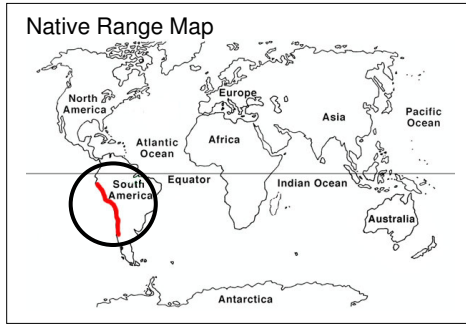


# Humboldt Penguin



Kingdom: Animalia  
Phylum: Chordata  
Subphylum: Vertebrata  
Class: Aves  
Order: Sphenisciformes  
Family: Spheniscidae  
Genus: *Spheniscus*  
Species: *humboldti*

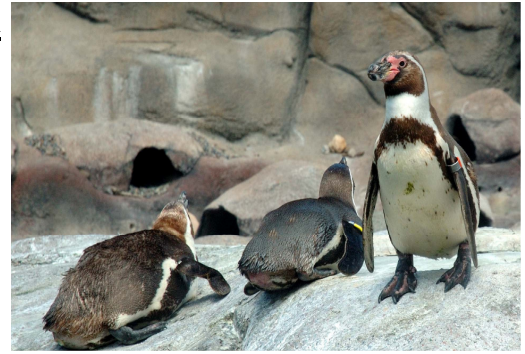


Photo courtesy of Janet Wisneski

## Habitat

- **In the Wild:** The Humboldt penguins are found along the West Coast of South America from Peru to Chile. They are named after the cold Humboldt Current running from the Antarctic to the equator. They nest along the rocky coastal areas and the neighboring islands where the terrain is suitable for constructing nesting burrows. The arid climate in Peru and northern Chile means the burrows are not at risk of flooding because of heavy rains. In central Chile where the climate is more temperate, there is a risk of flooding during the rainy season in autumn and winter. Water temperatures range from 32 to 70 degrees Fahrenheit and air temperatures from 25 to 75 degrees.
- **Exhibit Location:** Wildlife Trails (Penguin Coast)  
Penguin Coast is designed to support 15 pairs of penguins plus their offspring. Land area is designed to mimic the arid Peruvian and Chilean coast, with nest tunnels incorporated into the landscape. Pool capacity is approximately 50,000 gallons of fresh water to a depth of 12 feet, with underwater viewing included in the design. Water temperature is kept at 50° F during coldest weather and 60° F during the summer. The holding area is visible during periods of time when penguins are not on exhibit, such as cleaning and molting. Lighting allows for after-hour events in the visitor pavilion. Heated rocks and sufficient nesting burrows allow the penguins to remain in the exhibit during colder CNY winters. During extreme winter weather of 20° or below, the penguins are kept inside their heated holding where they can still be viewed by the public, but not subjected to the weather. In the hotter temperatures of the summer, the penguins enjoy their pool filled with cooler water, misters to keep them cool, and their air-conditioned holding areas.

## Characteristics

- The Humboldt penguins are medium-sized birds (15 -18 inches tall) weighing between 6 and 13 pounds. Penguins have feathers that are denser than most other types of birds, having as many as 70 feathers per square inch. These feathers are spaced very closely. They also have a thick layer of down to help keep the birds warm. The feathers are white on the belly with a black band around the chest and spots on the breast. They have black backs and tails. The face is black but separated from the head and neck by a white border. The bill is black with a white band near the tip and serrated. Females are slightly smaller than the males. Young birds are primarily slate gray across the head and back and lack the bold double stripe of the adults.
- Penguins' bones are solid and heavy, which help them to remain submerged and reduce the energy needed for pursuit diving.
- Adult penguins are countershaded (dark dorsal, light ventral) which helps to conceal swimming penguins from predators. When viewed from above, the dark dorsal side blends in with the darker ocean depths. When viewed from beneath, the light ventral side helps them blend in with the lighter surface of the sea.
- Humboldt penguins have a gland which enables them to drink salt water in addition to fresh water; the gland concentrates excess salt which then dribbles down the bill.
- **Lifespan: In the Wild** 20 years; **In Captivity** over 30 years

## Behaviors

- They live in rookeries with other Humboldt penguins and nest in underground burrows among the rocks and guano (accumulated droppings found where large colonies of animals occur and rich in plant

nutrients), on cliffs or find crevices in which to lay their eggs. Adults feed close to nesting sites during the breeding season, but during the winter they may migrate several hundred miles before returning to the breeding site. After the chicks have fledged, the penguins leave the breeding site to forage at sea for weeks before returning to molt. After the molt they return to the sea to regain weight and condition to begin the breeding season again.

