

## Galapagos Penguin

(*Spheniscus mendiculus*)

Kingdom: Animalia

Phylum: Chordata

Subphylum: Vertebrata

Class: Aves

Order: Sphenisciformes

Family: Spheniscidae

Genus: *Spheniscus*

Species: *Spheniscus mendiculus*

**Spanish name:** Pingüino de Galapagos



The Galapagos penguin (left) differs significantly in appearance from its nearest relative, the Humboldt penguin (right) of Peru and Chile. They share the white band around the forehead, which indicates their common ancestry. However, the Humboldt is somewhat larger and has a white neck and a thicker band around the forehead.

**Nearest Relatives:** While the Galapagos penguin is related to all other types of penguins, its closest relatives are the members of the genus *spheniscus*. The other members include *Spheniscus magellanicus* (Magellanic penguin), *Spheniscus humboldti* (Humboldt penguin) and *Spheniscus demersus* (Jackass penguin). The Galapagos penguin is the smallest of its genus, with the other members weighing at least 4kg. The Magellanic penguins live in temperate climates along the coasts of southern South America. They migrate as far north as Brazil and Peru in the winter. The Humboldt penguin is also a temperate penguin that lives off the coast of Peru and Chile and is named for the Humboldt Current of that region. The Jackass penguin is found only off of the Coast of South Africa on twenty-four different islands. While these penguins are different sizes and live in different geographic locales, they all share the banding pattern on the forehead and neck which gives them the common name of “banded penguins.”

**Physical Description:** Galapagos penguins are relatively small in comparison to other penguins. They average about 53cm in length and 1.7 – 2.6 kg in mass with the males being somewhat larger than females. Like most other penguins, the Galapagos penguins are black with white areas on the head and the front of the body. This coloration, also called countershading, makes it difficult for marine predators to see the penguins from above because they blend in with the sky, and from below because they blend in with the deep water. The Galapagos penguins communicate with each other using vocalizations and body movements. The loud, donkey-like braying and vocalizations allow them to identify their mates and their chicks. Their wing movements and postures deter predators as well as attracting mates.

**Geographic Range:** The Galapagos penguin is the only penguin to live and breed entirely in a tropical climate and also the only penguin to be found in the Northern Hemisphere. The Galapagos penguin is endemic to the Galapagos Islands, with the majority of individuals being found on Fernandina and Isabela islands. However, individuals are also found on most of the 19 major islands.

**Habitat:** Like other penguins, Galapagos penguins live in coastal areas where they can nest on land and hunt in the offshore waters. Although the Galapagos is in a tropical, equatorial climate, the Cromwell Current brings cold, nutrient rich waters to the area, supporting an abundance of food for the penguins. The penguins nest primarily on Fernandina and Isabela islands where the volcanic rock provides caves and holes for their nests. The penguins also utilize sandy and rocky beaches for resting, feeding, and mating.

**Abundance/Density:** Galapagos penguins are abundant on Fernandina and Isabela islands where they live in large social colonies of several hundred individuals. Living in colonies allows the penguins to derive a protective benefit from predation which is necessary because of their awkwardness on land. Colonial living also allows them to hunt in groups. However, the individual penguins are territorial and will protect their nesting area from neighboring penguins. There are estimated to be 1,400-1,500 penguins in the wild at this time, although their populations have been seriously reduced by recent El Nino events which reduce food resources.

**Diet:** Galapagos penguins are carnivores that eat many types of small marine creatures. They will dive to a depth of 30-50 meters to obtain small crustaceans, invertebrates and small fish up to 15mm in length. They will also eat mollusks and many types of zooplankton. Their main foods include anchovies, sardines, pilchards, and mullets. They generally hunt in groups up to 2km offshore and ambush their prey from below.

**Reproductive Ecology:** Galapagos penguins breed continuously throughout the year, copulating whenever the food supplies are adequate from the cold upwelling waters of the Cromwell Current. The best time for breeding is usually between May and July when the cold upwelling is strongest and the water temperature is below 23 degrees Celsius. The penguins are generally monogamous throughout their lifetimes and each pair produces between 4 and 6 eggs during two to three reproductive periods each year. Despite the monogamous behavior of the Galapagos penguins, all of the penguins engage in courtship behavior each year. Males reach sexual maturity between four and six years of age while females reach maturity between three and four years of age. Those mature males that are searching for a mate as well as those that already have a mate engage in displays of grooming, bill dueling and dance-like behavior. For the unpaired individuals, this behavior attracts mates, and for the paired individuals it seems to strengthen their bond. Once mates have been located, the pair builds a nest in a cave, volcanic depression or other protected area. The penguins will build their nest from any available materials, including materials stolen from nests of neighboring penguins. Once conditions are right in terms of food and weather, copulation begins and continues until the eggs are laid. Copulation lasts about one minute and may occur up to 14 times per day as the date of egg-laying draws near. Eggs must be incubated for about 40 days and the chicks fledge 60 days after that. However, they are not fully independent for 3 to 6 months. As in most penguin species, both parents share responsibilities for the care of the egg and chicks. They incubate the eggs, and forage for food which is regurgitated into the mouth of the chick. Galapagos penguins can live and reproduce for as long as 15 years, although because of high mortality, most do not survive this long in the wild.

**Interdependence/Symbiosis:** The main relationships between Galapagos penguins and other organisms are predator/prey relationships. The penguins are an important food source for a variety of animals. The main terrestrial predators for the chicks and adults include Galapagos Rice Rats, Sally Lightfoot Crabs, snakes, hawks and owls as well as domestic or feral cats and dogs. In the water, they are consumed by sharks and other large marine predators. Penguins are major predators of small fish, crustaceans and mollusks.

**Human Impact:** The main impact of the Galapagos penguins on humans is a positive one in terms of the revenue provided from ecotourism. The Galapagos penguin is a charismatic creature that draws birdwatchers and wildlife enthusiasts to the islands. However, the penguins may have a slight negative impact on the commercial fishing industry since they eat large amounts of fish which can be used by humans or which might otherwise serve as food for larger, commercially hunted fish. Penguins may eat as much as 3,000 tons of otherwise commercially viable fish each year.

The impact of humans on the Galapagos penguin has largely been a negative one. Human disturbances to their nesting habitats and introduction of predators such as domestic cats and dogs have harmed the ecosystem. The Galapagos penguin is currently listed as Endangered by the IUCN, the international body that manages threatened and endangered species. There is currently only one effort in place to specifically conserve the population of Galapagos penguins, and this is funded by a private foundation rather than by a governing body with enforcement power.

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