

An Observed Entanglement of *Lagenorhynchus obliquidens* in the High Seas Driftnet Area in the North Pacific

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Introduction

In 1978, the Japanese High Seas Squid Driftnet Fishery began in the

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ABSTRACT—In August, 1991, an entanglement event was observed in the High Seas Driftnet area in the North Pacific. This description of an entanglement of *Lagenorhynchus obliquidens* is the first such documented report of dolphins entangling while bowriding. One of the entangled dolphins was rescued from the driftnet.

North Pacific, and in 1979 and 1980, the Republic of Korea and Taiwan began their own driftnet fisheries in the same region (Yatsu et al., 1993). The High Seas Squid Driftnet Fishery expanded rapidly in the 1980's, and concern grew that bycatch from this fishery was having a large impact on populations of marine mammals, birds, and salmon (Hobbs and Jones (1993) provide an overview of the fishery). In 1991, due to concern about bycatch, the United Nations General Assembly adopted a resolution which called for a ban on high-seas driftnet fishing effective 31 December 1992.

In 1991, the National Marine Mammal Laboratory of the NMFS Alaska Fisheries Science Center initiated a multidisciplinary research cruise to

study the distribution and density of bycatch species taken in the High Seas Squid Driftnet Fisheries. A series of studies on oceanographic conditions, fish, seabirds, and marine mammals was undertaken on the R/V *Acania*, a 126-ft (38.2 m) chartered vessel. The cruise consisted of three separate legs, beginning in Homer, Alaska, on 7 July and ending in Honolulu, Hawaii, on 6 September. Major areas surveyed were between lat. 40°–45°N and long. 155°–170°W on Leg 1, and lat. 43°–45°N and long. 175°W–175°E on Legs 2 and 3.

Line transect data on marine mammal distribution were collected in conjunction with fish, seabird, and oceanographic studies. Gear used included an Isaacs-Kidd midwater trawl net, bongo net, Conductivity-Temperature-Depth

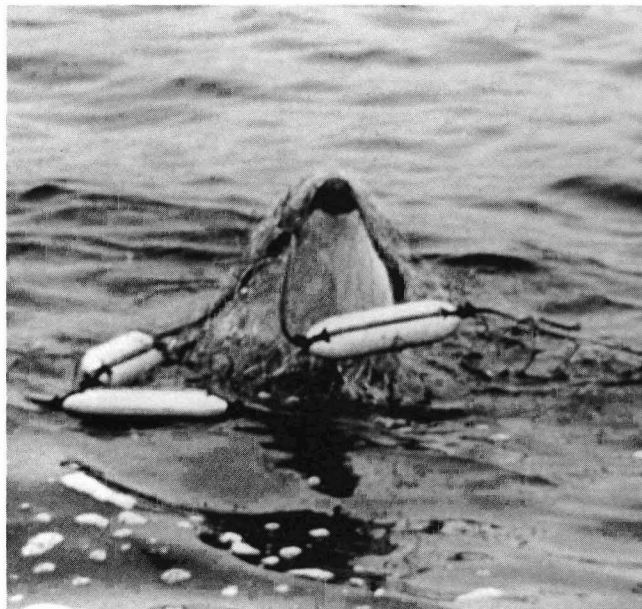


Figure 1.—Entangled *Lagenorhynchus obliquidens* lifting its head and blowhole above the water to breathe. Photographs taken by S. Mizroch, 15 August 1991, at lat. 44°21.3'N, long. 177°45.0'W.

