

## **KILLER WHALE (*Orcinus orca*): Western North Atlantic Stock**

### **STOCK DEFINITION AND GEOGRAPHIC RANGE**

Killer whales are characterized as uncommon or rare in waters of the U.S. Atlantic Exclusive Economic Zone (EEZ) (Katona et al. 1988). The 12 killer whale sightings constituted 0.1% of the 11,156 cetacean sightings in the 1978-81 CeTAP surveys (CeTAP 1982). The same is true for eastern Canadian waters, where the species has been described as relatively uncommon and numerically few (Mitchell and Reeves 1988). Their distribution, however, extends from the Arctic ice-edge to the West Indies. They are normally found in small groups, although 40 animals were reported from the southern Gulf of Maine in September 1979, and 29 animals in Massachusetts Bay in August 1986 (Katona et al. 1988). In the U.S. Atlantic EEZ, while their occurrence is unpredictable, they do occur in fishing areas, perhaps coincident with tuna, in warm seasons (Katona et al. 1988; NMFS unpublished data). In an extensive analysis of historical whaling records, Reeves and Mitchell (1988) plotted the distribution of killer whales in offshore and mid-ocean areas. Their results suggest that the offshore areas need to be considered in present-day distribution, movements, and stock relationships.

Stock definition is unknown. Results from other areas (e.g., the Pacific Northwest and Norway) suggest that social structure and territoriality may be important.

### **POPULATION SIZE**

The total number of killer whales off the eastern U.S. coast is unknown.

#### **Minimum Population Estimate**

Present data are insufficient to calculate a minimum population estimate.

#### **Current Population Trend**

There are insufficient data to determine the population trends for this species.

### **CURRENT AND MAXIMUM NET PRODUCTIVITY RATES**

Current and maximum net productivity rates are not known for this stock. The maximum net productivity rate was assumed to be 0.04 for purposes of this assessment. This value is based on theoretical calculations showing that cetacean populations may not generally grow at rates much greater than 4% given the constraints of their reproductive life history (Anon. 1994).

### **POTENTIAL BIOLOGICAL REMOVAL**

No PBR can be estimated for this species at this time, because the minimum population size cannot be determined.

### **ANNUAL HUMAN-CAUSED MORTALITY**

In 1994, one killer whale was caught in the Gulf of Maine sink gillnet fishery but released alive. No takes were documented in a review of Canadian gillnet and trap fisheries (Read 1994).

#### **Fishery Information**

In 1992, there were approximately 349 vessels (full and part time) in the New England multispecies gillnet fishery (Walden, in review). Observer coverage in trips had been 1%, 6%, 7.5%, and 5% for the years 1990 to 1993. The fishery has been observed in the Gulf of Maine and in southern New England. Though the data have not been analyzed, the fishery in 1994 (the only year with by-catch) is probably similar to that in the past.

Because there are no observed mortalities or serious injury between 1990 and 1993, the total fishery-related mortality and serious injury for this stock is considered insignificant and approaching zero mortality and serious injury rate. This determination cannot be made for specific fisheries until the implementing regulations for Section 118 of the MMPA have been reviewed by the public and finalized.

## STATUS OF STOCK

The status of killer whales relative to OSP in U.S. Atlantic coast waters is unknown. The species is not listed as threatened or endangered under the Endangered Species Act. In Canada, the Cetacean Protection Regulations of 1982, promulgated under the standing Fisheries Act, prohibit the catching or harassment of all cetacean species. There are insufficient data to determine the population trends for this species. This is not a strategic stock because, although PBR could not be calculated, there is no evidence of human-induced mortality.

## REFERENCES

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