

Port Dolphin has identified suction piles as an alternative to percussive-driven steel piles. If alternative suction pile anchors are used, noise is expected to be below injurious or harassing levels; however, the pile diameters of 4-5 m (14-16 ft) will impact a greater area of seafloor. An additional benefit of suction anchors is that they can be removed without the use of explosives during decommissioning of the terminal. If steel piles are driven in by percussive hammers, noise modeling will be required to minimize any potentially adverse effects on listed species. Please note that incidental takes of bottlenose dolphins and Atlantic spotted dolphins are not authorized through the ESA section 7 process. If you believe there is a potential for impacts to marine mammals, please contact Kenneth Hollingshead of our Headquarters Protected Resources staff at (301) 713-2055 for additional information regarding an MMPA take authorization. If feasible, it is recommended that suction piles be used for the mooring structures for the proposed terminal to minimize the potential for adverse impacts to protected species.

#### **Impingement and Entrainment**

The impacts of cooled seawater discharges and the potential effects of the impingement and entrainment of eggs and larvae of protected species' prey from LNGTs and warming water intakes should be discussed. Previously, we have not found any adverse impacts from seawater intakes from LNGTs and LNG terminals on protected species; however, there is little scientific information available regarding the potential impacts to listed species from these activities. LNG terminal water intake designs may vary, resulting in different levels of impacts expected between projects (e.g., the mesh, size, intake velocities, water treatment, amount of water withdrawn, and thermal discharges). Due to the uncertainty regarding these impacts, NMFS recommends the potential effects be analyzed in the BA.

There may be other impacts we have not yet identified due to the early planning stages of this project. Project modifications and additional project details we result in new impacts that we have identified above. Thank you for the opportunity to comment and early coordination on this project. Please contact Kyle Baker, fishery biologist, at (727) 551-5789 or at [Kyle.Baker@noaa.gov](mailto:Kyle.Baker@noaa.gov) with any questions about this letter.

Sincerely,



David Bernhart  
Assistant Regional Administrator  
for Protected Resources

Enclosure

cc: F - Lindow  
F/SER4 - Croom

Ref: T/SER/2007/05902  
File: 1514-22.H



## Vessel Strike Avoidance Measures and Reporting for Mariners NOAA Fisheries Service, Southeast Region

### Background

The National Marine Fisheries Service (NMFS) has determined that collisions with vessels can injure or kill protected species (e.g., endangered and threatened species, and marine mammals). The following standard measures should be implemented to reduce the risk associated with vessel strikes or disturbance of these protected species to discountable levels. NMFS should be contacted to identify any additional conservation and recovery issues of concern, and to assist in the development of measures that may be necessary.

### Protected Species Identification Training

Vessel crews should use an Atlantic and Gulf of Mexico reference guide that helps identify protected species that might be encountered in U.S. waters of the Atlantic Ocean, including the Caribbean Sea, and Gulf of Mexico. Additional training should be provided regarding information and resources available regarding federal laws and regulations for protected species, ship strike information, critical habitat, migratory routes and seasonal abundance, and recent sightings of protected species.

### Vessel Strike Avoidance

In order to avoid causing injury or death to marine mammals and sea turtles the following measures should be taken when consistent with safe navigation:

1. Vessel operators and crews should maintain a vigilant watch for marine mammals and sea turtles to avoid striking sighted protected species.
2. When whales are sighted, maintain a distance of 100 yards or greater between the whale and the vessel.
3. When sea turtles or small cetaceans are sighted, attempt to maintain a distance of 50 yards or greater between the animal and the vessel whenever possible.
4. When small cetaceans are sighted while a vessel is underway (e.g., bow-riding), attempt to remain parallel to the animal's course. Avoid excessive speed or abrupt changes in direction until the cetacean has left the area.
5. Reduce vessel speed to 10 knots or less when mother/calf pairs, groups, or large assemblages of cetaceans are observed near an underway vessel, when safety permits. A single cetacean at the surface may indicate the presence of submerged animals in the

NMFS Southeast Region Vessel Strike Avoidance Measures and Reporting for Mariners; revised August 2007.

vicinity; therefore, prudent precautionary measures should always be exercised. The vessel should attempt to route around the animals, maintaining a minimum distance of 100 yards whenever possible.

6. Whales may surface in unpredictable locations or approach slowly moving vessels. When an animal is sighted in the vessel's path or in close proximity to a moving vessel and when safety permits, reduce speed and shift the engine to neutral. Do not engage the engines until the animals are clear of the area.

