs in all three categories, taking into account realistic manpower and monetary resources available is discussed in section **II-G 1 and 2**.

4. **PEER** considers these LAARS project permitting modifications a deviation of the NARP under Section 2104(a)(4) of Title 33, Chapter 35, United States Code.

Response: We feel this is a judgement call the ACOE would need to make.

5. **PEER** questions whether it has been proven that the materials proposed in the public notice will meet the stability requirements as stated in the NARP and as required by the Corps artificial reef permit guidelines (33 CFR, Parts 320 through 330).

Response: Greater clarification on the concept and nature of materials proposed for use under the 12/25/00 ACOE public notice has been presented in sections **I-D, I-E, and II-E(1)**.

Stability goals in NARP and CARPG are that materials “must have long term compatibility with the marine environment”, “should be of proven stable design” and “should be “resistant to break up and movement off the reef site” “Long-term” is not specifically described in NARP or CARPG in terms of number of years. We propose a 20+ year standard for public and sanctuary artificial reefs, based on use of previously field tested materials, and where necessary additional engineering analyses. We propose a 10 year standard as an effective functioning reef for private reefs, based on the depth deployed.

We cannot guarantee that all private reef structures proposed for use will be of proven stable design or resistant to movement and breakup. It is possible that there will be some previously unevaluated private designs or secondary use man-made objects of unproven stability and durability proposed by private fishermen for use as reef material. Private reef building materials of unknown or unproven stability that have potential to meet other materials standards, including appropriate material composition, have some fisheries habitat functional value, and are compatible with the marine environment from a user conflict reduction and no impact to hard

bottom perspective, may be considered for use by the inspector. The mitigating factors for use of materials considered borderline from a stability or durability standpoint include: 1) placement in deeper water; 2) placement at least 400 yards away from permit boundaries and hard bottom sites and 3) monitor a representative example of the structure to better assess its durability, stability, and function over time.

Private reef building materials approved but later found through field evaluation to be ineffective in surviving to meet an approximate ten year fishery habitat requirement will not be allowed for future use in the LAARS.

6. **PEER** challenges the ACOE and FWC to clearly demonstrate that all artificial reefs used will be resistant to deterioration and breakup as required by CARPG. CARPG states “Durable materials will retain the desired structure and configuration, have low maintenance costs and have long life expectancy in the marine environment.”

Response: The document was developed to provide general guidance for the development of specific standards that would relate to cost, purpose, etc. Therefore “long life expectancy” has not been defined in CARPG. Our intent is to hold the public and sanctuary reefs to a higher durability standard (20-30 years) than the private reefs (about 10 years). Lower materials cost, increased materials availability, and ease of handling, including increased personal safety, are the key reasons for the materials standards variations between private and public and sanctuary reefs. The private reef builders are using their own time and money to help subsidize the state offshore artificial reef program whose purpose is, “to enhance saltwater opportunities and promote proper management”, so their needs were considered, and balanced against the assumption of liability by FWC, and minimizing environmental impacts.

Private reefs, that through the inspection process indicate the manner of construction is likely to result in failure at welded joints or other points of attachment will not be considered for use, including field evaluation purposes. No artificial reefs deployed under the program are expected to require maintenance costs once deployed. Private reefs losing their function over time may be replaced by additional material at the private deployer’s expense.

The FWC and ECDMR will, through an inspection process, be able to verify that permittees who legally use the LAARS program will meet the materials requirements described in the ACOE permit. However they will not be able to verify at all times that the materials will make it to the appropriate stability enhancing depth. This will be addressed through random surveys.

7. **PEER** states that if the FWC has not submitted a monitoring plan to ensure compliance with all permit conditions, the permit as proposed should be denied.

Response: A general LAARS program monitoring outline is discussed in section II G (1-2).

Another component of monitoring is the FWC/ECDMR sub-permitting process that includes materials inspection and determination that the proposed artificial reef deployment site is within the LAARS boundaries. Monitoring of private reef deployments will depend upon ECDMR cooperation with private recreational reef users and charter boat operators. ECDMR has secured permission from a number of charter captains to monitor their artificial reef materials. Post deployment follow up by the ECDMR of representative private reef deployments will allow the FWC to plot those reef location to insure they are within the permitted areas.

Written field monitoring reports will be made available by FWC in cooperation with ECDMR within 30 days of completion of monitoring events. On an annual basis, a summary of the years monitoring results will be made available to ACOE and other interested parties.

8. **PEER** maintains that the proposed permit materials changes ignore the *Guidelines for Marine Artificial Reef Materials* (GMARM), a document referenced and recommended to be used for guidance by the CARPG.

Response: The issue of the 1/8 inch or any minimal metal thickness recommended or allowable in artificial reef materials is not specifically addressed in the above documents beyond recommendations not to use white goods. The proposed reduction of metal thickness criteria from 1/4 inch to 1/8 inch for private reef building standards in the Escambia LAARS is still intended to achieve a goal of approximately ten years as artificial reef habitat, based on corrosion rates. Minimum recommended weight of reef units is not specifically addressed in any of the planning documents. From a stability standpoint, the FWC LAARS program objective is no movement of deployed material off the permitted site, and survival of the material in a 10 year return interval storm event. Representative examples of these lighter units of minimal metal thickness will be monitored to determine if the 10 year stability and durability goal is met. All other materials proposed in the reauthorization also comply with NARP, and CARPG standards and GMARM guidelines.

