



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Silver Spring, MD 20910

JUL 31 2012

Eric Summa
Chief, Environmental Branch
Planning Division
U.S. Army Corps of Engineers – Jacksonville District
P.O. Box 4970
Jacksonville, Florida 32232

Dear Mr. Eric Summa:

Enclosed is an Incidental Harassment Authorization (IHA) issued to the U.S. Army Corps of Engineers, Jacksonville District, under the authority of section 101(a)(5)(D) of the Marine Mammal Protection Act (16 U.S.C. 1361 *et seq.*), to harass small numbers of marine mammals, by Level B harassment, incidental to the confined blasting operations during the Miami Harbor Deepening Project in the Port of Miami, Florida.

You are required to comply with the conditions contained in the IHA. In addition, you must submit a report to the National Marine Fisheries Service's (NMFS) Office of Protected Resources within 90 days of the completion of the cruise. The IHA requires monitoring of marine mammals by qualified individuals before, during, and after confined blasting operations and reporting of marine mammal observations, including species, numbers, and behavioral modifications potentially resulting from this activity.

If you have any questions concerning the IHA or its requirements, please contact Howard Goldstein or Jolie Harrison, Office of Protected Resources, NMFS, at 301-427-8401.

Sincerely,

Helen M. Golde
Acting Director
Office of Protected Resources

Enclosures





Incidental Harassment Authorization

U.S. Army Corps of Engineers, Jacksonville District, P.O. Box 4970, Jacksonville, Florida (FL) 32232, is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA) (16 U.S.C. 1371(a)(5)(D)), to harass small numbers of marine mammals incidental to blasting operations as part of the Miami Harbor Deepening Project in the Port of Miami in Miami-Dade County, Florida:

1. This Authorization is valid from March 15, 2013, through March 14, 2014.
2. This Authorization is valid only for the U.S. Army Corps of Engineers (ACOE) activities associated with the blasting of the Port of Miami in Miami-Dade County, Florida. The blasting operations will be limited to waters shallower than 60 feet (ft) (18.3 meters [m]) and located entirely on the continental shelf and will not take place seaward of the outer reef. The four components to be conducted by the ACOE, as part of the project in Miami Harbor, are:
 - (a) The widening of Cut 1 and deepening of Cut 1 and Cut 2;
 - (b) Adding a turn widener and deepening at the southern intersection of Cut 3 within Fisherman's Channel;
 - (c) Widening and deepening the Fisher Island Turning Basin; and
 - (d) Expanding the Federal Channel and Port of Miami berthing areas in Fisherman's Channel and the Lummus Island Turning Basin.
3. Species Authorized and Level of Takes
 - (a) The incidental taking of marine mammals, by Level B harassment only, is limited to the following species in the waters of Biscayne Bay and the Atlantic Ocean:
 - (i) Odontocetes – 12 animals from the Biscayne Bay Stock and 10 from the Western North Atlantic Central Florida Coastal Stock (22 total) of Atlantic bottlenose dolphin (*Tursiops truncatus*).
 - (ii) If any marine mammal species under NMFS jurisdiction are encountered during blasting operations that are not listed in Table 1 (attached) for authorized taking and are likely to be exposed to sound thresholds greater than or equal to Level B harassment, then the Holder of this Authorization must delay or suspend blasting operations to avoid take.



(b) The taking by injury (Level A harassment), serious injury, or death of any of the species listed in Condition 3(a) above or the taking of any kind of any other species of marine mammal is prohibited and may result in the modification, suspension or revocation of this Authorization.

4. The methods authorized for taking by Level B harassment are limited to the following acoustic sources:

(a) Explosives with a maximum charge weight per delay of 450 lb (4.5 kg)

5. The taking of any marine mammal in a manner prohibited under this Authorization must be reported immediately to the Office of Protected Resources, National Marine Fisheries Service (NMFS), at 301-427-8401.

6. Mitigation and Monitoring Requirements

The Holder of this Authorization is required to implement the following mitigation and monitoring requirements when conducting the specified activities to achieve the least practicable impact on affected marine mammal species or stocks:

(a) The Florida Fish and Wildlife Conservation Commission (FWC), the U.S. Fish and Wildlife Service (USFWS), and NMFS must review the contractor's approved blasting plan prior to any blasting activities. This blasting proposal must include information concerning a watch program and details of the blasting events. This information must be submitted at least 30 days prior to the proposed date of the blast(s) to the following addresses:

(i) FWC-ISM
620 South Meridian Street
Mail Stop 6A
Tallahassee, Florida 32399-1600 or
ImperiledSpecies@myfwc.com and Dr. Allen Foley allen.foley@myfwc.com