#### **Additional Requirements for the North Atlantic Right Whale**

1. If a sighted whale is believed to be a North Atlantic right whale, federal regulation requires a minimum distance of 500 yards be maintained from the animal (50 CFR 224.103 (c)).
2. Vessels entering North Atlantic right whale critical habitat are required to report into the Mandatory Ship Reporting System.
3. Mariners should check with various communication media for general information regarding avoiding ship strikes and specific information regarding North Atlantic right whale sighting locations. These include NOAA weather radio, U.S. Coast Guard NAVTEX broadcasts, and Notices to Mariners. Commercial mariners calling on United States ports should view the most recent version of the NOAA/USCG produced training CD entitled "A Prudent Mariner's Guide to Right Whale Protection" (contact [Kristin.Thoms@noaa.gov](mailto:Kristin.Thoms@noaa.gov) for more information regarding the CD).
4. Injured, dead, or entangled right whales should be immediately reported to the U.S. Coast Guard via VHF Channel 16.

#### **Injured or Dead Protected Species Reporting**

Vessel crews should report sightings of any injured or dead protected species immediately, regardless of whether the injury or death is caused by your vessel.

Report marine mammals to the Southeast U.S. Stranding Hotline: 877-433-8299  
Report sea turtles to the NMFS Southeast Regional Office: 727-824-5312

If the injury or death of a marine mammal was caused by a collision with your vessel, responsible parties should remain available to assist the respective salvage and stranding network as needed. NMFS' Southeast Regional Office should be immediately notified of the strike by email ([takereport.nmfsser@noaa.gov](mailto:takereport.nmfsser@noaa.gov)) using the attached vessel strike reporting form

NMFS Southeast Region Vessel Strike Avoidance Measures and Reporting for Mariners; revised August 2007.

**Observed or Noted Strike Resulting in Death or Injury of a Right or Other Large Whale**

Incident Date/Time

Date (mm/dd/yyyy): \_\_\_\_\_ Time (local): \_\_\_\_\_

Incident Location

Latitude (N): \_\_\_\_\_ Longitude (W): \_\_\_\_\_

Environmental Conditions

1. Lighting
  - Daylight
  - Twilight
  - Night
2. Weather
  - Clear
  - Rain
  - Snow
  - Fog
  - Other \_\_\_\_\_
3. Visibility
  - Good
  - Fair
  - Poor
  - Visibility Distance: \_\_\_\_\_
4. Air Temperature (C or F)
5. Wind
  - a. Speed (knots)
  - b. Direction (degrees)
6. Wave
  - a. Height (m/f)
  - b. Swell (m/f)
7. Water depth (m/f)

Vessel Information

1. Vessel Make
2. Vessel Model
3. Length of Vessel
4. Engine Make
5. Engine Horsepower
6. **Prop Diameter**

6. Comments on how collision may have been avoided

Animal Information

1. Was animal sighted prior to incident
  - a. Behavior
  - b. Direction of travel
2. Behavior of animal following the collision
3. Portion of animal struck
  - Head
  - Midsection
  - Tail
  - Unknown
4. Description of wounds on animal. Please use drawings to mark the location of wounds. Include an estimate of length and depth of wounds.

7. **Prop Pitch**
8. **Number of prop blades**
9. Distance between prop shafts (center to center)

Navigation Information at Time of Incident

1. Vessel activity
  - Moored, docked, anchored, or fixed
  - Drifting
  - On Plane
  - Underway, but off plane
2. Autopilot On/Off
3. **Vessel Speed (knots)**
  - a. **How determined?**
4. **Engine RPMs**
5. Vessel Course (degrees)
6. Position/Location of watchstanders?
  - Bridge
  - Bow
  - Other
7. Number of watchstanders?

Incident Information

1. Part of vessel that struck whale(s)
  - Bow
  - Propeller
  - Unknown
  - Other
2. Whale size
3. Number of whales present
4. Description of what was seen, felt, heard etc.

5. Comments on damage to vessel



-----Original Message-----

From: lisa.gregg@myfwc.com [mailto:lisa.gregg@myfwc.com]  
Sent: Tuesday, December 18, 2007 3:19 PM  
To: Martin, Raymond  
Subject: RE: Port Dolphin - ichthyo analysis

Ray:

I have elevated the response so it will take a bit longer (especially with the holidays and everyone's vacation schedule). I may have it by the end of the week.