9. **PEER** contends that the 1/8 inch metal structures with a minimum weight of at least 150 pounds are reasonably expected not to provide durable and stable habitat for fish and other aquatic organisms and in fact may be or function as benthic fish aggregating devices.

Response: The FWC and the ECDMR will be working with potential private reef builders to explain to them that the private materials ultimately deployed will have to have some value as fishery habitat, and to do that the units are going to have to survive longer than a year or two. Although one of the objectives of these smaller, lighter reefs is aggregation of fishes to increase ease of location and capture, they will also have to demonstrate that they are of a substantial enough nature that they can function over a multi-year period as hard bottom habitat.

All other materials, particularly as relates to public and sanctuary reefs can reasonably be expected to provide habitat for fish and aquatic life for a minimum of 20 years.

10. PEER asks for clarification on whether the following materials will be included in the permit: obsolete oil and natural gas production structures, prefabricated modules constructed from new or end-of the day waste concrete, surplus concrete materials (culverts and other storm water structures). All of these were permitted previously.

Response: All of the above previously approved items will be included in the permit re-authorization request (see item II-E(1)).

11. PEER's interpretation of the *Guidelines for Marine Artificial Reef Materials* was that the authors did not believe that extremely lightweight metal structures met the requirements to be considered as artificial reef materials. Additionally, since miscellaneous metal structures as light as 150 pounds and a thickness of 1/8 inch are not referenced in the Guidelines which are endorsed under the CARPG, by the omission of these items, PEER interprets them as being unacceptable. Thus PEER proposes that the re-authorization as written should be denied, and if not denied then a public notice be issued and a public hearing called.

Response: It is the ACOE's decision to approve or deny a re-authorization request or request a modification thereof, call a public notice, etc.

ECMRD points out that extremely lightweight metal structures would be sheet metal material such as white goods, and other products whose metal components are less than 1/8 inch (3.2 mm) thick. Such material would not be allowed for use in the LAARS. Additionally weight may be relative, when looking at surface to weight issues with respect to movement in storms. It is important to emphasize that the 150 pound weight of metal objects and the 1/8 inch thickness represent the minimum standards for the material to even be considered for inspection evaluation.

12. PEER references the Florida Artificial Reef Development Plan (FARDP, 1992) citing section 9.1.3 which includes materials not recommended for use as artificial reefs. This section states "light-gauge metal materials are excluded because of low density and also because they corrode rapidly in seawater, making them extremely short-lived." PEER feels that the metal modification in the re-authorization would be contrary to the direction provided by FARDP..

Response: Under corrosion conditions for structural steel of approximately .24 mm/yr in seawater, we believe that 1/8 inch (3.2 mm) minimum thickness steel materials may meet the 10 year life span proposed for private reef development. We agree that there are other materials that could better meet the FARDP objectives of possessing maximum longevity in the ocean environment but not that can also meet the objective of the private reef builders who want to be able to relatively cheaply obtain or build and safely load and offload the materials using their own vessels. Although the option exists of using a commercial carrier, whose expertise allows for the handling, loading and offloading of heavy and stable materials at no safety or property risk to the private citizen, there are reportedly still those individuals interested in private reef building who want the personal reef deployment options, and the associated modification of

standards to enable that to occur.

Other FARDP material objectives may be possible to attain even with material modifications. These include: 1) providing suitable substrate characteristics and ample surface area for fouling animals; 2) being structurally complex to support species diversity and 3) having sufficient density (mass to volume ratio) to remain stable in the ocean environment at the depth and current regime in which placed. Meeting these objectives will depend on the judgement calls of the inspector, combined with follow up evaluation. ←

13. **PEER** expressed concern that FWC's sub-permitting system may allow or foster violations of Florida Statutes, Specifically section 370.25(6)(b).

Response: PEER makes reference to Section 370.25 Florida Statutes, but erroneously states that "it is unlawful to store or transport on state waters any materials that could reasonably be used to construct an artificial reef". The error results from the omission of the remaining portion of 370.25(6)(b), Florida Statutes: "unless a valid cargo manifest issued by the commission or a commission-certified inspector is onboard the transporting vessel. The manifest will serve as authorization to use a valid permitted site or land-based staging area, will validate that the type of artificial reef construction material being transported is permissible for use at the permitted site, and will describe and quantify the artificial -reef material being transported. The manifest will also include the latitude and longitude coordinates of the proposed deployment locations, the valid permit number, and a copy of the permit conditions for the permitted site. The manifest must be available for inspection by any authorized law enforcement officer or commission employee."

A cargo manifest (Attachment 4) must still be approved and signed before any reef material goes offshore. This will apply to the LAARS program and will be integrated into the inspection program as a final approval step. The manifest with attached ACOE permit must accompany every artificial reef deployment operation offshore.

