

## FRASER'S DOLPHIN (*Lagenodelphis hosei*): Hawaiian Stock

### STOCK DEFINITION AND GEOGRAPHIC RANGE

Fraser's dolphins are distributed worldwide in tropical waters (Perrin et al. 1994b). They have only recently been documented within the U.S. Exclusive Economic Zone (EEZ) of the Hawaiian Islands, during a 2002 cetacean survey (Barlow 2003, Figure 1). No strandings of Fraser's dolphins have been documented in the Hawaiian Islands (Nitta 1991; Maldini 2005). For the Marine Mammal Protection Act (MMPA) stock assessment reports, there is a single Pacific management stock including only animals found within the U.S. EEZ of the Hawaiian Islands.

### POPULATION SIZE

Population estimates for Fraser's dolphins have been made 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 and in the central North Pacific. No sightings of this species were made during twelve aerial surveys, conducted as part of the Marine Mammal Research Program of the Acoustic Thermometry of Ocean Climate (ATOC) study, within about 25 nmi of the main Hawaiian Islands in 1993, 1995 and 1998 (Mobley et al. 2000). A 2002 shipboard line-transect survey of the entire Hawaiian Islands EEZ resulted in an abundance estimate of 16,836 (CV=1.11) Fraser's dolphins (Barlow 2003). This is currently the best available abundance estimate for this stock.

### Minimum Population Estimate

The log-normal 20th percentile of the 2002 abundance estimate is 7,917 Fraser's dolphins.

### Current Population Trend

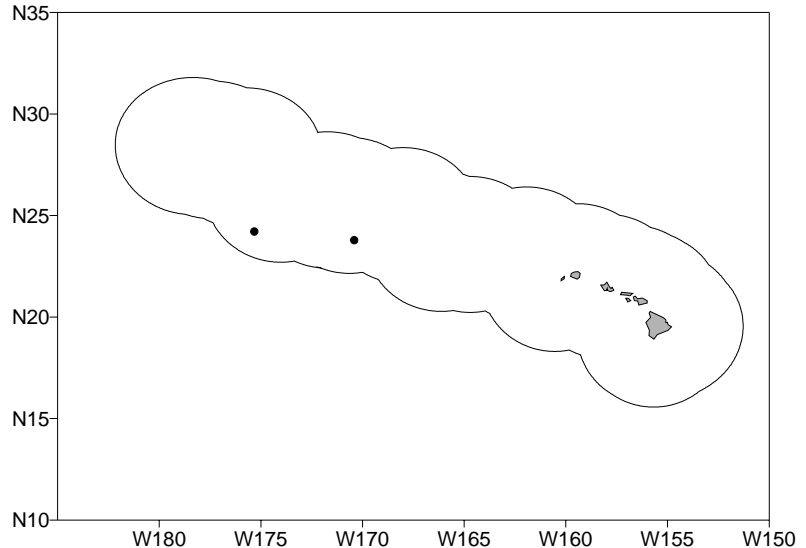
No data are available on current population trend.

### CURRENT AND MAXIMUM NET PRODUCTIVITY RATES

No data are available on current or maximum net productivity rate for the Hawaiian stock of Fraser's dolphin.

### POTENTIAL BIOLOGICAL REMOVAL

The potential biological removal (PBR) level for this stock of Fraser's dolphin is calculated as the minimum population size (7,917) times one half the default maximum net growth rate for cetaceans ( $\frac{1}{2}$  of 4%) times a recovery factor of 0.50 (for a stock of unknown status with no known fishery mortality or serious injury within the Hawaiian Islands EEZ; Wade and Angliss 1997), resulting in a PBR of 79 Fraser's dolphins per year.



**Figure 1.** Fraser's dolphin sighting locations during the 2002 shipboard cetacean survey of U.S. waters surrounding the Hawaiian Islands (Barlow 2003; see Appendix 2 for details on timing and location of survey effort). Outer line indicates approximate boundary of survey area and U.S. EEZ.

## HUMAN CAUSED MORTALITY AND SERIOUS INJURY

### Fishery Information

Information on fishery-related mortality and serious injury of cetaceans in Hawaiian waters is limited, but the gear types used in Hawaiian fisheries are responsible for marine mammal mortality and serious injury in other fisheries throughout U.S. waters. Gillnets 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. 1994a). Interactions with cetaceans have been reported for all Hawaiian pelagic fisheries (Nitta and Henderson 1993), but none of these interactions are known to have involved Fraser's dolphins. None were observed hooked or entangled in the Hawaii-based longline fishery between 1994 and 2002, with approximately 4-25% of all effort observed (Forney 2004). 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 Fraser's dolphins are involved.

### STATUS OF STOCK

The status of Fraser'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. The Hawaiian stock of Fraser's dolphins is not considered strategic under the 1994 amendments to the MMPA, because there has been no reported fisheries related mortality or serious injury within the U.S. EEZ of the Hawaiian Islands. Insufficient information is available to determine whether the total fishery mortality and serious injury for Fraser's dolphins is insignificant and approaching zero mortality and serious injury rate.

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