Lisa

-----Original Message-----

From: Raymond.W.Martin@uscg.mil [mailto:Raymond.W.Martin@uscg.mil]  
Sent: Monday, December 17, 2007 12:45 PM  
To: Gregg, Lisa  
Subject: RE: Port Dolphin - ichthyo analysis

Lisa - Do you have an update on when we will receive a response? Ray

-----Original Message-----

From: lisa.gregg@myfwc.com [mailto:lisa.gregg@myfwc.com]  
Sent: Friday, November 30, 2007 4:12 PM  
To: Martin, Raymond  
Cc: Debby.Tucker@dep.state.fl.us; ric.ruebsamen@noaa.gov; Mark Sramek; dbeckham@e2m.net; apoole@e2m.net; vwhalon@e2m.net; Tone, Kevin; Whitten, Patience; Leiby, Mark  
Subject: RE: Port Dolphin - ichthyo analysis

Ray:

Mark and I have been working on the response and hope to have it to you next week. Patience had called me about leaving the Coast Guard so I was aware that I needed to send you all correspondence.

Thanks,  
Lisa

---

From: Martin, Raymond [mailto:Raymond.W.Martin@uscg.mil]  
Sent: Fri 11/30/2007 3:03 PM  
To: Gregg, Lisa  
Cc: Debby.Tucker@dep.state.fl.us; ric.ruebsamen@noaa.gov; Mark Sramek;  
dbeckham@e2m.net; apoole@e2m.net; vwhalon@e2m.net; Tone, Kevin; Whitten,  
Patience; Leiby, Mark  
Subject: RE: Port Dolphin - ichthyo analysis

Lisa,

Has any progress been made identifying the taxa that you believe would be more representative for the Port Dolphin proposed site?

Port Dolphin anticipates providing responses to all the remaining outstanding data gaps by the middle of December.

Patience has accepted a position with another agency and her last day at CGHQ is next week so please ensure all Port Dolphin correspondence is sent to me.

Thanks,  
Ray  
(202)372-1449

-----Original Message-----

From: lisa.gregg@MyFWC.com [mailto:lisa.gregg@MyFWC.com]  
Sent: Friday, November 02, 2007 9:51 AM  
To: Whitten, Patience; Leiby, Mark  
Cc: Debby.Tucker@dep.state.fl.us; ric.ruebsamen@NOAA.GOV; Mark Sramek;  
dbeckham@e2m.net; apoole@e2m.net; vwhalon@e2m.net; Martin, Raymond; Tone,  
Kevin  
Subject: RE: Port Dolphin - ichthyo analysis

Patience:

I didn't want you to think we had overlooked your request. Mark is out of the office for a few weeks but we will get back to ASAP upon his return.

Thanks,  
Lisa



-----Original Message-----

From: Patience.K.Whitten@uscg.mil [mailto:Patience.K.Whitten@uscg.mil]

Sent: Monday, October 22, 2007 4:55 PM

To: Gregg, Lisa; Leiby, Mark

Cc: Debby.Tucker@dep.state.fl.us; ric.ruebsamen@noaa.gov; Mark Sramek; dbeckham@e2m.net; apoole@e2m.net; vwhalon@e2m.net; Martin, Raymond; Tone, Kevin

Subject: Port Dolphin - ichthyo analysis

Dear Lisa,

One of the issues discussed during our conference call on September 28, 2007 was e<sup>2</sup>M's efforts to refine the study area for SEAMAP data relevant to the ichthyoplankton impact assessment for Port Dolphin. As a follow-up to this, please find attached a map that shows the revised study area. To screen the SEAMAP samples, the data was first queried by latitude and longitude for a rectangle that extended 0.75 degrees north and south of the proposed project location and 0.75 degrees east and west. Then the data query was screened to include only samples that were in water depths greater than 65 feet. The area shown on the map that roughly parallels the coast represents the resultant study area.

The screening resulted in identification of 143 samples. This number is comparable with evaluations conducted for other Gulf of Mexico LNG Deepwater Port projects. The taxa identified in the samples are listed below, in order of relative density. The taxa with the highest relative densities are on top. Please note that these data are preliminary and have been subjected to limited QA. This is the raw "TAXONOMIC" field from the "ichsarwk" data set.