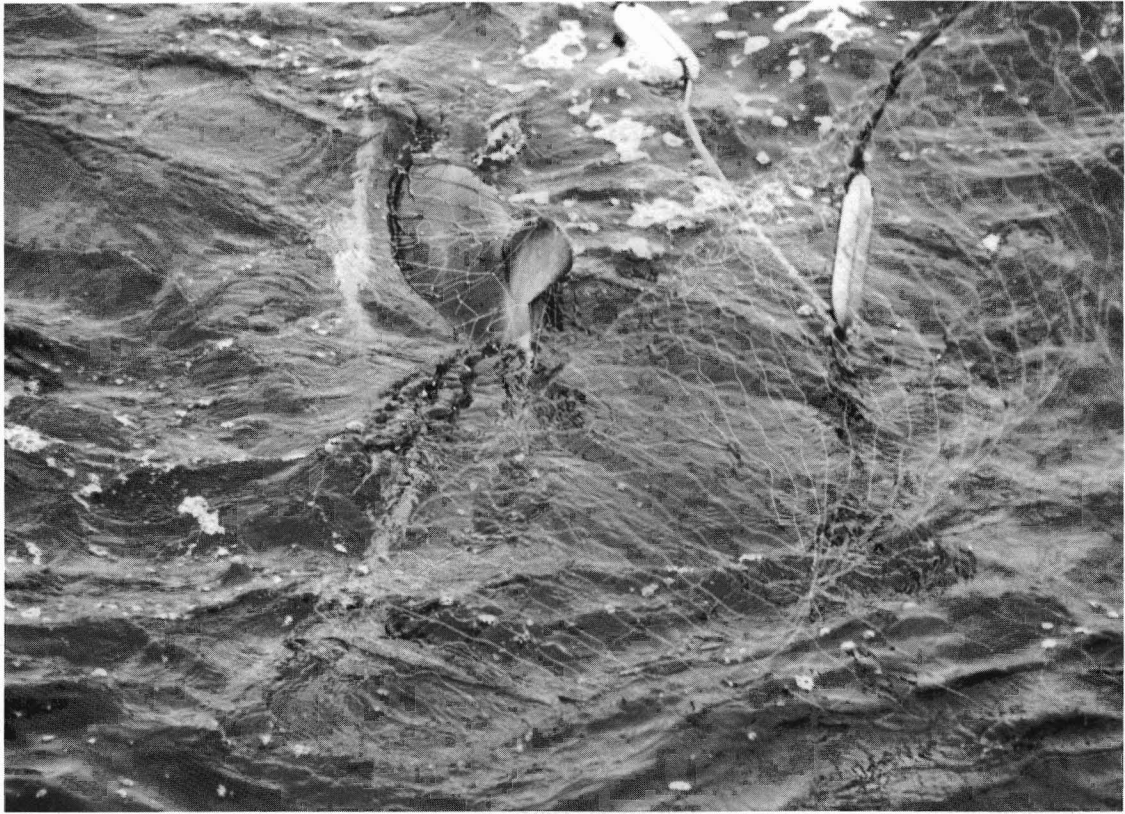




Figure 2.—(Facing pages) A series of photographs of a *Lagenorhynchus obliquidens* entangled in a driftnet. Note the cut on the trailing edge of the dorsal fin in the photograph on the bottom right. Photographs taken by S. Mizroch, 15 August 1991, at lat. 44°21.3'N, long. 177°45.0'W.



(CTD) probes, Expendable Bathythermograph (XBT), and a sea surface temperature recorder. Because the studies were conducted in the High Seas Drift-net Fishery area during the fishing season, before setting our daily north-south transect lines, we would observe the nets being set on east-west lines the night before, and would lay out north-south transect lines to avoid crossing any net lines.

Observations

On 15 August 1991, at 0923 h, lat. 44°21.3'N, long. 177°45.0'W, while on a standard line transect watch, a large mixed group of *Lagenorhynchus obliquidens* and *Lissodelphis borealis* was spotted at a distance of about 900 m. The group included about 200 *L. obliquidens* and 60 *L. borealis*.

As the vessel's cruise track headed in the direction of the large group, small groups of *L. obliquidens* arrived at the bow on both sides of the vessel, with about four or five individuals bowriding at a time. Groups of two or three were approaching along the sides. At 0933 h, while Hutchinson was on watch, the boat crossed a driftnet with about six *L. obliquidens* bowriding. As soon as the boat crossed the net, all but one bowriding dolphin dropped out of sight. It seemed possible at the time that some of the bowriding animals could have become entangled in the net.

When the vessel turned and we arrived at the location of the break in the net at 1000 h, we saw no free-swimming dolphins in the area, but we did see one entangled animal poke its head up to breathe (Fig. 1). The crew lifted the net with long poles that had hooks on one end. The plan was to bring the animal

aboard to disentangle it. However, as the net was lifted, the animal was able to twist and turn and free itself. The entire disentanglement effort took less than 5 minutes. There was some blood on the animal from net cuts (Fig. 2), but the animal seemed vigorous when freed from the net, and left with no netting attached.

After the animal was released, we remained in the area of the break to see if any other animals were entangled and took above-water videotape of the driftnet on both sides of the break. We were unable to examine the entire net which was being actively fished at the time.

Upon later review of the videotape taken while we searched for other entangled dolphins, we noticed dips in the net's corkline that may have indicated as many as two other entangled dolphins, although there were no signs of movement in either of these areas. The dips could have also indicated some other nonmammal catch.

Kasuya and Miyazaki (1976) report epimeletic behavior in *L. obliquidens*, when they observed a carcass that was held afloat through the actions of at least one, and perhaps two other *L. obliquidens*. The animal remained by the carcass until the carcass was hooked by the research vessel, at which time the *L. obliquidens* swam away. Based on decomposition of the carcass, they surmised that the animal may have died the preceding day, but they did not know whether the carcass had been accompanied since death or was found by the other *L. obliquidens* after death.

Weinrich (1996) observed an entanglement of *Lagenorhynchus acutus* in the North Atlantic, and noted that the

nonentangled dolphins left the area immediately, with no attempt to aid the entangled one (i.e. no evidence at all of epimeletic behavior).

It is unknown whether and how often *Lagenorhynchus* will exhibit epimeletic behavior during interactions with fishing gear. In the case described here and in Weinrich (1996), it appeared that the free-swimming accompanying dolphins did not remain in the area to provide aid to the animal that was entangled in the net. In Kasuya and Miyazaki (1976), the *L. obliquidens* that had been observed accompanying the carcass left as soon as humans intervened.

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