MINKE WHALE (*Balaenoptera acutorostrata*): Alaska Stock

STOCK DEFINITION AND GEOGRAPHIC RANGE:

In the North Pacific, minke whales occur from the Bering and Chukchi Seas south to near the equator (Leatherwood et al. 1982). The following information was considered in classifying stock structure according to the Dizon et al. (1992) phylogeographic approach: 1) Distributional data: geographic distribution continuous, 2) Population response data: unknown; 3) Phenotypic data: unknown; and 4) Genotypic data: unknown. Based on this limited information, the International Whaling Commission (IWC) recognizes 3 stocks of minke whales in the North Pacific: one in the Sea of Japan/East China Sea, one in the rest of the western Pacific west of 180ºN, and one in the "remainder" of the Pacific (Donovan 1991). The "remainder" stock designation reflects the lack of exploitation in the eastern Pacific and does not indicate that only one population exists in this area (Donovan 1991). In the "remainder" area, minke whales are relatively common in the Bering and Chukchi Seas and in the inshore waters of the Gulf of Alaska (Mizroch 1992), but are not considered abundant in any other part of the eastern Pacific (Leatherwood et al. 1982, Brueggeman et al. 1990). Minke whales are known to penetrate loose ice during the summer, and some individuals venture north of the Bering Strait (Leatherwood et al. 1982). In the northern part of their range minke whales are believed to be migratory, whereas they appear to establish home ranges in the inland waters of Washington and along central California (Dorsey et al. 1990). Because the "resident" minke whales from California to Washington appear behaviorally distinct from migratory whales farther north, minke whales in Alaska are considered a separate stock from minke whales in California, Oregon, and Washington. Accordingly, two stocks of minke whales are recognized in U. S. waters: 1) Alaska, and 2) California/ Washington/Oregon (Fig. 34). The California/Oregon/Washington minke whale stock is reported separately in the Stock Assessment Reports for the Pacific Region.

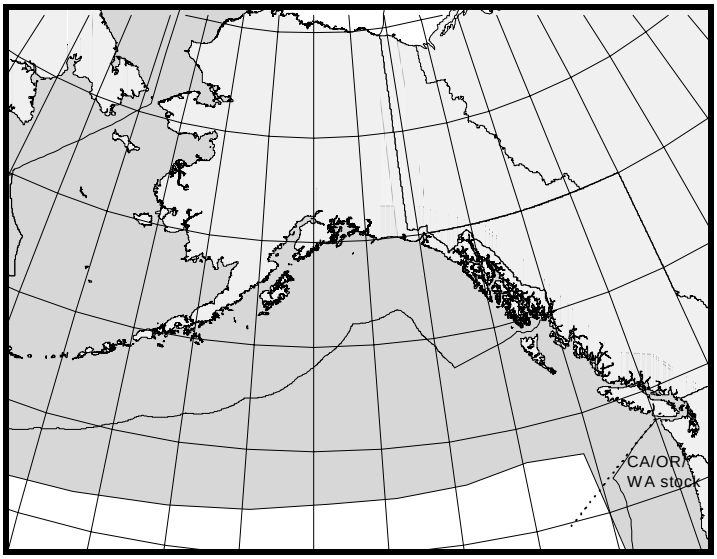

Figure 34. Approximate distribution of minke whales in the eastern North Pacific (shaded area).

POPULATION SIZE

No estimates have been made for the number of minke whales in the entire North Pacific nor are estimates available for the number of minke whales that occur within the waters of Alaska.

Minimum Population

At this time, it is not possible to produce a reliable estimate of minimum abundance for this stock, as current estimates of abundance are not available.

Current Population Trend

There are no data on trends in minke whale abundance in Alaska waters.

CURRENT AND MAXIMUM NET PRODUCTIVITY RATES

There are no estimates of the growth rate of minke whale populations in the North Pacific (Best 1993). Hence, until additional data become available, it is recommended that the cetacean maximum net productivity rate (R_{MAX}) of 4% be employed for this stock (Wade and Angliss 1997).

POTENTIAL BIOLOGICAL REMOVAL

The potential biological removal (PBR) for this stock is calculated as the product of minimum population size, 0.5 maximum net productivity, and a recovery factor. Given the status of this stock is unknown, the appropriate recovery factor is 0.5 (Wade and Angliss 1997). However, because an estimate of minimum abundance is not available, it is not possible to estimate a PBR for the Alaska minke whale stock at this time.