The field is described as: "13-character containing abbreviated SEAMAP taxonomic code. At the species level the first 7 characters refer to the genus and the last 6 characters refer to the species. At taxonomic levels greater than species the whole field is used to identify a taxon."

You previously stated that the four species used in evaluations of other Gulf of Mexico projects were not all valid for this area. If possible, please identify the taxa that you believe would be more representative for the Port Dolphin proposed site. It is very important that we identify representative species soon so we can determine if sufficient life history data is available for each species to allow quantitative analysis. In identifying representative species, it would be most helpful if you could explain your reasoning for selecting each species, as is done in the impact analyses for

other projects. For the reasons explained above, we would appreciate receiving a response at your earliest convenience.

Thank you for your assistance in this effort. Please feel free to contact me if you have any questions.

TAXONOMIC:

GOBIIDAE  
SARDINEAURITA  
DECAPTEPUNCTA  
OPISTHOGLINU  
SYNODONTIDAE  
SCORPAENIDAE  
UNID.FISH  
OPHIDIIDAE  
BREGMACEROS  
PERCIFORMES  
SYACIUM  
CLUPEIDAE  
LUTJANIDAE  
SYACIUMPAPILL  
CLUPEIFORMES  
BOTHIDAE  
CALLIONYMIDAE  
SERRANIDAE  
LABRIDAE  
BOTHUS  
GERREIDAE  
SERRANIPUMILI  
SYMPHURUS  
CERATIOIDEI  
DIPLECTRUM  
APOGONIDAE  
APOGON  
DIAPHUS  
RHOMBOPAUORU  
CALLIONYMUS  
SCARIDAE  
BALISTIDAE  
PRIONOTUS  
TETRAODONTIFO

SPHOEROIDES  
PRIACANTHIDAE  
CITHARICHTHYS  
TRIGLIDAE  
SPARIDAE  
CHLOROSCHRYSU  
HAEMULIDAE  
LUTJANUS  
ETROPUS  
MONACANTHIDAE  
CENTROPRISTIS  
ENGRAULIDAE  
CARANGIDAE  
ETROPUSCROSSO  
TETRAODONTIDA  
POMACENTRIDAE  
EUTHYNNALLET  
SPARISOMA  
OPHICHTHIDAE  
BLENNIIDAE  
CITHARIGYMNOR  
CONGRIDAE  
CENTROPSTRIAT  
GRAMMISTIDAE  
ANGUILLIFORME  
SCOMBRIDAE  
CERATIOIDEA  
THUNNUS  
CARAPUS  
SCOMBERCAVALL  
STEPHANOLEPIS  
MYCTOPHIDAE  
PEPRILUPARU  
SELAR CRUMEN  
ETRUMEUTERES  
SPHYRAENA  
PARALEPIDIDAE  
GRAMMISTINAE  
PLEURONECTIFO  
AUXIS  
OPISTOGNATHID  
CYCLOTHONE

CARAPUSBERMUD  
CYCLOPSETTA  
LAGODONRHOMBO  
PRISTIPAQUILO  
HARENGUJAGUAN  
STROMATEIDAE  
BLENNIOIDEI  
OPHICHTGOMESI  
LUTJANUGRISEU  
PEPRILUS  
HYGOPHUM  
CYNOGLOSSIDAE  
CARAPIDAE  
SYNODUSFOETEN  
MULLIDAE  
SCORPAENIFORM  
PEPRILUBURTI  
EXOCOETIDAE  
MICRODESMIDAE  
GONOSTOMATIDA  
MYCTOPHUM  
MELAMPHAIDAE  
OPHICHTREX  
SCIAENIDAE  
HOLOCENTRUS  
EPINEPHELINAE  
MURAENIDAE  
VINCIGUNIMBAR  
SYNGNATHUS  
CITHARICORNUT  
MONACANTHUS  
DECAPTERUS  
CYCLOPSFIMBRI  
MAUROLIMUELLE  
MONACANHISPID  
ALUTERUS  
CERATOSCOPELU  
CAPROIDAE  
CORYPHAENA  
PSENES  
HYPLEURGEMINA  
PSEUDOMFUGESA