- When food is scarce, the parents feed only the larger chick and the smaller chick quickly starves.
- Penguins communicate by vocalizing and performing physical behaviors called “displays”. They use many vocal and visual displays to communicate mating territories and information. They also use displays in partner and chick recognition and defense against intruders.
- Penguins are among the most social of all birds.
- Humboldt penguins are one of the most timid species of penguins.
- Because of their normal arid (not arctic) climate, these penguins huddle together for safety and not warmth.
- **Enrichments at the Zoo:** Broadcast feeding, dog toys, live fish and nesting materials

### **Reproduction**

- Sexual maturity is reached between 2 and 7 years old. Mates are usually chosen for life.
- The main breeding season is from March to April and September to October. Two eggs are laid over a period of 2-4 days with incubation taking 40-42 days and both adults share the incubation. Chicks hatch about 2 days apart. They remain in the nest while the adults leave in the morning and return with food later in the day. As the chicks grow, the adults remain at sea longer to satisfy the growing chicks. The chicks fledge about 10–12 weeks of age and leave the breeding site for several months to forage at sea. Humboldts can rear 2 successive broods each year when conditions are favorable.

### **Diet**

- **In the Wild:** small schooling fish such as anchovies, sardines, squid and crustaceans
- **At the Zoo:** Capelin (most nutritional value; fed in most abundance daily, antimalarial medication added during mosquito season), smelt (daily), herring (favorite, daily, antifungal medication added for stressed birds) and silversides (“penguin candy”, used in training and as treats). Molting birds are fed hydrated fish. The penguins are fed 2-3 times/day, including hand feeding to ensure proper medications/food amount and broadcast feeding as enrichment to encourage diving, swimming and “porpoising” (leaping/diving similar to porpoise behavior).

### **Conservation Status**

- **IUCN status:** Vulnerable on Red List 2000 – estimated at 40,000 in the wild; **CITES:** Appendix I
- There are many factors in the decline of the Humboldt penguin population. They are affected by weather patterns like El Nino events. These bring seasons of food shortages. The normally cool nutrient rich water of the Humboldt Current is replaced with warmer water flowing from the central Pacific. Being the top predator in the marine ecosystem, the loss of nutrients causes the penguins to face starvation in El Nino years. Overfishing in habitat areas is also a factor and the entanglements in the nets cause the death of many adults. The harvesting of guano for fertilizer leaves nothing in which the birds can burrow.
- Natural predators include gulls, vultures, caracaras, foxes, pinnipeds and cetaceans. When in the water, penguins may be eaten by leopard seals, fur seals, sea lions, sharks or killer whales.
- Chile has passed a 30-year moratorium on killing or capturing birds. In Peru the major colonies are protected and the government manages the extraction of guano. There are propositions creating marine nature reserves around the main breeding grounds.
- A Species Survival Plan managed by AZA controls the breeding of Humboldt penguins in order to maintain a healthy and self-sustaining population.

### **Did You Know?/Fun Facts**

- All penguins live south of the equator from Antarctica to Ecuador.
- Penguin wings are paddle-like flippers used for swimming, not flying. They steer with their feet and tail.

- Penguins can run as fast as most men and swim faster than most fish. They are perfectly adapted to a half-life between land and sea. Humboldt penguins can swim up to 20 mph.
- Penguins use the sun to navigate from land to sea. They adjust for the sun's changing position in the sky throughout the day.
- Humboldt penguins can blush. When they get too hot (it can get up to 108 degrees (F) where they live), they have to avoid over-heating. So they flush pink on their face, wings and feet. This sheds body heat by sending blood to the bare part of their bodies.

**Source:**

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