Revised 12/15/2000

RISSO'S DOLPHIN (*Grampus griseus*): Hawaiian Stock

STOCK DEFINITION AND GEOGRAPHIC RANGE

Risso's dolphins are found in tropical to warm-temperate waters worldwide (Kruse et al. 1999). They appear to be rare in Hawaiian waters (Figure 1). Of three reported sightings of this species by Shallenberger (1981), only one was verified. There are four stranding records from the main islands (Nitta 1991). Balcomb (1987) referred to a sighting of a large herd off the Kona Coast in February 1985. For the Marine Mammal Protection Act (MMPA) stock assessment reports, Risso's dolphins within the Pacific U.S. Exclusive Economic Zone are divided into two discrete, non-contiguous areas: 1) Hawaiian waters (this report), and 2) waters off California, Oregon and Washington.

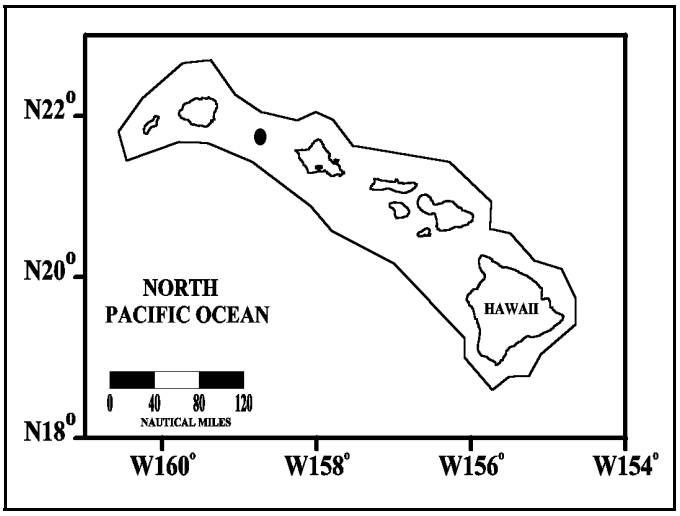

Figure 1. Sighting location for the single Risso's dolphin seen during 1993-98 aerial surveys within about 25 nmi of the main Hawaiian Islands (see Appendix 2 for details on timing and location of survey effort). Outer line indicates approximate boundary of survey area.

POPULATION SIZE

Population estimates have been made off Japan (Miyashita 1993) and in the eastern tropical Pacific (Wade and Gerrodette 1993), but it is not known whether these animals are part of the same population that occurs around the Hawaiian Islands. As part of the Marine Mammal Research Program of the Acoustic Thermometry of Ocean Climate (ATOC) study, a total of twelve aerial surveys were conducted within about 25 nmi of the main Hawaiian Islands in 1993, 1995 and 1998 (Mobley et al. 2000). Only one sighting of a single Risso's dolphin was made, and therefore no meaningful abundance estimate could be calculated. Based on the locations of interactions with the Hawaiian longline fishery (Figure 2), it is likely that Risso's dolphins primarily occur in pelagic waters tens to hundreds of miles from the main Hawaiian islands and are only occasionally found nearshore.

Minimum Population Estimate

No data are available for a minimum population estimate.

Current Population Trend

No data are available on current population trend.

CURRENT AND MAXIMUM NET PRODUCTIVITY RATES

No data are available on current or maximum net productivity rate for Hawaiian animals.

POTENTIAL BIOLOGICAL REMOVAL

No PBR can be calculated for this species at this time.

HUMAN CAUSED MORTALITY AND SERIOUS INJURY

Fishery Information

No estimate of annual human-caused mortality and serious injury is available as there are no reports of direct or incidental takes of Risso's dolphins in Hawaiian waters. However, mortality of other cetacean species has been observed in Hawaiian fisheries, and the gear types used in these fisheries are responsible for marine mammal mortality and serious injury in other fisheries throughout U.S. waters. Gillnets are used in Hawaiian waters and appear to capture marine mammals wherever they are used, and float lines from lobster traps and longlines can be expected to occasionally entangle whales (Perrin et al. 1994).

