

The Galapagos Penguin

The [Galapagos penguin](#) is endemic to the Galapagos Archipelago and is the only penguin species that lives north of the equator. It is able to call Galapagos home due to the cool, nutrient rich waters around the Islands brought by the [Humboldt](#) and [Cromwell](#) Currents. Penguin biology is closely linked to environmental conditions, so population numbers are good indicators of ecosystem health.

The Galapagos penguin

Around 95% of the **Galapagos penguin** (*Spheniscus mendiculus*) population lives on the Fernandina and Isabela islands in the western part of the archipelago, while the rest are scattered in smaller populations on other islands.

The northern part of Isabela crosses the equator, making this species the most northerly of the world's penguins. As a result, they have had to evolve many [adaptations](#) to be able to survive on the equator where the strong sun is a major problem. Physical adaptations include having more exposed skin than other species to aid heat loss and moulting twice a year to replace sun-damaged feathers. They also pant to cool down and seek shade during the hottest part of the day.

Galapagos penguin distribution on Isabela, Fernandina, Santiago and Floreana Islands
Galapagos penguins form monogamous relationships, meaning they stay with their partner for life. They can breed up to three times a year depending on the food supply. Breeding begins when the sea temperature drops below 24°C as this signals when the seas are most productive. The colder upwellings bring a supply of sardines, anchovies and mullets, the main prey of the Galapagos penguin.

Simple nests are made from sticks, feathers, bone and leaves in hollows and cracks in the lava close to shore. Location of the nest site is important as it needs to be shaded to keep the eggs and chicks sheltered from the hot sun.

A female will lay one or two eggs a few days apart and these will be incubated by both parents for 38 to 42 days before they hatch. Both parents will then feed the chick, taking it in turns to go out and hunt food a few days at a time.



A Galapagos penguin cooling off © Bill Hale

What threats do Galapagos penguins face?

As an endemic species, the Galapagos penguin populations in Galapagos are crucial for the survival of the species. This also means that any great change in their environment could lead to the entire species being wiped out! Some of the threats facing Galapagos Penguins are anthropogenic such as invasive species and new diseases, but environmental factors such as [El Niño](#) events can have a great impact on them.

Their environment

El Niño heavily influences the Galapagos penguin populations as it makes the waters around Galapagos warmer, making their food less abundant. The cold-water schooling fish that the penguins feed upon migrate away from Galapagos during El Niño meaning food becomes scarce. As a result penguins usually do not breed during El Niño as the chances of raising offspring successfully are low and parent penguins could die in the attempt.



Galapagos Wildlife: Galapagos penguins with Sally lightfoot Crabs and a Marine iguana
© Vanessa Green

The El Nino in 1982/83 caused a dramatic decline in the penguin population by around 80%. After a slow recovery, a second bad El Niño in 1997/98 reduced the population again by 65%. Population numbers have slowly been recovering since but numbers are still only half what they were before the 1982 El Niño. Increasing frequency and severity of El Niño

weather events due to global climate change is a major threat to the Galapagos penguin, especially when they are at low numbers.

Although natural predation (by native species) is uncommon, penguin chicks can be taken by Galapagos Hawks and short-eared owls. Weaker hatchlings are also sometimes predated on by Sally Lightfoot Crabs and Galapagos Banded Snakes. Adults are also under predation from large sharks, fur-seals and sea lions.



Galapagos Wildlife: A Galapagos Penguin on a nest ©Charles Darwin Foundation

Their nesting activities are also restricted due to many of the nests they used up to 40 years ago are now either prone to flooding or inhabited by **marine iguanas**. This means that less pairs can breed now compared to 40 years ago, so the recovery of the species is limited.

Human Impact

Human activities on the islands over the last 470 years have inevitably led to invasive species being brought to the islands by colonizers, farmers and pirates. Some of these invasive species include feral pigs, dogs, cats and fire ants, all of which predate on Galapagos penguins. Land predators are a great problem for penguins as their chicks cannot swim, making them easy targets for cats or dogs.

Humans have also brought diseases to Galapagos that the native species have no immunity against. A particularly virulent introduced disease is avian Malaria which is feared may eradicate the Galapagos penguin as it has done to endemic bird species in Hawaii. In Hawaii, the introduction of avian malaria has led to so many extinctions that it now has the highest number of extinct birds in the world, with ten extinctions in the last 35 years. The same effect is feared to occur in Galapagos as the Galapagos, like Hawaii, is an isolated group of islands, so the introduction of a new disease can be fatal for a species that have no immunity towards it.

Human traffic on the islands, and especially fishing on the islands has also led to penguin fatalities. Bycatch has become a global issue for marine species as bad fishing techniques from all around the world have led to millions of animals dying after having been tangled up in nets. As penguins are birds and need air to survive, the likelihood of them dying after having been caught in a net is extremely high.

These threats are exacerbated by an expanding human population and increased tourism to the Islands. The extreme fluctuation in penguin population numbers highlights the fragility of the penguins whose survival is intimately linked to their environment.