

Risso's Dolphin

Grampus griseus

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I. Characteristics and Taxonomy

Risso's dolphin (*Grampus griseus*) is the fifth largest member of the family Delphinidae, with adults of both sexes reaching up to about 4 m in length (Fig. 1). The common name comes from the person (M. Risso) who described the type specimen to G. Cuvier in 1812. Risso's dolphins are unusual looking for a variety of reasons. Their anterior body is extremely robust, tapering to a relatively narrow tail stock, and they have one of the tallest dorsal fins in proportion to body length of any cetacean (Fig. 2). The bulbous head has a distinct vertical crease or cleft along the anterior surface of the melon. Color patterns change dramatically with age. Infants are gray to brown dorsally and creamy-white ventrally, with a white anchor-shaped patch between the pectoral flippers and white around the mouth. Calves then darken to nearly black, while retaining the ventral white patch. As they mature they lighten (except for the dorsal fin, which remains dark in adults in most populations), and the majority of the dorsal and the lateral surfaces of the body become covered with distinctive linear scars, most of which are presumably caused by intraspecific interactions. Older animals can appear almost completely white on the dorsal surface or when swimming just beneath the surface. No evidence of sexual dimorphism has been reported. From a distance Risso's dolphins are most frequently confused with killer whales (*Orcinus orca*) due to the large size of their dorsal fin.

Dentition is unusual, with most individuals having no teeth in the upper jaw and only a small number (two to seven pairs) in the lower jaw. Based on genetic similarity, Risso's dolphins are most closely related to false killer whales (*Pseudorca crassidens*), melon-headed

whales (*Peponocephala electra*), pygmy killer whales (*Feresa attenuata*), and pilot whales (*Globicephala* spp.). No subspecies are currently recognized.

II. Distribution and Abundance

Risso's dolphins are distributed worldwide in temperate and tropical oceans, with an apparent preference for steep shelf-edge habitats between about 400- and 1000-m deep. In the North Pacific they can be found as far north as the Gulf of Alaska and the Kamtchatka Peninsula, in the South Pacific to Tierra del Fuego and New Zealand. In the North Atlantic they have been documented as far north as southern Greenland and southern Norway. They are found throughout the Mediterranean and the Indian Ocean. No worldwide population estimates exist, although a number of regional estimates



Figure 2 The Risso's dolphin has one of the tallest dorsal fins in relation to body size of any cetacean. Linear scars on Risso's dolphins can often cover the majority of the body surface. Photo © Annie B. Douglas.

