

CUVIER'S BEAKED WHALE (*Ziphius cavirostris*): Alaska Stock

STOCK DEFINITION AND GEOGRAPHIC RANGE

The distribution of Cuvier's beaked, or goosebeak, whale (Fig. 33) is known primarily from strandings, which indicate that it is the most widespread of the beaked whales and is distributed in all oceans and most seas except in the high polar waters (Moore 1963). In the Pacific, they range north to the northern Gulf of Alaska, the Aleutian Islands, and the Commander Islands (Rice 1986, 1998). In the northeastern Pacific from Alaska to Baja California, no obvious pattern of seasonality to strandings has been identified (Mitchell 1968). Strandings of Cuvier's beaked whales are the most numerous of all beaked whales, indicating that they are probably not as rare as originally thought (Heyning 1989). Observations reveal that the blow is low, diffuse, and directed forward (Backus and Schevill 1961, Norris and Prescott 1961), making sightings more difficult, and there is some evidence that they avoid vessels by diving (Heyning 1989).

Mitchell (1968) examined skulls of stranded whales for geographical differences

and thought that there was probably one panmictic population in the northeastern Pacific. Otherwise, there are insufficient data to apply the phylogeographic approach to stock structure (Dizon et al. 1992) for the Cuvier's beaked whale. Therefore, Cuvier's beaked whale stocks are defined as the three non-contiguous areas within Pacific U. S. waters where they are found: 1) Alaska, 2) California/Oregon/Washington, and 3) Hawaii. These three stocks were defined in this way because of: 1) the large distance between the areas in conjunction with the lack of any information about whether animals move between the three areas, 2) the different oceanographic habitats found in the three areas, and 3) the different fisheries that operate within portions of those three areas, with bycatch of Cuvier's beaked whales only reported from the California/Oregon thresher shark and swordfish drift gillnet fishery. The California/Oregon/Washington and Hawaiian Baird's beaked whale stocks are reported separately in the Stock Assessment Reports for the Pacific Region.

POPULATION SIZE

Reliable estimates of abundance for this stock are currently unavailable.

Minimum Population Estimate

At this time, it is not possible to produce a reliable minimum population estimate (N_{MIN}) for this stock, as current estimates of abundance are unavailable.

Current Population Trend

At present, reliable data on trends in population abundance are unavailable.

CURRENT AND MAXIMUM NET PRODUCTIVITY RATES

A reliable estimate of the maximum net productivity rate is currently unavailable for the Alaska stock of Cuvier's beaked whale. Hence, until additional data become available, it is recommended that the cetacean maximum theoretical net productivity rate (R_{MAX}) of 4% be employed (Wade and Angliss 1997).

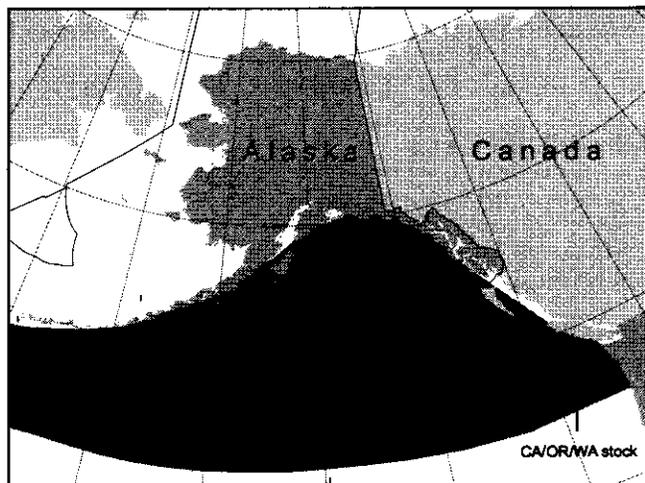


Figure 33. Approximate distribution of Cuvier's beaked whales in the eastern North Pacific (shaded area). Sightings (circles) and strandings (squares) within the last 10 years are also depicted (Forney and Brownell 1996, NMFS unpublished data).