MYCTOPHIFORME  
ENGYOPHSENTA  
ALUTERUSCHOEP  
HOLOCENTRIDAE  
NETTASTOMATID  
ANTHIINAE  
SARDINELLA  
SERRANUS  
HYGOPHUREINHA  
MACRORHAMPHOS  
ANTIGONIA  
THUNNUSTHYNNU  
SOLEIDAE  
SERIOLA  
OPHICHTHUS  
HOWELLA  
BENTHOSEMA  
ANTHIAS  
ACANTHURUS  
OPISTOGNATHUS  
OSTRACIIDAE  
PSEUDOMYROPHI  
NOTOLYCVALDIV  
MALACANTHIDAE  
CALLECHMURAEN  
MUGIL  
KATSUWOPELAMI  
LUTJANUCAMPEC  
SYNGNATHIDAE  
CUBICEPS  
SCOMBERMACULA  
CERATOSMADERE  
STEPHANHISPID  
DIOGENIATLANT  
RYPTICUS  
ANTHIASNICHOL  
TRACHIPTERIDA  
MENTICIRRHUS  
CLINIDAE  
BAIRDIECHRYSO  
SYMPHURPLAGIU  
CITHARISPILOP

GADIFORMES  
GONOSTOMA  
VINCIGUATTENU  
BREGMACEROTID  
ECHIODODAWSON  
CYNOSCIARENAR  
HYPSOBLHENTZI  
MYROPHINAE  
POMACANTHIDAE  
ISTIOPHORIDAE  
LAMPANYCTUS  
ARIOMMA  
FISTULARIA  
LEIOSTOXANTHU  
LETHARCVELIFE  
SUDIS  
CHAETODONTIDA  
ALUTERUHEUDEL  
STERNOPTYCHID  
SCOMBEROMORUS  
ARGENTINIDAE  
BREVOORGUNTER  
POMATOMSALTAT  
ACANTHURIDAE  
CARANX CRYOS  
DIPLOSPMULTIS  
PEPRILUALEPID  
CHIASMODONTID  
SELENE VOMER  
MONACANCILIAT  
OGCOCEPHALIDA  
BENTHOSSUBORB  
PHAENOMLONGIS  
SALMONIFORMES  
ANCHOA  
PSEUDOGRAMMA  
BROTULA  
LOPHIIFORMES  
SCOMBROIDEI  
URANOSCOPIDAE  
GONICHTCOCCOI  
LETHARCALICUL

BERYCIFORMES  
NESIARCNASUTU  
STELLIFLANCEO  
VINCIGUERRIA  
LIOPROPOMA  
MONOLENE  
PERISTEDION  
MELANOSTOMIID  
MUGILIDAE  
SCIAENOOCELLA  
CHLOROSCOMBRU  
MYROPHIPUNCTA  
ACROPOMATIDAE  
ANCHOA HEPSET  
CENTROBNIGROO

Patience Whitten  
US Coast Guard Hqtrs  
Deepwater Ports Stnds Div (G-PSO-5)  
Room 1210  
2100 Second Street SW  
Washington, DC 20593

Fax: 202-372-1926

PLEASE NOTE NEW E-MAIL ADDRESS & PHONE NUMBER:

e-mail address: [Patience.K.Whitten@uscg.mil](mailto:Patience.K.Whitten@uscg.mil)  
phone#: 202-372-1453

If you have sent an email to the signatory above that asserts some form of confidentiality, please read the following: assertions that information in an email transmission may be confidential does not exempt it from disclosure to the public or to any other party that the Coast Guard deems a necessary participant in the handling of said material. Claims of confidentiality must identify specific information believed to be confidential or otherwise protected from disclosure. The Coast Guard may release any and all information not clearly identified as protected, unless it independently determines the information should not be released. The Coast Guard will make determinations of confidential or otherwise protected information in accordance with the Freedom of Information Act.





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January 30, 2008

Mr. Mark Prescott  
Chief, Deepwater Ports Standards Division  
U.S. Coast Guard  
2100 Second Street, S.W.  
Washington, DC 20593-0001

Dear Mr. Prescott:

The Florida Fish and Wildlife Conservation Commission (FWC) is supportive of developing alternative energy projects that would benefit Florida, and therefore has been working closely with the U.S. Coast Guard on plans for both the proposed Calypso liquefied natural gas (LNG) deepwater port (DWP) in the Atlantic off of Florida, and the proposed Port Dolphin LNG DWP in the Gulf of Mexico. It is the responsibility of the FWC to ensure that facilities supporting alternative energy sources are designed, constructed and operated in a way that does not result in adverse consequences to the State's fish and wildlife resources.