(ii) NMFS Office of Protected Resources
1315 East West Highway
Silver Spring, Maryland 20910

(iii) NMFS Southeast Regional Office
Protected Species Management Branch
263 13th Avenue South
St. Petersburg, Florida 33701, and

(iv) USFWS
1339 20th Street
Vero Beach, Florida 32960-3559 or

6620 Southpoint Drive South
Suite 310
Jacksonville, Florida 32216-0912

- (b) The contractor's blasting plan shall include at least the following information:
- (i) A list of Protected Species Observers (PSOs), their qualifications, and positions for the watch, including a map depicting the proposed locations for boat or land-based PSOs. NMFS-qualified PSOs must have prior on-the-job experience observing for marine mammals and other protected species during previous in-water blasting events where the blasting activities were similar in nature to the blasting project in the Port of Miami.
 - (ii) The amount of explosive charge proposed, the explosive charge's equivalency in TNT, how it will be executed (depth of drilling, stemming, in-water, etc.), a drawing depicting the placement of the charges, size of the exclusion zone, and how it will be marked (also depicted on a map), tide tables for the blasting event(s), and estimates of times and days for blasting events (with an understanding this is an estimate, and may change due to weather, equipment, etc.).
- (c) A test blast program will be completed prior to implementing a construction blasting program. The test blast program will have all the same monitoring and mitigation measures in place for marine mammals and other protected species (see below).
- (d) The weight of explosives to be used in each blast will be limited to the lowest poundage of explosives that can adequately break the rock.
- (e) The explosives will be confined in a hole with drill patterns (i.e., holes in the array) that are restricted to a minimum of 8 ft (2.4 m) separation from a loaded hole.
- (f) The hours of blasting will be restricted from two hours after sunrise to one hour before sunset to ensure adequate observation of marine mammals in the project area.
- (g) Select explosive products and their practical application method to address vibration and air blast (overpressure) control for protection of existing structures and marine wildlife.
- (h) Loaded blast holes will be individually delayed to reduce the maximum lbs per delay at point detonation (in order to spread the explosive's total pressure over time), which in turn will reduce the mortality radius. Delay timing adjustments with a minimum of eight milliseconds (ms) between delay detonations to stagger the blast pressures and prevent cumulative addition of pressures in the water.

(i) Cap the hole containing explosives with rock in order to spread the explosive's outward potential of the blast and total overpressure over time, thereby reducing the chance of injuring a marine mammal or other protected species.

(j) The blast design will match, to the extent possible, the energy needed in the "work effort" of the borehole to the rock mass to minimize excess energy vented into the water column or hydraulic shock.

(k) If possible, avoid scheduling blasting operations during the period from November 1 through March 31 (due to the increased likelihood of manatees [*Trichechus manatus latirostris*] being present within the project area).

(l) Calculate, establish, and monitor a danger (i.e., inner-most zone, located closest to the blast), exclusion (i.e., the danger zone plus 500 ft [152.4 m], safety (i.e., the third zone), and watch zone (i.e., the outer most zone) with the appropriate radius (R) based on the weight of explosives per delay. The danger zone has been determined to be larger than or equal to the threshold for Level B harassment, as defined by the MMPA. All of the zones will be noted by buoys for each of the blasts.

$$\text{Danger Zone R (ft)} = 260 (\text{lbs/delay})^{1/3}$$

$$\text{Exclusion Zone R (ft)} = [260 (\text{lbs/delay})^{1/3}] + 500 \text{ ft}$$

$$\text{Safety Zone R} = 520 (\text{lbs /delay})^{1/3}$$

$$\text{Watch Zone R} = 3 [260 (\text{lbs/delay})^{1/3}]$$

(m) The watch program shall begin at least one hour prior to the schedule start of blasting to identify the possible presence of marine mammals and is continuous throughout the blast. The watch program shall continue for at least 30 minutes after detonations are complete.

(n) The watch program shall consist of a minimum of six NMFS-qualified PSOs (at least one aerial-based PSO, two boat-based PSOs, two drill barge-based PSOs, and one PSO placed in the most optimal observation location on a day-by-day basis depending on the location of the blast and the placement of dredging equipment). NMFS-qualified PSOs must be approved in advance by NMFS's Office of Protected Resources, to record the effects of the blasting and dredging activities and the resulting noise on marine mammals. Each PSO shall be equipped with a two-way marine-band VHF radio that shall be dedicated exclusively to the watch. Extra radios shall be available in case of failures. All of the PSOs shall be in close communication with the blasting sub-contractor in order to halt the blast event if the need arises. If all PSOs do not have working radios and cannot contact the primary PSO and the blasting sub-contractor during the pre-blast watch, the blast shall be postponed until all PSOs are in radio contact. PSOs shall be equipped with polarized sunglasses, binoculars, a red flag for back-up visual communication, and

appropriate data sheets (i.e., a sighting log with a map) to record sightings and other pertinent data. All blasting events are weather dependent and conditions must be suitable for optimal viewing conditions to be determined by the PSOs.