ANNUAL HUMAN-CAUSED MORTALITY

Fishery Information

Six different commercial fisheries operating in Alaska waters within the range of the Alaska minke whale stock were monitored for incidental take by NMFS observers during 1990-95: Bering Sea (and Aleutian Islands) groundfish trawl, longline, and pot fisheries, and Gulf of Alaska groundfish trawl, longline, and pot fisheries. No minke whale mortalities were observed for any of these fisheries. In 1989, one minke whale mortality (extrapolated to 2 mortalities) was observed in the Bering Sea/Gulf of Alaska joint-venture groundfish trawl fishery, the predecessor to the current Alaska groundfish trawl fishery.

In the past, minke whales have been caught in both coastal set gillnets and offshore drift gillnets (Small and DeMaster 1995). However, based on logbook reports maintained by vessel operators required by the MMPA interim exemption program during the 4-year period between 1990 and 1993, no injuries or mortalities of minke whales from interactions with commercial gear were reported for any Alaska fishery. Complete logbook data after 1993 are not available.

The estimated annual mortality rate incidental to commercial fisheries is zero. Therefore, the annual human-caused mortality level is considered to be insignificant and approaching a zero mortality and serious injury rate.

Subsistence/Native Harvest Information

No minke whales were ever taken by the modern shore-based whale fishery in the eastern North Pacific which lasted from 1905 to 1971 (Rice 1974). Subsistence takes of minke whales by Alaska Natives are rare, but have been known to occur. Only seven minke whales are reported the have been taken for subsistence by Alaska Natives between 1930 and 1987 (C. Allison, pers. comm., International Whaling Commission, The Red House, Station Road, Histon, Cambridge, UK). The most recent harvest (2 whales) in Alaska occurred in 1989 (RIWC 1991). Based on this information, the annual subsistence take averaged zero minke whales during the 3-year period from 1993 to 1995.

STATUS OF STOCK

Minke whales are not listed as “depleted” under the MMPA or listed as “threatened” or “endangered” under the Endangered Species Act. The greatest uncertainty regarding the status of the Alaska minke whale stock has to do with the uncertainty pertaining to the stock structure of this species in the eastern North Pacific. Because minke whales are considered common in the waters off Alaska and because the number of human-related removals is currently thought to be minimal, this stock is not considered a strategic stock. Reliable estimates of the minimum population size, population trends, PBR, and status of the stock relative to OSP are currently not available.

REFERENCES

Anon. 1991. International Whaling Commission Report. Rep. Int. Whal. Commn. 41: 1-2.

Best, P. B. 1993. Increase rates in severely depleted stocks of baleen whales. ICES J. Mar. Sci. 50:169-186.

Brueggeman, J. J., G. A. Green, K. C. Balcomb, C. E. Bowlby, R. A. Grotefendt, K. T. Briggs, M. L. Bonnell, R. G. Ford, D. H. Varoujean, D. Heinemann, and D. G. Chapman. 1990. Oregon-Washington marine mammal and seabird survey: Information synthesis and hypothesis formulation. U.S. Dep. Interior, Outer Continental Shelf Study, Minerals Management Service 89-0030.

Dizon, A. E., C. Lockyer, W. F. Perrin, D. P. DeMaster, and J. Sisson. 1992. Rethinking the stock concept: a phylogeographic approach. Conserv. Biol. 6:24-36.

Donovan, G. P. 1991. A review of IWC stock boundaries. Rept. Int. Whal. Commn. (Special Issue 13):39-68.

Dorsey, E. M., S. J. Stern, A. R. Hoelzel, and J. Jacobsen. 1990. Minke whale (*Balaenoptera acutorostrata*) from the west coast of North America: individual recognition and small scale site fidelity. Rept. Int. Whal. Commn. (Special Issue 12):357-368.

Leatherwood, S., R. R. Reeves, W. F. Perrin, and W. E. Evans. 1982. Whales, dolphins, and porpoises of the eastern North Pacific and adjacent Arctic waters: A guide to their identification. U.S. Dep. Commer., NOAA Tech. Rept. NMFS Circular 444. 245 pp.

Mizroch, S. A. 1992. Distribution of minke whales in the North Pacific based on sightings and catch data. Unpubl. doc. submitted to the Int. Whal. Commn. (SC/43/Mi36). 37 pp.

Rice, D. W. 1974. Whales and whale research in the eastern North Pacific. Pp. 170-195, *In* W. E. Schevill (ed.), The whale problem: A status report. Harvard Press, Cambridge, MA.

Small, R. J., and D. P. DeMaster. 1995. Alaska marine mammal stock assessments 1995. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-AFSC-57, 93 pp.

Wade, P. R., and R. Angliss. 1997. Guidelines for assessing marine mammal stocks: report of the GAMMS workshop April 3-5, 1996, Seattle, Washington. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-OPR-12, 93 pp.