



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Washington, D.C. 20235

JUL 25 1988

Mr. William D. Bettenberg
Director
Minerals Management Service
U.S. Department of the Interior
Washington, D.C. 20240

Dear Mr. Bettenberg:

Enclosed is the Biological opinion prepared by the National Marine Fisheries Service (NMFS) pursuant to Section 7 of the Endangered Species Act (ESA) concerning potential impacts on endangered and threatened species associated with removal of certain oil and gas platforms and related structures in the Gulf of Mexico (GOM) using explosives.

This "standard" consultation covers only those removal operations that meet specified criteria pertaining to the size of explosive charge used, detonation depth, and number of blasts per structural grouping. Consultation must be initiated on a case-by-case basis for all dismantling operations requiring the use of explosives that do not meet the established criteria.

NMFS concludes that structure removals in the GOM that fall within the established criteria are not likely to jeopardize the continued existence of listed species under the jurisdiction of NMFS. However, it is our opinion that, the proposed activities may result in the injury or mortality of endangered and threatened sea turtles. Therefore, pursuant to Section 7 (b) (4) of the ESA, we have established a low level of incidental take, which is cumulative for all removals covered by this consultation, and terms and conditions necessary to minimize and monitor any impacts, should they occur. The terms and conditions are contained in the enclosed incidental take statement. Also enclosed is a list of pending consultations that meet, with noted exceptions, the criteria established in the "standard" consultation. This biological opinion and the mitigating measures and terms and conditions contained in the related incidental take statement apply to those proposed removal operations. Therefore, formal consultation is concluded for these proposed actions.

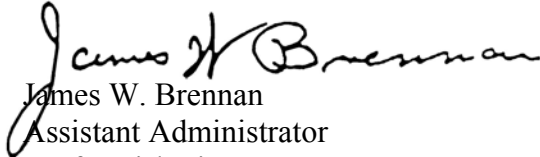


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Consultation must be reinitiated if: (1) the amount or extent of taking specified in the incidental take statement is exceeded; (2) new information reveals impacts of the proposed activities that may affect listed species in a manner or to an extent not considered thus far in our opinions; (3) the identified activities are modified in a manner that causes an adverse effect to listed species not previously considered or (4) a new species is listed or critical habitat is designated that may be affected by the project.

I look forward to your continued cooperation in future consultations.

Sincerely,


James W. Brennan
Assistant Administrator
for Fisheries

Enclosures

Biological Opinion

Agency: Minerals Management Service, U.S. Department of the Interior

Activity: Consultation for Removal of Certain Outer Continental Shelf
Oil and Gas Structures in the Gulf of Mexico

Consultation Conducted By: National Marine Fisheries Service (NMFS)

Date Issued: July 25, 1988

Background Information:

In a letter dated November 19, 1986, the Minerals Management Service (MMS) made an initial request for formal consultation pursuant to Section 7 of the Endangered Species Act (ESA) for the removal of an offshore oil and gas platform located in the Federal waters of the Gulf of Mexico (GOM). MMS and NMFS determined that removal of oil and gas platforms and related structures in the GOM may affect endangered and threatened marine species. This "may affect" determination was based on a possible relationship between endangered and threatened sea turtle mortalities and the dismantling of platforms using explosives. On November 25, 1986, NMFS issued the first of a series of biological opinions addressing, in detail, the potential impacts to listed marine species that may occur as a result of OCS abandonment activities.

MMS and NMFS established procedures for expediting Section 7 consultations on platform abandonment activities in the GOM referred to as "expedited consultations." Following those procedures, approximately 44 consultations have been completed for removal operations in the GOM region. All of the consultations have concluded that the proposed abandonment activities were not likely to jeopardize the continued existence of any listed species, but that the proposed activities may result in the incidental taking of endangered and threatened sea turtles.

The dismantling of platforms and related structures using explosives has evolved to a point where a "standard" protocol can be established for removal operations meeting certain criteria. Based upon removal techniques developed and reviewed in conjunction with the previously conducted "expedited consultations," MMS has requested, by letter of May 24, 1988, a "generic consultation" that would be applicable to all future removal operations that fall within a distinct category, defined by specific parameters. A category has been designed to include those structure types and removal techniques most commonly encountered during the expedited consultations and dismantling operations already completed. Since approximately 1000 structures that may be scheduled for future removal fall within the parameters of the established category, NMFS agrees that a "generic" consultation is appropriate at this time. The objective of the consultation is to reduce the administrative burden on both MMS and NMFS for conducting repetitive consultations on activities that may result in similar impacts to listed species and that require identical mitigating measures to maintain adequate protection for such species. This biological opinion responds to MMS' May 24, 1988, consultation request. The opinion is based on the best scientific and commercial data presently available and incorporates information from: 1) previous MMS Summary Evaluations, 2) previous NMFS biological opinions on platform removal, 3) the scientific literature, and 4) other pertinent and available information. Consultation must be reinitiated if new information becomes available concerning impacts to listed species that would alter the conclusions reached in this opinion or require modification of the measures identified in the attached incidental take statement. Consultation will continue on a case-by-case basis for those structure removals that do not meet the criteria established for "standard" removals.