14. **PEER** believes the Corps should deny the permit as proposed and not issue permits that conflict with state laws, regulations, guidelines and legislative intent.

Response: This is an ACOE decision to make. However FWC does not see a conflict with any agency regulation or state statute and it does not recognize the validity of guidelines unless adopted through legislation or administrative procedures.

15. **PEER** expressed the following concerns:

- a. Small select group of charter and recreational fishermen deploying lightweight and ephemeral materials on the ocean bottom under guise of constructing durable and stable artificial reef habitat is not compatible with the public interest.
- b. Proposed materials use may from time to time have the actual intended effect of providing a facade for the disposal of construction-related solid waste in an environmentally unsound fashion

- c. Evaluation of probable and cumulative impacts on the public interest cannot occur unless some limit is placed on number of reefs that could be created during the life of the permit
- d. The short-lived nature of many of the proposed materials and their long-term consequences on the marine environment following the disintegration of these materials are at best unknown.
- e. PEER is concerned about the regulatory precedent the ACOE Jacksonville District would set both with regard to promoting Large Areas and authorizing materials standards reductions in view of 33 other coastal counties involved in reef development.

Response: a. The ACOE is responsible for assessing project compatibility with the public interest and to make a judgement on whether a 150 pound minimum metal weight standard combined with 1/8 inch minimum thickness material would be classified as “light weight and ephemeral”. We point out that with regard to the Escambia artificial reef program as a whole, Bell et al. (1998) estimated the annual economic benefit of artificial reefs to Escambia County at \$92.81 million and the total user days for artificial reefs off the County at 1,040,998. Particularly in the last several years when no other permitted sites were valid for use, the LAARS played an important role in continued public and limited private artificial reef development. We also note that offshore fishing by its very nature is only accessible to a limited number of people, yet is one component of our marine fishery resource. The artificial reef program was intended to serve the boating public and those who can afford for-hire excursions. These people represent a small proportion of the state’s total resident and tourist population.

b. Intentional solid waste disposal as a matter of sheer convenience, (i.e. to avoid a trip to the landfill and associated tipping fees), where no artificial reef development objectives will be met will not be authorized under the ESCAMBIA LAARS program. And frankly, it is difficult to imagine. Under no circumstances would any type of known pollutant be proposed or deployed as an artificial reef. On page 23 of CARPG, the category of “secondary use” materials is created to describe those materials that may be effectively re-utilized as artificial reefs. Scrap concrete and steel for example are two such materials. We recognize that there is still some public perception of artificial reef programs as solid waste dumping operations. Our intent is to minimize those concerns. When using secondary use materials under the LAARS program, both FWC and ECMRD will be vigilant in their management of the program to insure that the reef building objectives outlined earlier in this response are not tied to an expedient resolution of a solid waste disposal problem.

Escambia County has several solid waste disposal sites. The tipping fees of \$28/ton would not be an effective savings if the private citizen were to make the same effort to transport and load the material on his boat and expend the round trip gas money to transport the material in excess of 15 miles offshore.

c. We have provided estimates on new patch reef development in the Escambia LAARS over the next five years: 275 private patch reefs (1-3 units per reef) 75-100 sanctuary patch reefs (up to five units per reef), and 15 larger public patch reefs (10 or more units per reef).

d. The unit materials composition for the LAARS program is limited to concrete, steel, aluminum and natural rock. The positive growth effects on algal and planktonic growth as a result of increased trace levels of dissolved iron in the water have been documented through experimental seeding of iron in nutrient poor open oceanic conditions where this element appears to be a limiting factor for growth. Whether a large number of deteriorating steel structures would have any regional effect in a coastal marine environment is unknown. Similarly benthic invertebrate population changes in the sea bottom immediately adjacent to a large metal structure such as a ship wreck slowly rusting away are unknown.

The impacts to the marine environment if any, of coal fly ash commonly used as a pozzolonic additive to strengthen and render less permeable precast concrete products also have not been studied in Florida to our knowledge. Although coal combustion ash has been designated by EPA as a non hazardous waste, variations in coal source may effect levels of heavy metals contained in the ash (lead, arsenic cadmium, and hexavalent chromium). Work in Texas with coal combustion ash mixed with cement to form blocks for an experimental artificial reef showed no evidence of any leaching occurring in a lab study prior to deployment, nor in situ studies in the marine environment two years post deployment (Jan Culbertson, Texas Parks and Wildlife Department, personal communication).

e. The FWC does not view large areas to accommodate private artificial reef building as appropriate in all contexts of the Florida marine environment, including waters of the state of Florida or other geographical areas in Florida where the percentage of hard bottom is more extensive than in the western Florida panhandle. We also recognize that there are other potential alternate uses for large areas in the Panhandle or other regions such as areas designated for research or habitat enhancement purposes only. Since the ACOE issues artificial reef permits, they regulate and therefore have final authority regarding both re-authorization of existing sites and addition of any new large area sites.

