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Risso's Dolphin

Grampus griseus

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The 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. The common name comes from the person (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. 1). 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 even in adults), and the major-

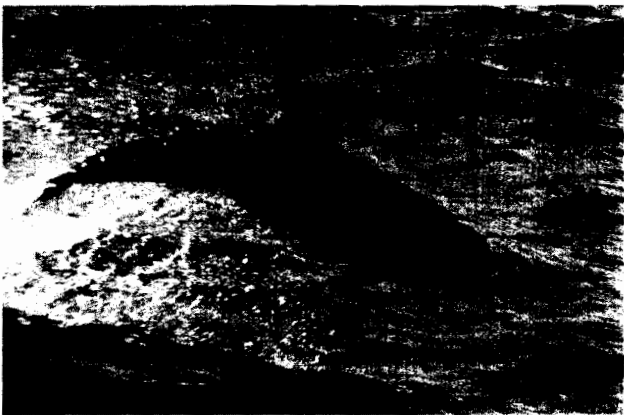


Figure 1 The Risso's dolphin is one of the largest dolphins, characterized by a large dorsal fin, a bulbous head which possesses a distinct cleft on the anterior melon, and a robust body that nevertheless possesses a narrow tail stock. Photo by R. L. Pitman.



Figure 2 Color changes in Risso's dolphin. As adults they become lighter and lighter, as illustrated in this relatively light animal, especially as compared to the animal illustrated in Fig. 1. Photo by R. L. Pitman.

ity of the dorsal and 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 (Fig. 2). No evidence of SEXUAL DIMORPHISM exists. 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. Some researchers have suggested that population division exists both between and within ocean basins (based on morphological data), though sample sizes are small, and no subspecies are currently recognized.

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 (Fig. 3). Mass strandings of this species are very rare, and because they have not been taken in any numbers in whaling operations, relatively few specimens are available. Because of their typically offshore habits, relatively little is known about the biology or behavior of this species. The inshore presence of Risso's dolphins has been documented in several areas, and such movements have facilitated behavioral and population research. The range of Risso's dolphins seems to be limited by water temperature, with animals most common in waters between 15 and 20°C and rarely found in waters below 10°C. No worldwide population estimates exist, although a number of regional estimates are available.

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. They frequently travel with other cetaceans. Off southern California they have been documented to "bow ride" on and apparently harass gray whales (*Eschrichtius robustus*), and aggressive behavior directed toward short-finned pilot whales (*Globicephala macrorhynchus*) has also been observed. No evidence of predation by either killer whales (*Orcinus orca*) or large sharks is