(o) The watch program shall include a continuous aerial survey to be conducted by aircraft, as approved by the Federal Aviation Administration. The aerial-based PSO is in contact with vessel and drill barge-based PSOs and the drill barge with regular 15 minute radio checks through the watch period. The aerial PSO will fly in a turbine engine helicopter with the doors removed to provide maximum visibility of the zones.

(p) Boat-based PSOs are placed on one of two vessels, both of which have attached platforms that place the PSOs eyes at least 10 ft (3 m) above the water surface enabling optimal visibility of the water from the vessels. The boat-based PSOs cover the safety zone where waters are deep enough to safely operate the boats without any impacts to seagrass resources. At no time are any of the boats with PSOs allowed in shallow areas where propellers could potentially impact the seagrass.

(q) If any marine mammals are spotted during the watch, the PSO will notify the aerial-based PSO and/or other PSOs via radio. The animal(s) is located by the aerial-based PSO to determine its range and bearing from the blast array. Initial locations and all subsequent re-acquisitions are plotted on maps. Animals within or approaching the safety zone are tracked by the aerial and boat-based PSOs until they have exited the safety zone, the drill barge is alerted as to the animal's proximity and some indication of any potential delays it might cause.

(r) If any animal(s) is sighted inside the safety zone and not re-acquired, no blasting is authorized until at least 30 minutes has elapsed since the last sighting of that animal(s). The PSOs on watch will continue the countdown up until the T-minus five minutes point. At this time, the aerial-based PSO confirms that all animals are outside the safety zone and that all holds have expired prior to clearing the drill barge for the T-minus five minutes notice.

(s) The blasting event shall be halted if an animal(s) is sighted within the exclusion zone, within the five minutes before the explosives are scheduled to be detonated. An "all clear" signal must be obtained from the aerial PSO before the detonation can occur. The blasting event shall be halted immediately upon request of any of the PSOs. If animals are sighted, the blast event shall not take place until the animal(s) moves out of the exclusion zone under its own volition. Animals shall not be herded away or intentionally harassed into leaving. Specifically, the animals must not be intentionally approached by project watercraft or aircraft. If the animal(s) is not sighted a second time, the event may resume 30 minutes after the last sighting.

(t) Blasting shall be delayed when a marine mammal is detected within the exclusion zone at the point where the blast countdown reaches the T-minus five minutes. At that time, if an animal is in or near the safety zone, the countdown is put on hold until the

zone is completely clear of marine mammals and all 30 minutes sighting holds have expired. Animal movements into the safety zone prior to that point are monitored closely, but do not necessarily stop the countdown. The exception to this would be stationary animals that do not appear to be moving out of the area or animals that do not appear to be moving out of the area or animals that begin moving into the safety zone late in the countdown. For these cases, holds on the T-minus 15 minutes may be called to keep the shipping channel open and minimize the impact on the Port of Miami operations.

(u) During times of high turbidity and reduced visibility through the water column that compromise the sightability of animals below the water surface, adjustments should be made to the monitoring and mitigation program so that all protected species can be confirmed outside of the safety zone prior to the T-minus five minutes, just as they are under normal visual conditions.

(v) After the blast, any animal(s) seen prior to the blast are visually relocated whenever possible.

(w) The PSOs and contractors shall evaluate any problems encountered during blasting events and logistical solutions shall be presented to the Contracting Officer. Corrections to the watch shall be made prior to the next blasting event. If any one of the aforementioned conditions is not met prior to or during the blasting, the watch PSOs shall have the authority to terminate the blasting event. If any one of the aforementioned conditions is not met prior to or during the blasting, the watch PSOs shall have the authority to terminate the blasting event, until resolution can be reached with the Contracting Officer.

(x) A fish scare charge will be fired at T-minus five minutes and T-minus one minute to minimize effects of the blast on fish that may be in the same area of the blast array by scaring them from the blast area.

(y) A study on fish kill associated with confined underwater blasting will be conducted to provide information on the effects of confined underwater blasting on prey species for dolphins. This study will determine the minimum distance from the blast array, based on charge weight, that fish will not be killed, or injured, by confined underwater blasting.