16. PEER stated that under Section 320.4(h) of Title 33, Chapter II, Code of Federal Regulations, "No permit will be issued to a non-federal applicant until certification has been provided that the proposed activity complies with the coastal zone management program and the appropriate state agency has concurred with the certification or has waived its right to do so". PEER states that FWC has not provided required data that indicates that the proposed activity is consistent with the U.S. Code, Title 16, Chapter 33, Coastal Zone Management Plan.

Response: The Department of Environmental Protection and Department of Community Affairs (DCA) normally receive ACOE public notices. In a 11/8/00 letter to the ACOE, DCA reported that the state's consistency review under 15 CFR 930.41(b) was still ongoing with regard to this re-authorization request. DCA asked for a time extension until December 2, 2000. As of the date of this response, no consistency review information has been received from DCA for FWC to address. FWC was made aware through a meeting with FDEP that there was consistency concern, based upon state permit conditions. However, since the tire tetrahedron units have been withdrawn from the re-authorization, we were informed that inconsistency concerns related to the

Coastal Zone Management Plan are resolved.

DCA did respond to the ACOE in an 11/3/00 letter to Don Hambrick regarding Okaloosa County's reauthorization. DCA stated, "Despite the concerns expressed by FDEP, use of the materials identified in Okaloosa County's permit modification request are not prohibited by the enforceable policies included in the Florida Coastal Management Program. Therefore, the state has determined that approval of the requested permit modification would be consistent with the Florida Coastal Management Program.

The materials proposed for the Escambia LAARS also meet those requirements.

17. **PEER** states that proposed modifications to the materials lists are not consistent with existing permit conditions for similarly permitted sites in Bay and Escambia Counties. PEER finds this disconcerting since the permits are issued under the same criteria as specified in the NARP, are issued for the same general geographic area and by the same ACOE North Permits Branch. PEER sees this as an enforcement problem, potentially resulting in challenges to state and federal permits.

Response: This is an ACOE issue to address. The differences exist for two reasons: first the time between each application and second the use of materials of convenience. We agree that general consistency of materials standards and sub-permitting operations within the Large Areas of Florida's Panhandle is a reasonable goal. That should not mean that consistency prevents the use of appropriate secondary use materials, dictated by local availability. For example, the use of oil rig components is prevalent in Louisiana but fairly uncommon in Panhandle Florida.

18. **PEER** inquired whether the U.S. Coast Guard or the FWC Bureau of Marine Enforcement has been contacted regarding how the proposed sub-permitting program will be enforced in reference to restrictions on transporting unapproved materials in state waters as per Section 370.25 Florida Statutes.

Response: FWC has developed a cargo manifest pursuant to requirements of 370.25 F.S., as amended in 2000, along with an explanatory cover sheet (see attachment 4). The manifest has been reviewed and approved by FWC attorneys, and was discussed and reviewed by the Division of Law Enforcement. The manifest will be distributed to artificial reef permit holders statewide, along with USCG offices and FWC Law Enforcement field offices. Statewide, including the Escambia LAARS program, any vessel operator carrying artificial reef materials offshore must be carrying a cargo manifest with a copy of the reef site permit attached and which is signed off on by FWC or an FWC designated representative of the artificial reef permit holder. All Escambia LAARS sub-permittees must be carrying a cargo manifest which will only be issued if the materials are inspected, approved, and meet the ACOE permit requirements. Reef builders transporting materials and not carrying a valid manifest are subject to enforcement action.

Additionally, in accordance with ACOE permit requirements, both the nearest USCG and FWC

Law Enforcement field offices will be notified at least 32 hours in advance of an anticipated Escambia LAARS deployment. Deployment of any vessel will require at least a five day advance notification to the U. S. Coast Guard.

19. **PEER** expressed concern that there are no minimum size and weight requirements for use of clean concrete rubble, so how would an FWC appointed inspector or other regulatory party determine if a material met applicable criteria- i.e. someone could deploy a 10 pound pile of gravel and be legal.

Response: There are no state or federal standards for the minimum size or weight of concrete materials listed in the FARDP, NARP, GMARM, or CARGP. Under **II E(1)** we have proposed that concrete demolition rubble be limited to chunks of a minimum weight of at least 150 pounds and if a large load of such material is deployed that at least 80% of the load be materials that large or larger. Fishermen who wish to build a useable reef are not going to place individual objects so small that they rapidly bury. Concrete construction blocks (32 pounds per block) both intact and broken were used some years ago in a bay environment in Sarasota Bay, a relatively protected body of water. However these materials were eventually covered over. Under a scientific permit from ACOE, pallets of shell and concrete rubble are successfully providing habitat for juvenile red snapper since it mimics natural habitat. But unless such materials are fabricated into larger units or many hundreds of pounds are deployed at one site, the longevity and value of such a reef would be very limited. An experienced fisherman would not expend the time and effort to haul a minimal amount of concrete offshore that he couldn't locate two months later due to burial of individual structures less than a foot high.

20. **PEER** has concerns that this project may pose future potential conflicts with fishery management plans established by the Gulf of Mexico Fishery Management Council (GMFMC) and approved by NMFS. The concern centers around rapid removal of reef and reef associated pelagic species resulting in early closures of both recreational and commercial seasons for species which are currently managed through the total allowable catch quotas. PEER asks if NMFS or GMFMC are aware of the proposed activity or received a copy of the public notice.