With respect to the proposed Port Dolphin facility, I would like to call your attention to, and find a resolution for, issues that FWC staff has consistently raised regarding the applicability of the data that the U.S. Coast Guard staff plans to use to assess potential impacts to fishery resources. Our concerns revolve around the reliance on data from the Southeast Area Monitoring and Assessment Program (SEAMAP) and application of such data in the age-one-equivalent model to assess potential impacts to fishery resources.

While we do not dispute the quality of SEAMAP data for the purposes for which it was collected, our staff believe that SEAMAP data are inappropriate for use in any impact assessment model. SEAMAP data collection is not seasonally distributed, the methodology does not include discrete depth sampling, and it does not include egg identification data to support an impact assessment model. In addition, the larvae of some of the species (e.g., gag grouper, striped mullet, sheepshead, tarpon) of particular importance to Florida's recreational and commercial fisheries are known to be present in the proposed project area, but are not represented in the SEAMAP data which is likely due to the deficiencies previously stated.

Our staff discussed their concerns about using SEAMAP data in conjunction with the age-one-equivalent model with Dr. Joanne Lyczkowski-Schultz and Dr. Terry Henwood at the National Marine Fisheries Service laboratory in Pascagoula. Dr. Lyczkowski-Schultz is the NMFS Pascagoula ichthyoplankton expert who was involved with the development of the age-one-equivalent model. Dr. Terry Henwood is acting director of the NMFS Pascagoula laboratory, and an experienced fisheries statistician. Drs. Lyczkowski-Schultz and Henwood both agreed that the age-one-equivalent model is not applicable to the Central-West Florida shelf because the SEAMAP ichthyoplankton database from the West Florida Shelf does not contain the data necessary for the model.

Mr. Mark Prescott  
Page 2  
January 31, 2008

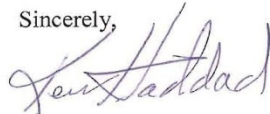
On October 22, 2007, we received an email from Ms. Patience Whitten of your staff requesting assistance in selecting fish taxa that would represent species present at the proposed Port Dolphin project site. This email made it apparent that regardless of stated FWC concerns, the Coast Guard intends to pursue the use of SEAMAP data and the age-one-equivalent model for impact assessment purposes.

It is important I convey to you that until we can reach resolution regarding our concerns about the assessment of impacts to Florida's marine fisheries from the proposed Port Dolphin project, the FWC will not be able to help develop the appropriate avoidance, minimization, and compensatory mitigation plans that would allow us to support construction and operation of this port.

The FWC appreciates the opportunity to plan this and other similar projects with the U.S. Coast Guard in a manner that meets Florida's energy needs and also protects our marine resources. FWC staff stands ready to work with the U.S. Coast Guard, the National Marine Fisheries Service, other relevant agencies, and the applicant to resolve these issues.

If you have any questions or need any additional information, please contact Mark Robson, Director of our Division of Marine Fisheries Management at (850) 487-0554 or [mark.robson@myfwc.com](mailto:mark.robson@myfwc.com).

Sincerely,



Kenneth D. Haddad  
Executive Director

kdh/lg

cc: Secretary Michael Sole

**FLORIDA FISH & WILDLIFE CONSERVATION COMMISSION**  
**MEMORANDUM**

**TO:** Ray Martin, USCG  
Project Manager, Port Dolphin LNG DWP

**FROM:** Lisa Gregg, FWC  
Agency Project Lead, Port Dolphin LNG DWP *RG*

**DATE:** January 30, 2008

**SUBJECT:** Marine fishery resource impact assessment

The following is an FWC staff summary of the outstanding issues regarding the assessment of potential impacts to marine fisheries resources associated with the proposed Port Dolphin Liquefied Natural Gas (LNG) Deep Water Port (DWP) project.