7. Reporting Requirements

The Holder of this Authorization is required to:

(a) Submit a draft report on all activities and monitoring results to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, within 90 days after completion of the demolition and removal activities. This report must contain and summarize the following information:

(i) Dates, times, locations, weather, sea conditions during all blasting and dredging activities and marine mammal sightings;

(ii) Species, number, location, distance, and behavior of any marine mammals, as well as associated blasting activities, observed before, during, and after blasting activities.

(iii) An estimate of the number (by species) of marine mammals that may have been taken by Level B harassment during the blasting activities with a discussion of the nature of the probable consequences of that exposure on the individuals that have been exposed. Describe any behavioral responses or modifications of behaviors that may be attributed to the blasting activities.

(iv) A description of the implementation and effectiveness of the monitoring and mitigation measures of the Incidental Harassment Authorization as well as any additional conservation recommendations.

(b) Submit a final report to the Chief, Permits and Conservation Division, Office of Protected Resources, NMFS, within 30 days after receiving comments from NMFS on the draft report. If NMFS decides that the draft report needs no comments, the draft report shall be considered to be the final report.

(c) In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this IHA, such as an injury, serious injury or mortality, ACOE will immediately cease the specified activities and immediately report the incident to the Chief of the Permits and Conservation, Office of Protected Resources, NMFS at 301-427-8401 and/or by email to Jolie.Harrison@noaa.gov and Howard.Goldstein@noaa.gov, and the NMFS Southeast Region Marine Mammal Stranding Network at 877-433-8299 (Blair.Mase@noaa.gov and Erin.Fougeres@noaa.gov) (Florida Marine Mammal Stranding Hotline at 888-404-3922). The report must include the following information:

(i) Time, date, and location (latitude/longitude) of the incident; description of the incident; status of all noise-generating source use in the 24 hours preceding the incident; water depth; environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility); description of all marine mammal observations in the 24 hours preceding the incident; species identification or description of the animal(s) involved; fate of the animal(s); and photographs or video footage of the animal(s) (if equipment is available).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS shall work with ACOE to determine what is necessary to minimize the likelihood of further prohibited take and ensure MMPA compliance. ACOE may not resume their activities until notified by NMFS via letter or email, or telephone.

In the event that ACOE discovers an injured or dead marine mammal, and the lead PSO determines that the cause of the injury or death is unknown and the death is relatively recent (i.e., in less than a moderate state of decomposition as described in the next paragraph), ACOE will immediately report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401, and/or by email to Jolie.Harrison@noaa.gov and Howard.Goldstein@noaa.gov, and the NMFS Southeast Region Marine Mammal Stranding Network (877-433-8299) and/or by email to the Southeast Regional Stranding Coordinator (Blair.Mase@noaa.gov) and Southeast Regional Stranding Program Administrator (Erin.Fougeres@noaa.gov). The report must include the same information identified in the paragraph above. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with ACOE to determine whether modifications in the activities are appropriate.

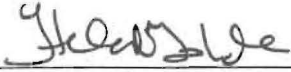
In the event that ACOE discovers an injured or dead marine mammal, and the lead PSO determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), ACOE will report the incident to the Chief of the Permits and Conservation Division, Office of Protected Resources, NMFS, at 301-427-8401, and/or by email to Jolie.Harrison@noaa.gov and Howard.Goldstein@noaa.gov, and the NMFS Southeast Region Marine Mammal Stranding Network (877-433-8299), and/or by email to the Southeast Regional Stranding Coordinator (Blair.Mase@noaa.gov) and Southeast Regional Stranding Program Administrator (Erin.Fougeres@noaa.gov), within 24 hours of discovery. ACOE will provide photographs or video footage (if available) or other documentation of the stranded animal sighting to NMFS and the Marine Mammal Stranding Network.

8. To the greatest extent feasible, ACOE is encouraged to coordinate its monitoring studies on the distribution and abundance of marine mammals in the project area with the NMFS's Southeast Fisheries Science Center, USFWS, and any other state or Federal agency conducting research on marine mammals. Also, report to NMFS and USFWS any chance observations of marked or tag-bearing marine mammals or carcasses, as well as any rare or unusual species of marine mammals.

9. ACOE is required to comply with the Terms and Conditions of the Incidental Take Statement corresponding to NMFS's project specific Biological Opinions (2003 and 2011).

10. A copy of this Authorization must be in the possession of all contractors and PSOs operating under the authority of this Incidental Harassment Authorization.

JUL 31 2012



Helen M. Golde
Acting Director
Office of Protected Resources
National Marine Fisheries Service

Date