Response: Staff of the GMFMC reported that they did not initially receive this public notice or at least had not reviewed it, though they had seen the Okaloosa LAARS public notice. They have since been sent a copy. NMFS received the ESCAMBIA LAARS public notice and commented on the re-authorization with regard to materials use.

GMFMC in their 12/12/00 response to Col. Joe Miller USACOE, regarding the Okaloosa Large area permits did express concern about use of chicken transport cages, and 1/8 inch thick metal boxes, stating the description of these materials was vague and ambiguous. Additional details on units such as the chicken transport cages have since been provided. Additionally GMFMC was concerned about materials that might deteriorate quickly in the marine environment and thus serve no useful function as artificial reef materials to enhance reef fisheries resources. GMFMC was also concerned about wire mesh or fencing wrapped around frames serving as fish traps.

These concerns are probably also applicable to the Escambia LAARS application since under the proposed re-authorization similar materials would be considered. However, the GMFMC to date has provided no comments to ACOE specific to the Escambia sites.

GMFMC reef section staff (personal communication with Mr. Steven Atran) did made the following observations: The main reef fish species of concern off the western Panhandle as relates to total allowable catch issues is the red snapper. The recreational red snapper fishery Gulf wide, based upon responses to public testimony, for the next two years will have a fixed season opening and closure (April 21-October 31), regardless of ultimate recreational landings, which last year were a little over the total allowable catch. The Escambia LAARS program focuses primarily on recreational fishing activities so impacts to the Gulf-wide red snapper commercial fishing quota are concentrated off Texas and Louisiana. Although the recreational red snapper fishery is expanding off the west coast of Florida, the state's total recreational landings contribution to the Gulf wide recreational catch is less than other Gulf states such as Alabama.

Even with over 4,000 active oil and rigs, another 100 oil and gas structures placed as artificial reefs and all other artificial reefs placed off MS, TX, MS, AL, and FL, according to Mr. Atran, the total Gulf wide artificial reef structure contribution to existing hard bottom may be as little as .4%. However, the local hard bottom contribution of artificial reefs in some areas like off Louisiana is higher (up to an estimated 10.2%).

Alabama has had a large area artificial reef program for about ten years. The GMFMC was involved in development of a special Management Zone (SMZ) in one of Alabama's three large areas to limit the number of hooks on an individual line to three to reduce commercial fishing impacts. To date, the construction of artificial reefs in the Gulf has not been determined by the GMFMC to conflict with Fishery Management Plans.

21. **PEER** states that the objective of obtaining the permit is not clear from the Public Notice.

Response: The objective of securing a permit re-authorization of at least five years for an existing pair of LAARS is to provide for the continuation of a three-pronged reef building program that included public, sanctuary/research reefs, and privately built and subsidized artificial reefs. The objective for these individual reef types are discussed in **II D**. The Escambia LAARS currently constitute the only valid permitted sites available for artificial reef construction for Escambia County. In a July 19, 1999 letter from the County to FWC, Escambia County Parks and Recreation requested that these large areas be re-authorized so that areas where artificial reefs can be constructed for recreational use could continue to exist.

An Escambia County Board of County Commissioners Resolution, adopted January 4, 2001, supports the LAARS program and pledges assistance in support of the program (Attachment 5).

22. **PEER** is concerned about future impacts on commercial fishing and other potential uses

especially if materials are moved offsite during storm events. PEER inquired if the Minerals Management Service (MMS) or Department of Defense (DOD) had been contacted.

Response: The ACOE is a branch of the DOD. FWC contacted by letter both the Commanding Officer of the Pensacola Naval Air Station and the Commanding Officer of the Navy's regional training program. The navy responded to FWC on July 20, 2000 (Attachment 6) stating there were no foreseeable conflicts in the use of these areas from a navigational, national security, military operations or training standpoint.

The MMS was contacted through the public notice process and responded by FAX to ACOE on November 7, 2000 (Attachment 7). The MMS stated that "Materials listed in the proposed application (lighter weight metal materials such as chicken transport cages, etc) should be subjected to careful review and evaluation for inclusion in *Guidelines for Marine Artificial Reef Materials* before such materials can be considered for permit as viable marine artificial reef materials. To do otherwise would not be in the best interest of the marine environment and success that artificial reef programs have experienced to date." MMS goes on to state that the use of vehicle tires in any shape or form is not in the best interest of the long-term success and viability of the artificial reef program."

Impacts on commercial fishing, specifically bottom trawling were dealt with by avoiding shrimp trawling grounds in the initial 1993 exclusionary mapping process that was part of the initial planning for this project. There has been one recent report from a calico scallop trawler operating in 110 feet of water south of Pensacola in federal waters who complained of picking up scrap remnants of artificial reef material, one of which still had an Alabama artificial reef inspection sticker attached. He claimed he was not operating within any charted artificial reef permitted areas as indicated on his chart (Bill Burkhardt, captain of vessel *Linda Lee*, September 12, 2000, personal communication). This is the only commercial conflict complaint received from the vicinity of the Escambia LAARS during the time of this area's operation (since 1994). Adjacent Alabama sites have experienced past conflicts with commercial snapper fishermen fishing multiple hook bandit rigs on both natural and artificial reef sites within their expansive large artificial reef areas). Attempts to limit the number of hooks fished to three per line through GMFMC Special Management Zone designation were unsuccessful in the two offshore sites because of the extent of natural bottom and historic commercial fishing activity in these artificial reef sites. Such conflicts have not been documented in the Escambia LAARS.