**Issue #1: Adequacy of fish taxa to be used for the ichthyoplankton assessment.** On October 22, 2007, FWC staff received an email from Ms. Patience Whitten requesting assistance in selecting fish taxa that would represent species present at the proposed Port Dolphin project site. The first sentence of Ms. Whitten's email states, "One of the issues discussed during our conference call on September 28, 2007 was e<sup>2</sup>M's efforts to refine the study area for SEAMAP data relevant to the ichthyoplankton impact assessment for Port Dolphin." The refinement referred to in the email consisted of increasing the number of SEAMAP ichthyoplankton stations from a larger portion of the Central-West Florida Shelf thereby increasing the number of SEAMAP samples to 143. The email states, "This number is comparable with evaluations conducted for other Gulf of Mexico LNG Deepwater Port projects." A taxonomic list, arranged in descending order of abundance, was included with the email. This list does not include any information on which SEAMAP stations or samples were queried to produce the list. The list does not include any information on how many of the 143 samples each taxon occurred in, nor does it provide data on how many specimens of each taxon are present in the samples where they do occur. Nevertheless, Ms. Whitten requested that FWC "please identify the taxa that you believe would be more representative for the Port Dolphin proposed site." The Taxonomic list contains 217 taxa. Only 1/3 (72) of these taxa are species. The remaining 2/3 are genera, subfamilies, families, suborders or orders; consequently, they are not germane to species-based analyses.

**Issue #2: Appropriateness of the age-one-equivalent model.** The Coast Guard and e<sup>2</sup>M requested that FWC select representative taxa from the list they provided so that SEAMAP ichthyoplankton data for the selected taxa could be used in an age-one-equivalent model. The model, which was developed by the Coast Guard and staff of the National Marine Fisheries Service, was used in Draft Environmental Impact Statements for several proposed LNG facilities off the coasts of Louisiana and Mississippi. The purpose of the model is to use egg and larval data to estimate the potential impacts of proposed LNG facilities on fishery stocks of select taxa.

On October 16, 2007, FWC Senior Ichthyologist Mark Leiby discussed our concerns about the applicability of the model with Dr. Joanne Lyczkowski-Schultz and with Dr. Terry Henwood at the NMFS Pascagoula laboratory. Dr. Lyczkowski-Schultz is the NMFS Pascagoula ichthyoplankton expert who was involved with the development of the age-one-equivalent model. Dr. Terry Henwood is

acting director of the NMFS Pascagoula laboratory, and an experienced fisheries statistician. Drs. Lyczkowski-Schultz and Henwood both agreed that the age-one-equivalent model is not applicable to the Central-West Florida shelf because the SEAMAP ichthyoplankton database from the West Florida Shelf does not contain the data necessary for the model.

**Issue #3: Inappropriate application of SEAMAP data and the age-one-equivalent model.** FWC's primary reasons for stating that a scientifically valid, *a priori* assessment of impacts to the plankton community, which might be a result of the construction and operation of the proposed Port Dolphin LNG facility, cannot be made using the SEAMAP database and the age-one-equivalent model are as follows:

- The SEAMAP database does not contain any zooplankton data. Consequently, it is not possible to determine whether the proposed facility could have a significant impact on the larvae of commercially and recreationally important decapod crustaceans (e.g., crabs and shrimp).
- The distance between SEAMAP plankton stations, and the distance of each station from the proposed Port Dolphin project precludes using SEAMAP data to assess potential, localized impacts. The complex current patterns on the Central-West Florida shelf produce frontal systems. Fish larvae are frequently concentrated at frontal systems. These frontal systems may, or may not, be present in the vicinity of the proposed Port Dolphin site but not at the SEAMAP ichthyoplankton stations. A fine-scale sampling grid centered on all of the proposed Port Dolphin deep-water port site alternatives is necessary to obtain sufficient, reasonably accurate, plankton data for analysis.
- The age-one-equivalent model requires data on the number of eggs per-unit-volume for each taxon being evaluated. It is extremely difficult, or impossible, to identify the eggs of most fish taxa. Consequently, fish eggs taken in SEAMAP samples are not included in the SEAMAP database.
- The age-one-equivalent model requires reliable information on natural mortality rates for the eggs and larvae of the taxa being evaluated. This vital information is unavailable for most, perhaps all, of the 72 species on the taxonomic list provided by Ms. Whitten.
- SEAMAP ichthyoplankton samples on the Central-West Florida Shelf are depth-integrated samples, not discrete-depth samples. In order to use the SEAMAP ichthyoplankton data in an age-one-equivalent model, it is necessary to assume that the larvae of the species being evaluated are randomly distributed throughout the sampled water column. Since the complex current patterns on the Central-West Florida shelf produce vertical stratification of the water column, it is not valid to assume that the larvae of species being evaluated are randomly distributed throughout the water column.
- It is not possible to be reasonably certain that accurate abundance estimates of larval fish taxa have been obtained without year-round sampling. Reasonably accurate abundance estimates are necessary for the age-one-equivalent model. For example, commercially and recreationally important species such as *Mycteroperca microlepis* (gag grouper), *Mugil cephalus* (striped mullet), *Archosargus probatocephalus* (sheepshead) and *Megalops atlanticus* (Atlantic tarpon) are offshore spawners, but they are not represented on the taxonomic list provided by Ms. Whitten. *Mycteroperca microlepis*, *M. cephalus* and *A. probatocephalus* are primarily winter spawners (Coleman et al. 1996; Crabtree et al. 1992; Crabtree 1995; Ditty et al. 2006; Ditty and