Description of Proposed Action:

The proposed action involves the removal by explosive means, of offshore oil and gas structures located in Federal waters in the Gulf of Mexico. Removal of the structures will be accomplished by severing the support pilings, caissons, wall conductors, etc., using varying amounts of explosives to permit salvage of the structures. This involves the placement of explosives inside or outside of supporting structures and detonating charges primarily using electronically controlled signals.

This "generic" consultation considers only those removal operations that meet certain criteria pertaining to the size of the explosive charge used, detonation depths, and number of blasts per structural grouping. The specific criteria established to cover such removals are as follows:

- 1) Use of high velocity explosives (detonation rate greater than 7,600 meters/second).
- 2) A maximum of eight individual blast per group of detonations with charges staggered at an interval of 0.9 seconds (900 milliseconds).
- 3) Charges must be set at a minimum depth of 15 feet below the sediment surface. Severing of structures above the sediment surface "open water" must be accomplished by mechanical (nonexplosive) methods.
- 4) The maximum amount of explosives per detonation is not to exceed 50 pounds.

Species Occurring in the Project Area:

Listed species under the jurisdiction of NMFS that may occur in the project area:

<u>COMMON NAME</u>	<u>SCIENTIFIC NAME</u>	<u>STATUS</u>	<u>LISTED</u>
right whale	<u>Eubalaena glacialis</u>	E	6/2/70
finback whale	<u>Balaenoptera physalus</u>	E	6/2/70
humpback whale	<u>Megaptera novaeangliae</u>	E	6/2/70
sei whale	<u>Balaenoptera borealis</u>	E	6/2/70
sperm whale	<u>Physeter catodon</u>	E	6/2/70
green turtle	<u>Chelonia rydas</u>	Th E*	7/28/78
Kemp's ridley turtle	<u>Lepidochelys kempi</u>	E	12/2/70
leatherback turtle	<u>Dermochelys coriacea</u>	E	6/2/70
loggerhead turtle	<u>Caretta caretta</u>	Th	7/28/78
hawksbill turtle	<u>Eretmochelys imbricata</u>	E	6/2/70

*All of the U.S. green turtle populations are listed as threatened except the Florida breeding population, which is listed as endangered.

No critical habitat has been designated in the project area for the above species.

Assessment of Impacts:

Based upon their known distribution and abundance in the GOM, endangered whales are believed unlikely to occur in the vicinity of the proposed structure removal activities, and, therefore, unlikely to be adversely affected by the proposed action.

Previous NMFS biological opinions (November 25, 1986 and February 26, 1987) have addressed, in detail, removal of structures in the GOM. Accounts of endangered and threatened species which occur in the project area, and the "Assessment of Impacts" contained in these prior opinions also apply to this consultation and are incorporated by reference.

In summary, the opinions referenced above acknowledge the existence of a possible relationship between the use of underwater explosives in removing platforms and related structures and the occurrence of stranded sea turtles, marine mammals (Tursiops truncatus) and fish. Limited experiments conducted by NMFS, Galveston Laboratory confirm that sea turtles (and other marine vertebrates) found in proximity to petroleum platforms can be injured or killed by removal operations employing underwater explosives (Klima, 1986).

Technology most commonly used in the dismantling of platforms includes: bulk explosives, shaped explosive charges, mechanical and abrasive cutters and underwater arc cutters. The use of bulk explosives has become the industry's standard procedure for severing pilings, well conductors and related supporting structures (approx. 90% use). When using bulk charges, the inside of the structure can be jetted out to at least 15 feet below the sediment floor to allow placement of explosives inside of the structure, resulting in a decrease in the impulse and pressure forces released into the water column upon detonation. The use of high velocity shaped charges is reported to have some advantages over bulk explosives and has been used in combination with smaller bulk charges. The cutting action obtained by a shaped charge is accomplished by focusing the explosive energy with a conical metallic liner. A major advantage associated with use of high velocity shaped charges is that a smaller amount of explosive charge is required to sever the structure, which also results in reductions in the impulse and pressure forces released into the water column. Use of mechanical cutters and underwater arc cutters is successful in some circumstances and do not produce the impulse and pressure forces associated with detonation of explosives, however, these methods are, in most instances, more time consuming, costly and more hazardous to divers. As a result, these methods are not used on a routine basis (MMS Report on Platform Removal Techniques).