23. **PEER** recommends that an Environmental Impact Statement (EIS) as mandated by NEPA be conducted prior to issuance of a permit reauthorization for the Escambia LAARS site.

Response: ACOE stated that an EIS would not be required.

24. **PEER** is concerned that structures constructed from 1/8 inch thick metal, including associated wire may function as fish traps rather than artificial reefs.

Response: This has also been a concern raised by the GSMFC and the GMFMC. The concern is presumably directed at steel frames wrapped with wire fencing or towards objects like chicken transport cages. FWC does not believe that structures will intentionally be designed and specifically deployed to be fished as fish traps. Fish traps cannot legally be deployed in the depth range of the Escambia LAARS off this portion of the Florida coast. The ECMRD inspector working with the FWC is a marine biologist with an extensive recreational and commercial fishing background. He will be able to effectively evaluate the potential for any ghost trap fishing that could inadvertently occur in a cage design. If such a potential is noted, he will work with the reef builder to modify the structure to insure there are multiple escape avenues for the size class or classes of fish at risk. No unit will be approved that is deemed reasonably capable of entangling or entrapping marine life, including not only fin fish but also marine turtles.

25-32. These PEER questions and concerns relate to the use of the tire tetrahedron unit variance requested for experimental purposes.

Response: The tire tetrahedron experiment variance has been withdrawn from the Escambia LAARS reauthorization request (see **IB** and Attachment 1). Responses to the above questions are no longer necessary under this request.

33. **PEER** noted in the *Guidelines for Artificial Reef Materials* that it is stated "...the ultimate goal of this document is to encourage movement away from the use of questionable materials that have short-term application and toward the use of long-lived materials that have a proven track record of success."

Response: This is a comment directed to the ACOE for consideration. We have gone to great lengths in our program, re-authorization request, and response to state that our intention is not to allow the use of questionable materials.

34. **PEER** states that the proposed project materials modifications and lack of primary applicant oversight of the sub-permittees may negatively affect listed state and federal threatened and endangered species, including West Indian manatees, other sea mammals and sea turtles protected under the Endangered Species Act and state statutes and regulation. PEER recommends consultation with U.S. Fish and Wildlife Service, NOAA, and FWC Bureau of Protected Species.

Response: Prior consultation has occurred with all three entities on prior artificial reef projects off the Escambia County coast as part of U.S. Fish and Wildlife Service Federal Aid in Sport Fish Restoration funded artificial reef projects and addressed in previous Environmental Assessments and Section 7 evaluations. The general public and proposed sanctuary reef projects are no different than those previously built and deployed without negative impacts to threatened and endangered species.

Consultation with FWC Bureau of Protected Species Management revealed that these large areas are deeper than and further to the west of the normal range (even in summer) of the west Indian

manatee. Stray sub-adult males have ranged as far as Texas, but these are unusual events and these stray animals are moving well inshore of the LAARS. For marine turtles, incidental take has generally occurred in relation to drowning in trawls, entanglement in trap buoy lines, occasionally vessel hull impact in shallow water, and poaching. These are not mortality issues related to the LAARS program which has no buoy system and where observers are requested to be on the look out for turtles at the surface at the time of deployment. Ensuring that reef units are so constructed that turtles do not enter, become disoriented, and trapped in private reef deployment units will be the responsibility of the FWC designated ECMRD inspector in consultation with FWC staff.

As stated in item #24, artificial reef materials inspection prior to deployment allows for the rejection of materials that might reasonably be expected to cause harm to any marine organism, especially marine mammals or other federally protected species. Issues related to limitations of being able to provide primary applicant oversight to sub-permittees have not been discussed with these agencies.

Literature Cited

Bortone, S., R. F. Turpin, R.C. Cody, and C.M. Bundrick 1997. Design factors associated with artificial reef fish assemblages. *Gulf of Mexico Science* 1997(1) pp. 17-34.

Continental Shelf Associates, Inc. 1992. Compilation of existing data on the location and areal extent of reef fish habitat on the Mississippi/Alabama/Florida continental shelf-eastern Gulf of Mexico. Report prepared for the U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, National Marine Fisheries Service, St. Peterburg, FL. 25 pp.

Thompson, M.J, W.W. Schroeder, and N.W. Phillips. 1999. Ecology of Live Bottom Habitats of the Northeastern Gulf of Mexico: A Community Profile. U.S. Dept. of the Interior, U.S. Geological Survey, Biological Resources Division, USGS/BRD/CR-1999-0001 and Minerals Management Service, Gulf of Mexico OCS Region, New Orleans, LA, OCS Study MMS 99-0004. x pp.+74 pp.