Interactions with cetaceans have been reported for all Hawaiian pelagic fisheries (Nitta and Henderson 1993), and some of these interactions involved Risso's dolphins in waters outside the U.S. EEZ. Four Risso's dolphins were observed hooked in the Hawaiian longline fishery between 1994 and 1998, with approximately 4.4% of all effort (measured as the number of hooks fished) observed. This interaction rate extrapolates to a total 5-year estimate of 90 (95% CI = 27-213) Risso's dolphins, or an average of 18 per year (Kleiber 1999). Three of the observed Risso's dolphins were reported to have been hooked in the mouth or to have ingested the hook, and they were released with hook and line still attached. Following the guidelines of a 1997 Serious Injury Workshop (Angliss and DeMaster 1998), these three animals have been considered seriously injured (defined under the MMPA as likely to result in mortality). The fourth animal was hooked in an unknown location and swam normally, but was released with 20m of trailing line and a light stick. Because a substantial length of line was still attached when the animal was released, this animal is likely to have sustained serious injury. Reports for other odontocetes indicate they may also become hooked in other parts of their body, and that they may occasionally become entangled in the fishing line.

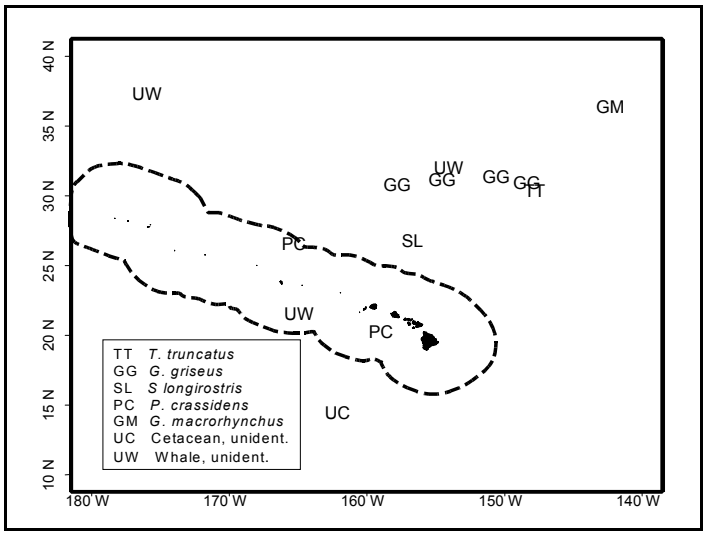

Figure 2. Locations of observed cetacean interactions in the Hawaiian longline fishery, 1994-98 (modified from Kleiber 1999). Dashed line is the U.S. Exclusive Economic Zone (EEZ); GG = Risso's dolphin.

Interaction rates between dolphins and the NWHI bottomfish fishery have been estimated based on studies conducted in 1990-1993, indicating that an average of 2.67 dolphin interactions, most likely involving bottlenose and rough-toothed dolphins, occurred for every 1000 fish brought on board (Kobayashi and Kawamoto 1995). Fishermen claim interactions with dolphins who steal bait and catch are increasing. It is not known whether these interactions result in serious injury or mortality of dolphins, nor whether Risso's dolphins are involved.

STATUS OF STOCK

The status of Risso's dolphins in Hawaiian waters relative to OSP is unknown, and there are insufficient data to evaluate trends in abundance. No habitat issues are known to be of concern for this species. They are not listed as "threatened" or "endangered" under the Endangered Species Act (1973), nor as "depleted" under the MMPA. Although information on Risso's dolphins in Hawaiian waters is limited, this stock would not be considered strategic under the 1994 amendments to the MMPA given the absence of reported fisheries related mortality within the U.S. EEZ and the species' apparent offshore distribution. The potential effect of injuries sustained by Risso's dolphins in the Hawaiian longline fishery in international waters is not known. Insufficient information is available to determine whether the total fishery mortality and serious injury for Risso's dolphins is insignificant and approaching zero mortality and serious injury rate.

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