

## *Ocean Chronicles*

# RISSO'S DOLPHINS:

## *Ghosts of the Pacific*

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*We had been out on the water for close to* four hours during a marine mammal survey off Monterey Bay, California; each one of us scanning the horizon looking for any sign of a whale or dolphin. Our main goal was to study the ecology of the Risso's dolphin, a species that frequents the outer coastal waters of the eastern North Pacific.

Our depth sounder read 305 metres as we crossed the slope of the Monterey Canyon. All of a sudden we saw splashes of water roughly a kilometre away. We had found a large cluster of 50 to 100 Risso's dolphins, spread out in groups of four to six animals.

We began to photograph the dorsal fin of each individual, and took notes on dive times and group structure. The characteristic markings of each individual made it possible for us to match individuals to a catalogue maintained by our research group at Marine Life Studies (MLS). While many of the dolphins were new to our catalogue, a small portion of the cluster had been identified by our MLS team in previous years. In particular was a male called "Monterey Jack" who we first identified in 2007 and again in 2017."

Over time, the dolphins in each group began to separate. One group we had been following began to swim at high speeds of 12 to 14 km per hour. Spread out side by side in echelon formation, each dolphin began porpoising and directional changes were sporadic.

We had observed this unusual behaviour before, and we decided to follow one of the groups to collect information that might further our understanding of this behaviour. Josh grabbed a net and stood at the bow looking for any signs of discarded prey or fecal samples that may lead us to information regarding diet.

All of a sudden Josh yelled, "Squid!" A small 15cm opalescent squid, better known as the market squid, drifted by our bow. From this we deduced that the Risso's had been foraging on market squid, while exhibiting echelon group movement pattern.

The Risso's dolphin is one of the largest species of oceanic dolphin belonging to the family Delphinidae and subfamily Globicephalinae, reaching lengths of up to 4m. No sexual dimorphism between males and females is known, but males are believed to be slightly larger than females. Risso's dolphins are also distinguished by a large dorsal fin that is often marked with scars and notches, making each animal identifiable to researchers.

Risso's dolphins vary in colour from dark grey in calves to brown, bluish grey, and white in older adults. Often their bodies are covered in immense scarring, somewhat resembling an abstract painting. They are the most highly scarred species of cetacean (whales, dolphins, and porpoises), and it is believed their scarring is caused by conspecific interactions and the hooked suckers of their main cephalopod prey: squid, octopus, and cuttlefish.

Risso's dolphins are found globally, but are most abundant in deep waters off the continental shelf or near submarine canyons. Risso's dolphins inhabiting the waters of the eastern North Pacific have been documented as far north as the Bering Sea and as far south as Mexico, but the majority of sightings of Risso's dolphins are in warm temperate to tropical waters ranging in temperature from 15 °C to 30°C. Little is known about the overall distribution and occurrence patterns of Risso's dolphins in the Northeast Pacific, but it is believed that two populations have been differentiated based on habitat utilization. A clear 900 km distributional gap has been described for individuals north and south of Baja California.

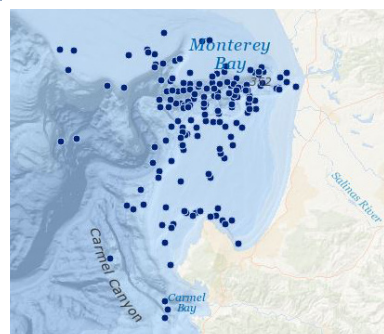
Seasonally, as water temperatures increase, it is thought that Risso's dolphins commonly sighted off California, Oregon, and Washington often extend their range north to southern British Columbia and western Vancouver Island.

While the exact Risso's dolphin population size is not known, government surveys using line transect methods off the outer coasts of California, Oregon, and Washington have estimated a maximum population size to be anywhere from 4,800 to 6,300 dolphins.

With over a decade of research, Marine Life Studies has catalogued over 1000 Risso's dolphins, with many individual dolphins being identified on more than one occasion in Monterey Bay, California. We have found that many dolphins allocate their time to deep waters



**Photos** Risso's Dolphin Monterey Jack in 2007 (above left) and 2017 (above right), a 10 year gap in sightings; the location of the 164 encounters of Risso's Dolphins in Monterey Bay from 2006 to 2017 (right).




off canyons, and that herd size on average is 40 individuals. We have identified females with calves, all male groups, and even a leucistic juvenile repeatedly sighted between the years 2015 and 2017. However, we are still in the initial stages of understanding the ecology of these ghosts of the Pacific.

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