Based upon data obtained during previously conducted "expedited" consultations on platform removals, the following is a comparison of the types of explosives most likely to be used in the proposed removal operations:

<u>Explosive</u>	<u>Detonating Velocity</u>	<u>Brisance*</u>
RDX	approx. 8,199 m/sec.	1.35
C-4	approx. 8,001 m/sec.	1.15
Comp. -B	approx. 7,803 m/sec.	1.32

* Brisance is the measure of shattering power as compared to TNT which has brisance of 1.00. (MMS Report on Platform Removal Techniques, 1986.)

The proposed removal operations will be accomplished using high velocity explosives. Use of this type of explosive charge should minimize the duration of the impulse and pressure forces produced by detonation of the charges, while providing the amount of force required to sever the structures. According to MMS, restricting the grouping of detonations to eight individual blasts per group and staggering blasts by 0.9 seconds (900 milliseconds) will minimize the area affected by the blasts and suppress phasing of shock waves, thereby decreasing the cumulative effects of the blasts. In addition, since all detonations will occur at least 15 feet below the sediment surface and no more than 50 pounds of explosives per blast will be permitted, the amount of residual energy released into the marine environment should be reduced significantly. As a result, NMFS believes that minimal shock and impulse forces will be released in the vicinity of removal operations at any given time.

To date, of approximately 44 previously conducted consultations covering abandonment activities, about 33 structure removals have been completed. Each removal operation was monitored by NMFS observers and was conducted using appropriate mitigating measures. At the present time, eight turtles have been sighted in areas near structures being dismantled, at least two of which were green turtles. Of the eight documented sightings, one turtle was reported to be floating on it's back near a platform after detonation of Charges, apparently stunned or injured. No other incidents of sea turtle injury or mortality have been reported. Therefore, NMFS believes that the proposed actions are not likely to result in significant adverse impacts to endangered and threatened sea turtle populations.

Conclusions:

Based on the above, it is our opinion that removal of platforms and related structures in the GOM is not likely to jeopardize the continued existence of threatened and endangered species under the jurisdiction of NMFS. However, NMFS concludes that the proposed activities may result in the injury or mortality of loggerhead, Kemp's ridley, green, hawksbill, and leatherback turtles. Therefore, pursuant to Section 7 (b) (4) of the ESA, we have established a low level of incidental take and terms and conditions necessary to minimize and monitor this impact. Compliance with these terms and conditions is the responsibility of MMS and the permit applicant.

Reinitiation Of Consultation:

Consultation must be reinitiated if: 1) the amount or extent of taking specified in the incidental take statement is met or exceeded; 2) new information reveals impacts of the project that may affect listed species in a manner or to an extent not considered in this opinion; 3) the identified activities are modified in a manner that causes an adverse effect on listed species not previously considered; or 4) a new species is listed or critical habitat in designated that may be affected by the proposed activities.

INCIDENTAL TAKE STATEMENT

Section 7(b) (4) of the Endangered Species Act requires that when a proposed agency action is found to be consistent with section 7 (a) (2) of the Act and the proposed actions may incidentally take individuals of listed species, NMFS will issue a statement that specifies the impact (amount or extent) of such incidental taking. Incidental taking by the Federal agency or applicant that complies with the specified terms and conditions of this statement is authorized and exempt from the taking prohibitions of the ESA.

Based on stranding records, incidental captures aboard commercial shrimp vessels and historical data, five species of sea turtles are known to occur in northern Gulf of Mexico waters. Current available information on the relationship between sea turtle mortality and the use of high-velocity explosives to remove oil platforms indicates that injury and/or death of sea turtles may result from the proposed actions. Therefore, pursuant to Section 7 (b) (4) of the ESA, an incidental take (by injury or mortality) level of one documented Kemp's ridley, green, hawksbill or leatherback turtle or ten loggerhead turtles is set for all removal operations conducted under the terms and conditions of this incidental take statement. The level of taking specified here is cumulative for all removals covered by this consultation. If the incidental take meets or exceeds this specified level, MMS must reinitiate consultation. The Southeast Region, NMFS, will cooperate with MMS in the review of the incident to determine the need for developing further mitigation measures.

The reasonable and prudent measures that NMFS believes are necessary to minimize the impact of incidental takings have been discussed with MMS and will be incorporated in the removal design for "standard" structure removals. The following terms and conditions are established for these removals to implement the identified mitigation measures and to document the incidental take should such take occur:

- 1) Qualified observer(s), as approved by NMFS, must be used to monitor the area around the site prior to, during and after detonation of charges. Observer coverage will begin 48 hours prior to detonation of charges. If sea turtles are observed in the vicinity of the platform and thought to be resident at the site, pre- and post- detonation diver surveys must be conducted.