Turpin, R. K. 1991. Underwater rock formation in the Gulf of Mexico off Pensacola, Florida, Phase I. Directed study for Dr. Sneed B. Collard, University of West Florida, Pensacola Florida. 20 pp.

ATTACHMENT 1

FLORIDA FISH AND WILDLIFE CONSERVATION COMMISSION



JAMES L. "JAMIE" ADAMS, JR.
Bushnell

BARBARA C. BARSH
Jacksonville

QUINTON L. HEDGEPEETH, DDS
Miami

H.A. "HERKY" HUFFMAN
Deltona

DAVID K. MEEHAN
St. Petersburg

JULIE K. MORRIS
Sarasota

TONY MOSS
Miami

EDWIN P. ROBERTS, DC
Pensacola

JOHN D. ROOD
Jacksonville

ILLAN L. EGBERT, Ph.D., Executive Director
STOR J. HELLER, Assistant Executive Director

DIVISION OF MARINE FISHERIES
Ken Haddad, Interim Director
Roy O. Williams, Assistant Director

November 20, 2000

Mr. Clif Payne
Jacksonville District Army Corps of Engineers
Pensacola Regulatory Office
41 North Jefferson Street, Suite 104
Pensacola, Florida 32501-5794

Dear Mr. Payne:

The Florida Fish and Wildlife Conservation Commission (FWC) currently holds the permit to two large artificial reef areas in federal waters, Permit 1994-02365 (IP-CP), 15 nautical miles south of Pensacola. A six month extension was issued until March 22, 2001. On May 18, 2000, the FWC submitted a one time materials variance request to utilize up to ten concrete piling tetrahedron frame units, each with 60 automobile tires slipped over the concrete piling support structures prior to final module assembly. The intent was to compare these units with a similar number of concrete frame structures lacking the additional surface area provided by the tires.

On June 19, 2000 the Division of Marine Fisheries submitted an application requesting a formal reauthorization of the large area permits. The tire module variance was included with the reauthorization application in a single ACOE public notice announcement posted August 17, 2000. On October 25, 2000 we received a completeness letter asking for responses to questions regarding both the variance and the permit reauthorization request. A substantial portion of the comments were related to the variance request.

Since our initial variance request to use the modular tire units in an experimental capacity, a preliminary September, 2000 reef module evaluation study report has been released by Dr. Bob Shipp of the University of South Alabama. During our Commission meeting on November 8, Mr. Walter made a presentation stating that he had modified his design to address stability concerns. We have not had the opportunity to evaluate this information.

Finally, our state department of Environmental Protection expressed concern about the variance request during their coastal consistency review of the permit.

For these reasons, I would request that the May 18, 2000 tire module variance be

November 20, 2000
page two

withdrawn from consideration at this time. This will allow us to direct our effort toward completion of our response to questions related to the permit reauthorization. If you have any questions regarding this variance withdrawal, please call me at (850) 487-0554.

Sincerely,

A handwritten signature in black ink, appearing to read "K. D. Haddad". The signature is written in a cursive style with a large initial "K" and "H".

Kenneth D. Haddad, Interim Director
Division of Marine Fisheries

cc: Allan Egbert, Ph.D

ATTACHMENT 2

Florida Fish and Wildlife Conservation Commission



James L. "Jamie" Adams, Jr.
Bushnell

Barbara C. Barsh
Jacksonville

Quinton L. Hedgepeth, DDS
Miami

H.A. "Herky" Huffman
Deltona

David K. Meehan
St. Petersburg

Julie K. Morris
Sarasota

Tony Moss
Miami

Edwin P. Roberts, DC
Pensacola

John D. Rood
Jacksonville

ALLAN L. EGBERT, Ph.D., Executive Director
VICTOR J. HELLER, Assistant Executive Director

BUREAU OF MARINE FISHERIES MANAGEMENT
Robert Palmer, Director

November 27, 2000

Commanding Officer (OAN)
U.S. Coast Guard
501 Magazine Street
New Orleans, Louisiana 70130

ATTENTION: Rick Harrison

SUBJECT: Aids to Navigation comments requested for a re-authorization request for two existing and unchanged large artificial reef areas in federal waters south of Pensacola, Florida.

Dear Mr. Harrison:

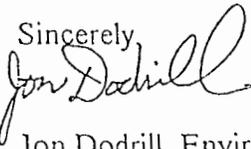
The Florida Fish and Wildlife Conservation Commission (FWC) has submitted to the U.S. Army Corps of Engineers, Jacksonville District, an application requesting the multi-year re-authorization of two currently active large artificial reef permitted areas totaling about 120.7 square nautical miles. These areas are known as Escambia East and Escambia West (Army Corps permit # 199402365 (IP-CP)) and are located about 17.5 nautical miles southeast and southwest of Pensacola, Florida in federal waters. They are currently identified on NOAA Nautical Chart #11360, 38th edition (January 31, 1998) as Fish Havens with an authorized minimum clearance of 8 and 1/4 fathoms (49.5 feet)(see attached Public Notice). The areas were transferred from the Department of Environmental Protection to the FWC in 1999.