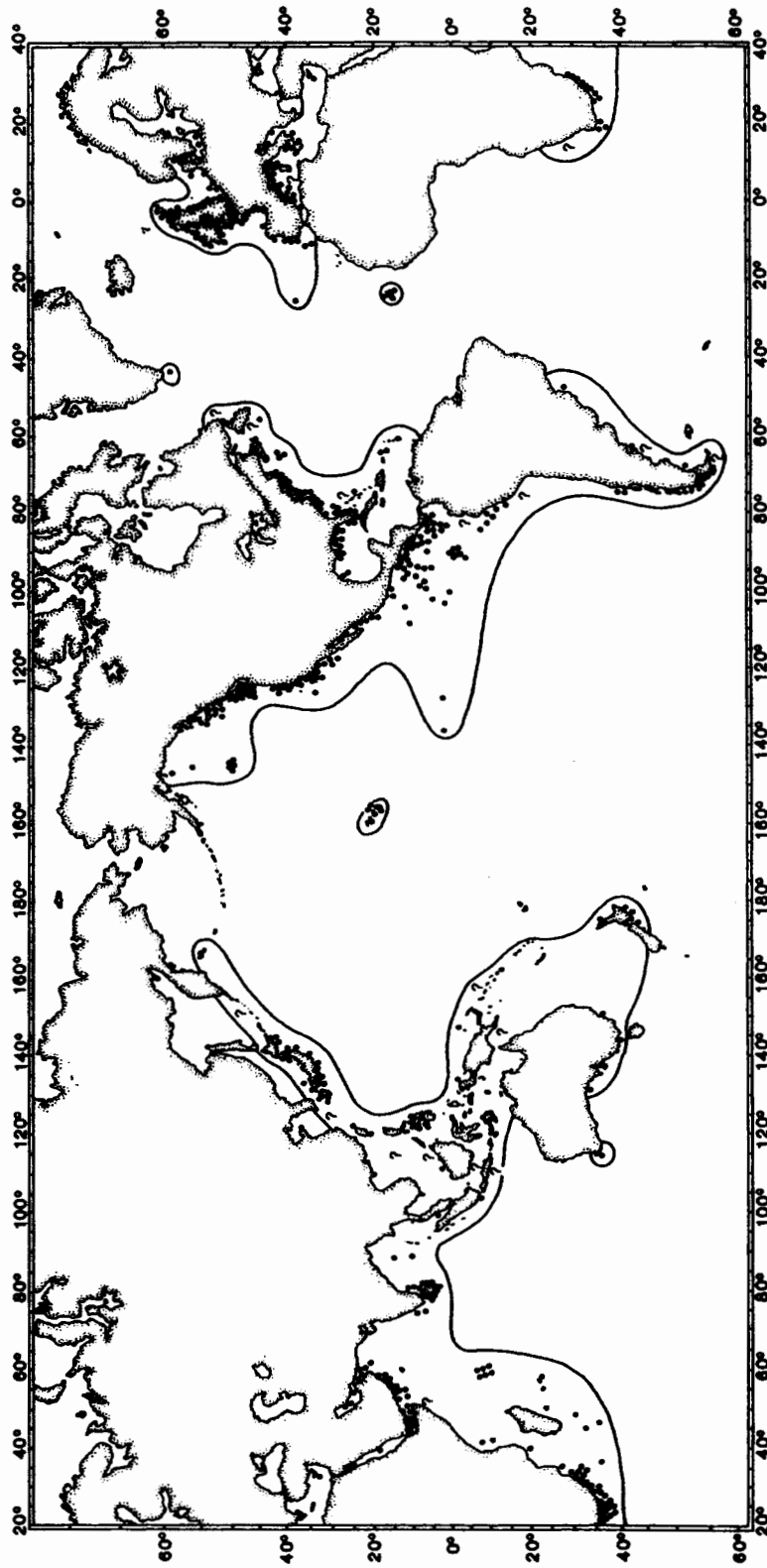


Figure 3 The known distribution of Risso's dolphins. Dots represent actual sighting and stranding records. Question marks indicate records where the accurate geographical location was not given. From Kruse, Caldwell, and Calitwell (1999).

available, although both likely prey on Risso's dolphins at least occasionally. 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. No studies on diving behavior have been undertaken.

Life history information for this species is relatively sparse. The maximum longevity of Risso's dolphins is likely over 30 years, although few aging studies have been undertaken, and growth layer deposition rates in teeth have not been calibrated. Age at sexual maturity and the calving interval are not known. There appears to be a peak in calving seasonality during the winter months.

Interactions with humans are diverse. While they occasionally BOW RIDE on vessels, in most cases Risso's seem to avoid boats. At least one strong exception exists: one Risso's dolphin, nicknamed "Pelorus Jack," escorted boats into Admiralty Bay in New Zealand for over 20 years. Risso's dolphins have been recorded stealing fish from long lines in a number of areas, and these interactions have often resulted in deliberate killing. Small numbers of Risso's dolphins have been killed in small-scale WHALING operations around the world, and off Sri Lanka, these takes may seriously jeopardize the local population. Risso's dolphins are also killed accidentally in fishing gear around the world. 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 Articles

Hybridism ■ Incidental Catches ■ Teeth

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River Dolphins

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Most people are surprised to learn that some species of dolphins, and one porpoise species, live either entirely or partly in freshwater rivers and lakes. These animals are obviously exceptional, and they are the result of geologic processes that allowed (or forced) marine-adapted species to become established in inland waters. River dolphins exhibit some extreme characteristics in their morphology and sensory systems. They are also among the most seriously threatened cetaceans because their habitat and resources must be shared with many millions of people.

I. Definition and Distribution

The term "river dolphin" is not unambiguous. In Rice's (1998) evaluation of marine mammal SYSTEMATICS, for example, he assigned the term to the "peculiar long-snouted" dolphins in four single-species genera: *Platanista* (the Indian river dolphin), *Lipotes* (the Chinese or Yangtze river dolphin), *Inia* (the Amazon river dolphin), and *Pontoporia* (the La Plata dolphin). He also contends that each of these genera belongs to a separate family and that *Platanista* is the only living representative of the primitive superfamily Platanistoidea. The previous convention had been to consider the four morphologically similar species, or species groups, as all falling within the Platanistoidea. Although the genera *Lipotes* and *Pontoporia* are clearly monospecific, it has been customary to recognize two species of *Platanista*—the Indus dolphin (*P. minor*) and the Ganges dolphin (*P. gangetica*). Rice (1998) found no solid morphological evidence to distinguish them and thus proposed that they be considered subspecies: *P. gangetica minor* and *P. g. gangetica*. There is no question that the two populations have been totally isolated for a considerable time (at least hundreds of years). *P. minor* is confined to the Indus drainage in Pakistan, whereas *P. g. gangetica* occurs in the Ganges, Brahmaputra, Megna, Karnaphuli, and Sangu drainage systems of India, Bangladesh, and Nepal. There are three separate populations of the boto (*Inia geoffrensis*): the Bolivian subspecies *I. geoffrensis boliviensis* in the Madeira River drainage above the Teotonio Rapids at Porto Velho, the Amazonian subspecies *I. g. geoffrensis* distributed throughout the Amazon drainage basin except the upper Madeira system, and the Orinoco subspecies *I. g. humboldtiana* distributed throughout the Orinoco drainage basin (Fig. 1). The Yangtze River dolphin or baiji (*Lipotes vexillifer*) is endemic to China's Yangtze River system. In the past, it also occurred at least seasonally in the two large lakes, Dongting and Poyang, appended to the middle reaches of the Yangtze.

However tortuous the arguments may be with regard to the number of species or subspecies, and their systematic relationships, a more immediately practical way to define "river dolphins"



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