POTENTIAL BIOLOGICAL REMOVAL

Under the 1994 reauthorized Marine Mammal Protection Act (MMPA), the potential biological removal (PBR) is defined as the product of the minimum population estimate, one-half the maximum theoretical net productivity rate, and a recovery factor: $PBR = N_{MIN} \times 0.5R_{MAX} \times F_R$. The recovery factor (F_R) for this stock is 0.5, the value for cetacean stocks with unknown population status (Wade and Angliss 1997). However, in the absence of a reliable estimate of minimum abundance, the PBR for this stock is unknown.

ANNUAL HUMAN-CAUSED MORTALITY AND SERIOUS INJURY

Fisheries Information

Six different commercial fisheries operating within the range of the Alaska stock of Cuvier's beaked whale were monitored for incidental take by fishery observers from 1990 to 2002: Bering Sea (and Aleutian Islands) groundfish trawl, longline, and pot fisheries and Gulf of Alaska groundfish trawl, longline, and pot fisheries. No Cuvier's beaked whale mortalities were observed. The estimated annual mortality rate incidental to commercial fisheries is zero.

Subsistence/Native Harvest Information

There is no known subsistence harvest of Cuvier's beaked whales.

STATUS OF STOCK

Cuvier's beaked whales are not listed as "depleted" under the MMPA or listed as "threatened" or "endangered" under the Endangered Species Act. Reliable estimates of the minimum population, population trends, PBR, and status of the stock relative to its Optimum Sustainable Population size are currently not available. Because the PBR is unknown, the level of annual U.S. commercial fishery-related mortality that can be considered insignificant and approaching zero mortality and serious injury rate is unknown. However, the estimated annual rate of human-caused mortality and serious injury seems minimal for this stock. Thus, the Alaska stock of Cuvier's beaked whale is not classified as strategic.

Habitat concerns

Disturbance by anthropogenic noise may prove to be an important habitat issue in some areas of this population's range, notably in areas of oil and gas activities or where shipping or naval activities are high.

CITATIONS

- Backus, R. H., and W. E. Schevill. 1961. The stranding of a Cuvier's beaked whale (*Ziphius cavirostris*) in Rhode Island, USA. *Norsk Hval*. 50:177-181.
- 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.
- Forney, K. A., and R. L. Brownell. 1996. Preliminary report of the 1994 Aleutian Island marine mammal survey. Unpubl. doc. submitted to *Int. Whal. Comm. (SC/48/O11)*. 15 pp.
- Heyning, J. E. 1989. Cuvier's beaked whale - *Ziphius cavirostris* G. Cuvier, 1823. Pp. 289-308 *In* S. H. Ridgway and R. Harrison (eds.), *Handbook of marine mammals: River dolphins and the larger toothed whales*. Academic Press, New York.
- Mitchell, E. 1968. Northeast Pacific stranding distribution and seasonality of Cuvier's beaked whale, *Ziphius cavirostris*. *Can. J. Zool.* 46:265-279.
- Moore, J. C. 1963. The goose-beaked whale, where in the world? *Bull. Chicago Nat. Hist. Mus.* 34:2-3, 8.
- Norris, K. S., and J. H. Prescott. 1961. Observations on Pacific cetaceans of California and Mexican waters. *Univ. Calif. Pub. Zool.* 63:291-370.
- Rice, D. W. 1986. Beaked whales. Pp. 102-109 *In* D. Haley (ed.), *Marine mammals of the eastern North Pacific and Arctic waters*. Pacific Search Press, Seattle.
- Rice, D. W. 1998. *Marine mammals of the world: Systematics and distribution*. The Society for Marine Mammalogy, Special pub. 4, Allen Press, Lawrence, KS, 231 pp.
- Wade, P. R., and R. Angliss. 1997. Guidelines for assessing marine mammal stocks: report of the GAMMS workshop April 3-5, 1996, Seattle, WA. U.S. Dep. Commer., NOAA Tech. Memo. NMFS-OPR-12, 93 pp.