Shaw 1996; Powell and Greene 2006; Mark Leiby pers. obs.). *Megalops atlanticus* is primarily a summer spawner (Smith 1989; Mark Leiby pers. obs.). These and other commercially and recreationally important species may be absent from or rare on the taxonomic list because SEAMAP ichthyoplankton sampling is concentrated in the spring and the fall. Approximately 42% of the SEAMAP ichthyoplankton samples on the Central-West Florida Shelf were taken in April, May and June. Approximately 51% of the samples were taken in September, October and November. Approximately 6% of the samples were taken in December.

We are of the opinion that FWC staff have consistently stated and restated concerns that 1) SEAMAP data is not appropriate, and 2) the age-one-equivalent model is not an appropriate method, for assessing the potential impacts of the proposed Port Dolphin facility on the plankton community. These concerns have been raised during every project meeting or discussion with the Coast guard and/or the applicant beginning in May 2006, but most expressly in our December 11, 2006, email regarding ichthyoplankton data syntheses, our August 29, 2007, letter to the Florida Department of Environmental Protection regarding preparation of an Environmental Impact Statement (provided to the Coast Guard as an attachment to the State of Florida letter), and during the September 28, 2007 conference call. Nevertheless, it appears that the Coast Guard and e<sup>2</sup>M seem intent on using inappropriate data and methodology. The rationale that has been provided for this approach is “SEAMAP ichthyoplankton data is the only available data,” and “that’s the way we’ve done it for other Gulf Coast projects”. We feel this has not been an appropriate response to stated FWC concerns as it does not provide a solution to obtaining the data necessary to determine potential impacts from this proposed project. We are concerned that unless the considerable data gaps that FWC staff has identified are addressed, the result will be a significantly incomplete DEIS which may unfortunately result in a lack of FWC support for this project.

We look forward to working with the Coast Guard and the applicant to resolve these issues.



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February 1, 2008

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Dear Mr. Sramek:

As a participating agency in the review of deepwater port licenses we respectfully request NOAA's advice regarding the ichthyoplankton assessment for the proposed Port Dolphin deepwater port. Enclosed is a letter from the Florida Fish and Wildlife Conservation Commission (FWC) dated January 30, 2008, responding to our October 22, 2007 request for FWC input on this issue. As you are probably aware, we have been actively seeking FWC input on this issue for several months. Also attached is a memo from Lisa Gregg dated January 30, 2008.

As you are aware, the impacts on fisheries resources are assessed, in part, through the use of an ichthyoplankton model developed with NOAA after considerable consultation. It has provided a fair and consistent method for conducting assessments of proposed deepwater ports in the Gulf of Mexico. Additionally it is the basis, with some modification, for the assessments of deepwater ports proposed in the Northeast and California. The FWC letter and memo express concern with the adequacy of SEAMAP data and age-one-equivalent modeling that is integral to this model. The concerns are supported by referencing discussions with National Marine Fisheries Service personnel. However, it had been our understanding that not withstanding some shortcomings with SEAMAP data that NOAA was supportive of following the established processes for estimating fisheries impacts.

We note that Miles Croom's letter of August 9, 2007, regarding the Port Dolphin license application recommended using any additional data available for the State of Florida. FWC's recent correspondence was in response to the request of October 22, 2007 to determine what additional information the State of Florida desired. The correspondence has not identified any additional data sources or alternative methodologies for accomplishing the fisheries assessment.

The Deepwater Port Act sets a required timeline for the processing of license applications. Our intent is to go forward with publication of the draft environmental impact statement using the best available data and methodology. If NOAA has concerns with the methodology or is aware of additional specific data that should be considered we request to be advised of this as soon as possible. Recommendations from NOAA and the State of Florida can be incorporated into the NEPA and DWPA process as we move forward on the deepwater port license, if issued.