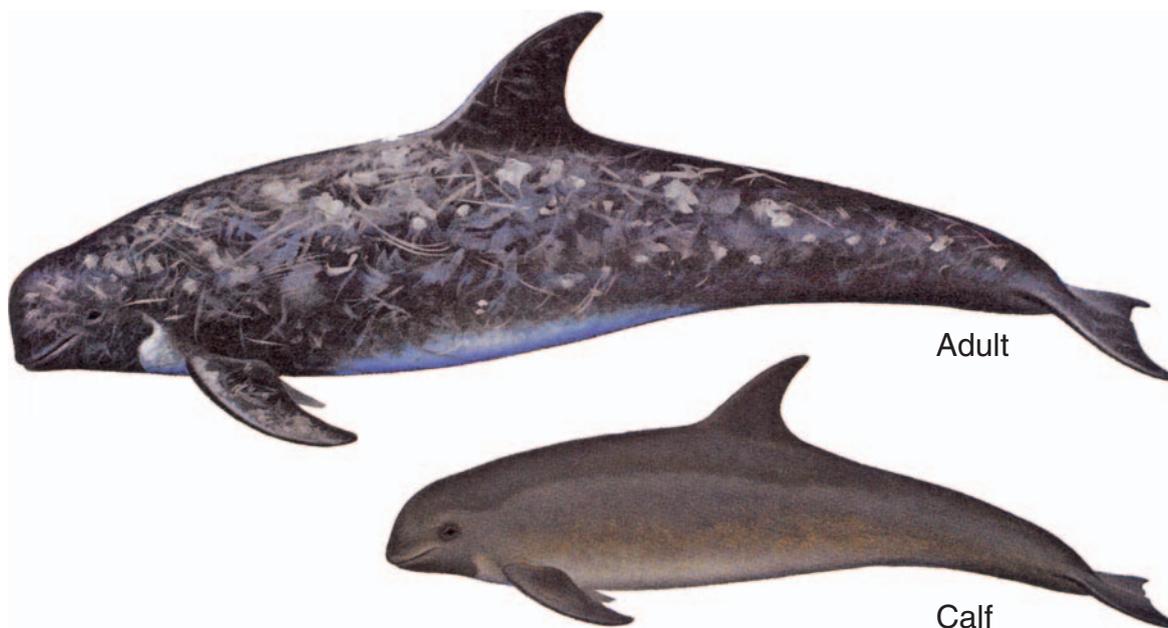


Figure 1 The Risso's dolphin is one of the largest dolphins, with a robust body that nevertheless possesses a narrow tail stock (C. Brett Jarrett).

are available. No information on population trends are available. In most areas where their ranges overlap Risso's dolphins are more common than other closely related species, such as pilot whales, false killer whales, melon-headed whales, or pygmy killer whales, although less common than the smaller delphinids. Some evidence of population division exists both between and within ocean basins, based on morphological, genetic, and distribution data, although population boundaries have not been clearly delineated. Seasonal north-south shifts in density have been suggested off the west coast of North America.

III. Ecology

Risso's dolphins are thought to feed almost entirely on squid (both neritic and oceanic species), and limited behavioral research suggests that they feed primarily at night. Diet may vary by age and sex (Cockroft *et al.*, 1993). No evidence of predation by either killer whales (*O. orca*) or large sharks is available, although both likely prey on Risso's dolphins at least occasionally. Mass strandings of this species are very rare. The range of Risso's dolphins seems to be limited by water temperature, with animals most common in waters between 15°C and 20°C and rarely found in waters below 10°C.

IV. Behavior and Physiology

Risso's dolphins are relatively gregarious in nature, typically traveling in groups of 10–50 individuals, with the largest group observed estimated to contain over 4000 individuals. Stable groups of adults have been documented within larger aggregations. Based on the age structure of a school killed in a drive fishery in Japan, it has been suggested that mature male Risso's dolphins move among groups. Risso's dolphins frequently travel with other cetaceans. Off southern California they have been documented to “bow ride” on and apparently harass gray whales (*Eschrichtius robustus*), and are often seen “surfing” in swells. Aggressive behavior directed toward short-finned pilot whales (*Globicephala macrorhynchus*) has been observed. No studies on diving behavior have been undertaken.

V. Life History

Life history information for this species is relatively limited (Amano and Miyazaki, 2004). Gestation has been estimated at 13–14 months and calving interval at 2.4 years. There appears to be a peak in calving seasonality during the winter months in the eastern Pacific and in the summer/fall months in the western Pacific. Age at sexual maturity is thought to be 8–10 years for females and 10–12 years for males. The oldest Risso's dolphin estimated by examining growth layer groups in the teeth was 34.5 years old.

IV. Interactions with Humans

Interactions with humans are diverse. Although they occasionally bow-ride on vessels, in most cases Risso's seem indifferent to vessels or actively avoid them. Risso's dolphins have been recorded stealing bait from longlines in a number of areas and have been killed as bycatch, as well as being deliberately killed as a result of such interactions. Risso's dolphins are also killed accidentally in gillnet and seine-net fishing around the world, and have been recorded ingesting plastic and with high levels of contaminants in tissues. Small numbers of Risso's dolphins have been killed in small-scale whaling operations around the world, and off Sri Lanka and possibly Japan these takes may seriously jeopardize the local population. Risso's dolphins have been held in aquaria in both Japan and the United States, although

they are relatively uncommon in captivity compared to other species of cetaceans. A number of hybrids with bottlenose dolphins (*Tursiops truncatus*) have been documented in Japanese aquaria.

See Also the Following Article

Delphinids, Overview

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