2) On days that blasting operations occur, a 30-minute aerial survey must be conducted within one hour before and one hour after each blasting episode. The NMFS-approved observer and/or NMFS on-site personnel (NMFS employee only) must be used to check for the presence of turtles and, if possible, to identify species. If weather conditions (fog, excessive winds, etc.) make it impossible to conduct aerial surveys, blasting activities may be allowed to proceed if approved by the NMFS and/or MMS personnel on-site.

3) If sea turtles are observed in the vicinity of the platform (within 1000 yards of the site) prior to detonating charges, blasting will be delayed until attempts are successful in removing them at least 1000 yards from the blast site. The aerial survey must be repeated prior to resuming detonation of charges.

4) Detonation of explosives will occur no sooner than 1 hour following sunrise and no later than 1 hour prior to sunset. However, if it is determined by NMFS and/or MMS on-site personnel that special circumstances justify a modification of these time restrictions and that such modification is not likely to adversely impact listed species, blasting may be allowed to proceed outside of this time frame.

5) During all diving operations (working dives as required in the course of the removals), divers will be instructed to scan the subsurface areas surrounding the platform (blasting) sites for turtles and marine mammals. Any sightings must be reported to the NMFS or MMS on-site personnel. Upon completion of blasting, divers must report and attempt to recover any sighted injured or dead sea turtles or marine mammals.

6) Charges must be staggered 0.9 seconds (900 milliseconds) for each group of structures, to minimize the cumulative effects of the blasts. If a removal operation involves multiple groupings of structures, the interval between detonation of charges for each group should be minimized to avoid the "chumming" effect. Whenever such intervals exceed 90-minutes, the aerial survey must be repeated.

7) The use of scare charges should be avoided to minimize the "chumming effect." Use of scare charges may be allowed only if approved by the NMFS and/or MMS on-site personnel.

8) A report summarizing the results of the removal and mitigation measures must be submitted to the MMS Gulf of Mexico Region within 15 working days of the removal. A copy of the report must be forwarded to NMFS, Southeast Region.

This incidental take statement applies only to endangered and threatened sea turtles. In order to allow an incidental take of a marine mammal species, the taking must be authorized under Section 101 (a) (5) of the Marine Mammal Protection Act of 1972. Although interest has been expressed in obtaining an exception authorizing a limited take of dolphins incidental to abandonment activities, no marine mammal take is authorized until appropriate small take regulations are in place and related "Letters of Authorization" are issued.

REFERENCES

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- Renaud, M. and G. Gitschlag, 1987. Study of Biological Impacts of the Explosive Removal of an Offshore Platform (Pennzoil Platform-Vermilion 228A). Unpublished Trip Report to NMFS, SEFC, Galveston Laboratory, 9pp.

<u>#</u>	<u>Operator</u>	<u>Lease Area</u>	<u>Block</u>	<u>Structure</u>
40	Mobil Exploration and Producing Company U.S. Inc. "	Eugene Island Vermilion	354 182	A A
41	Kerr-McGee Corporation	Ship Shoal	296	A
42	Conoco Inc. "	Ship Shoal Vermilion	206 242	A A
43	Mobil Exploration and Producing Company U.S. Inc. "	West Cameron West Cameron	132 101	1 C
44	Tenneco Oil Exploration and Production	East Cameron	255	F
45*	Mobil Exploration and Producing Company U.S. Inc. " " (heliport) Except capped and plugged wells "A" & "B" in Vermilion -76-B	Eugene Island Vermilion "	199 76 "	C B "
46	Mobil Exploration and Producing Company U.S. Inc.	Vermilion	76	1
47	Samaden Oil Corporation	Galveston	241	A
48	Conoco In. " "	Grand Isle " "	63 54 47	A 3 6
49	Mobil Exploration and Producing Company U.S. Inc.	Main Pass	91	2
50	Mobil Exploration and Producing Company U.S. Inc.	South Pelto	12	D
51	Exxon Company " " "	West Delta " " "	30 " 31 "	5 V 1 W
52	Conoco Inc.	West Delta	45	R-1

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53	Mobil Exploration and Producing Company U.S. Inc. "	West Cameron South Marsh	71 235	A 9
54	Tenneco Oil Exploration and Production	Ship Shoal	199	E
56*	Conoco Inc. " "	West Cameron East Cameron S. Marsh, W. Ad.	135 47 261	A D A
Except West Cameron-261-A				
57*	Exxon Company U.S.A. Except High Island East Addition-A342-A	High Is., E. Ad.	A-342	B
58	BHP Petroleum	High Island	A-507	A
59	Mobil Exploration and Producing Company U.S. Inc.	East Cameron	14	5
60	FMP Operating Company	West Cameron	464	A
61	Amoco Production Company	S. Marsh Island	33	A

* Consultations whose numbers include an asterisk (*) did not totally fall under the parameters of this "standard" consultation, therefore, only those removals meeting the parameters are approved and further consultation will be necessary for the exceptions.