As part of a completeness letter response to the re-authorization application, we were asked by the U.S. Army Corps of Engineers to provide them with written correspondence from the U.S. Coast Guard Eighth District regarding the need or lack thereof of any required aids to navigation to mark these sites.

These areas have been permitted since September 22, 1994, are still active, have been on the nautical charts for several years and have never had aids to navigation associated with them. There are no changes to the boundaries of the areas proposed in this re-authorization. The re-authorization application requests a continuation of a state/county/private cooperative effort to construct primarily low profile (less than 10 feet tall) artificial patch reefs within these permitted areas at depths from 73-238 feet. Unless you require otherwise, it is not our intent to establish a buoy system in these areas since there was not one there historically. We will not deviate from the minimum 50 feet of clearance and in fact intend to proceed conservatively with no objects placed in the areas that will have a clearances of less than 60 feet.

Page 2. Rick Harrison. November 27, 2000.

Comments at your earliest convenience would be appreciated so I can forward them to the Army Corps of Engineers as part of our completeness response. If you have any questions, please call me at 850/922-4340; or FAX 850/922-0463 or e-mail me at dodrill@gfc.state.fl.us. Thanks for your assistance with this.

Sincerely


Jon Dodrill, Environmental Administrator

cc: Bob Palmer, Bureau Chief, FWC MFM
Clif Payne, U.S. Army Corps of Engineers
Robert Turpin, Division of Marine Resources, Escambia County

ATTACHMENT 3

U.S. Department
of Transportation

United States
Coast Guard



Commander
Eighth Coast Guard District

Magazine Street
New Orleans, LA 70130
Staff Symbol: oan
Phone: (504) 589-6236

16518
30 November, 2000

Florida Fish and Wildlife
Conservation Commission
Attn: Mr. Jon Dodrill
620 S. Meridian St.
Box MF-MFM
Tallahassee, FL 32399/1600

Dear Mr. Dodrill:

This is in response to your letter of November 27, 2000, requesting our comments for a re-authorization request made to the Army Corps of Engineers (ACOE), Permit # 199402365 (IP-CP).

We have no objections to the re-authorization request made to ACOE for Escambia East and West Fish Havens, south of Pensacola, FL. Aids to navigation will not be required, at this time, provided the clear depth of 50 feet is maintained as presently charted. If, however, in the future it is determined these artificial reefs are a hazard to marine commerce, this office will require you to establish appropriate aids to navigation.

Your interest in maritime safety is appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read "R. N. Harrison, Jr.", written over a horizontal line.

R. N. HARRISON, Jr.
Chief, Private Aids to Navigation Section
Aids to Navigation Branch
By direction of the District Commander

Copy: Mr. Clif Payne, U.S. Army Corps of Engineers

ATTACHMENT 4



EXPLANATION SHEET FOR THE ARTIFICIAL REEF MATERIALS CARGO MANIFEST FORM

The attached artificial reef cargo manifest has been developed in compliance with subsection 370.25 (6)(b), Florida Statutes, which states that:

"It is unlawful for any person to: Store, possess or transport on or across state waters any materials reasonably suited for artificial reef construction and stored in such a manner providing ready access for use and placement as an artificial reef, unless a valid cargo manifest issued by the commission or a commission-certified inspector is onboard the transporting vessel."

Representatives of local governments with experience in artificial reef construction have been certified as inspectors by the Florida Fish and Wildlife Conservation Commission, Division of Marine Fisheries, and a listing of Commission-certified inspectors is attached to this document.

The manifest will serve as authorization to use a valid permitted site or land-based staging area, which will validate that the type of artificial reef construction material being transported is permissible for use at the permitted site, and will describe and quantify the artificial reef material being transported. The manifest will also include the latitude and longitude coordinates of the proposed deployment location, the valid permit number, and the copy off the permit conditions for the permitted site. The manifest must be available for inspection by any authorized law enforcement officer or commission employee, and a copy of the permit issued by the Department of the Army, Corps of Engineers for the artificial reef permitted site where the materials are to be deployed must be attached to the cargo manifest.

This requirement for a manifest became part of the statutory revision of the artificial reef program statute which took place during the 2000 State of Florida Legislature. This cargo manifest program has been initiated in order to reduce the amount of illegal artificial reef construction which may be environmentally damaging, create user conflicts as well as potential navigational, aesthetic or safety concerns and reflect poorly on legitimate and legal local government and state artificial reef programs operations. The requirement to complete this document is not intended to be an undue burden on entities legally wishing to legally construct artificial reefs within permitted sites, but is a tool to assist law enforcement personnel in preventing the illegal construction of artificial reefs without the knowledge of the permit holder or in areas outside of legally permitted sites. The subsection of the statute has already been employed in the Florida Keys National Marine Sanctuary to reduce illegal reef construction activities.

The cargo manifest must be approved by either a Commission representative or a Commission certified inspector prior to the loading of any potential artificial reef materials onboard a vessel in state waters. Copies of the form should be faxed within ten (10) days of approval to the state artificial reef program staff at (850) 922-0463.

Completion of the artificial reef materials cargo manifest is required for all constructions activities which occur after January 1, 2001.