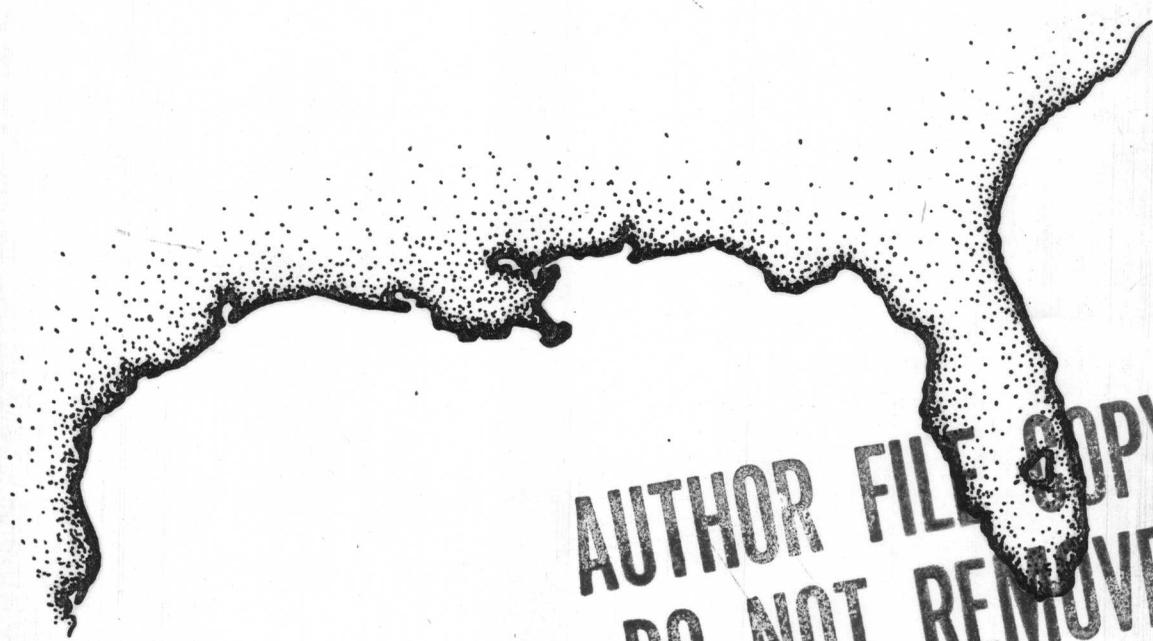


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**PROCEEDINGS OF A WORKSHOP  
ON CETACEANS AND SEA TURTLES IN  
THE GULF OF MEXICO:**

**Study Planning for Effects  
of  
Outer Continental Shelf Development**



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**Minerals Management Service  
Fish and Wildlife Service**

**U.S. Department of the Interior**

DISTRIBUTION OF CETACEANS AND SEA TURTLES IN  
THE GULF OF MEXICO AND NEARBY ATLANTIC WATERS

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The objective of any environmental planning is to avoid or minimize effects on populations. In most cases, effects on individual organisms are tolerated if the overall effect on the population is not significant. Inherent in being able to detect or predict environmental effects on populations is an understanding of the ecology and population structure of the species involved. Such an understanding is often lacking when environmental questions are asked.

A few years ago, had someone forced us to provide an educated guess as to where in the Gulf of Mexico a significant number of sperm whales might come in contact with oil products, we would have had to answer with general comments about the deep areas of the eastern Gulf where most whaling records and incidental sightings had occurred. We would have been ignorant of significant numbers of sperm whales off south Texas and the potential for studying the movements, population structure, and ecology of this species in the western Gulf of Mexico where major oil and gas activities are concentrated.

Similarly, if someone had asked us to identify a major feeding area for the loggerhead turtle, the major concentrations in the eastern Gulf of Mexico might have been given minimal consideration because the area had been poorly studied. However, data at present suggest that the broad shelf and relatively undisturbed areas off southwestern Florida furnish habitat for large numbers of loggerhead and other marine turtles.

In order to gain a better understanding of vertebrate populations in the Gulf of Mexico and adjacent waters of the Atlantic Ocean, the Bureau of Land Management and the Fish and Wildlife Service initiated a study in 1979. The purpose was to study geographic, seasonal, and ecological variation in distribution and abundance. The results, although based on only slightly more than a one-year field period, contribute to our ability to find, evaluate, and understand populations important to the study of oil and gas effects related to leasing of Outer Continental Shelf areas.

## MARINE MAMMALS

Three groups of cetaceans that are primarily restricted to waters deeper than 200 m (sperm whales, beaked whales, and pilot whales) were observed in the western Gulf of Mexico off south Texas. The data on sperm whales and beaked whales were particularly valuable because these groups are poorly known in the Gulf of Mexico. The presence of Risso's dolphin in the western gulf was also noteworthy. Short-finned pilot whales were most common off the Atlantic coast of Florida, but were noted in a narrow zone over waters about 350 m deep off south Texas. The color pattern noted in sightings of short-finned pilot whales may facilitate distinguishing the species from long-finned pilot whales during aerial and shipboard studies. Baleen whales are poorly studied in the Gulf of Mexico.

Many questions remain with regard to small odontocetes. Bottlenose dolphins appear to be distributed at large distances from shore where the Continental Shelf is broad and restricted to narrow coastal bands when the shelf is narrow. In contrast to bottlenose dolphins, the distribution of striped and spotted dolphins (*Stenella* spp.) is less obviously correlated with bathymetry. As an example, both of the *Stenella* species were observed in moderately shallow waters and in greater numbers in the area off southwest Florida than in other areas. Spinner dolphins were also detected and these records amplify the previous distribution based on stranding and meager museum records. The ecology and movements of these and other dolphins are not sufficiently understood to evaluate impacts related to OCS development.

## MARINE TURTLES

The status of our knowledge of marine turtles was formerly based on fisheries data, strandings, and observations made on nesting beaches. The present data augment this knowledge by providing information about their ecology at sea.

More than 97% of all sightings of loggerhead and leatherback turtles were off eastern and western Florida. A paucity of turtles of all species was reported in waters off Louisiana and Texas. The majority of Kemp's ridley turtles was observed off western Florida, but even there the numbers of this endangered turtle were relatively low.

The year-round presence of marine turtles in waters off Florida was conspicuous, suggesting that if winter dormancy occurs, turtles periodically surface, allowing detection. Although the frequency of sightings decreased seasonally, the decrease occurred prior to major lowering of sea surface temperatures and increased prior to the major elevation of sea surface temperatures.

The distribution of loggerhead turtles appeared to be strongly influenced by bathymetry. Loggerheads occurred on the narrow coastal shelf off Cape Canaveral (eastern Florida), but were over 200 km from shore on the broad shelf off southwestern Florida.

Leatherback turtles were also recorded predominantly on the Continental Shelf and only infrequently in deeper waters where previously they were presumed to occur.

## SUMMARY

In summary, the major mammal populations in the south Texas area were forms predominantly distributed off the Continental Shelf. Bottlenose dolphins were present in all areas studied, but their range was strongly linked to bathymetric contours. The numbers of bottlenose dolphins and Stenella (spinner, spotted, and striped) dolphins were relatively high in the area off southwestern Florida. The Atlantic coast of Florida was unique in having right whales and other transient or migrant cetacean species.

The major concentrations of marine turtles were observed in waters off Florida. The area off southwestern Florida is exceptional in having large numbers of turtles and low levels of nesting in relation to eastern Florida. The role of these "feeding" habitats in the recovery or continued decline of marine turtles in continental U.S. waters remains to be studied.

