

CHILEAN FLAMINGO (*Phoenicopterus chilensis*) TALKING POINTS

The following items should be in the bag, if they are not let someone in education know. If you discover a new problem with any biofact (broken pieces, loose teeth, etc.), it is your responsibility to let the staff know **and** make a notation with the date, time and your name on the sign out clipboard.

Note: Please return all items to their appropriate place on the cart, and make sure lids and bungee cords are secured. Things should be left exactly as you found them.

Note: Do not try to open the Lucite containers with the food. We are trying to prevent animals from getting into the bone room.

Note: The foot and wings have been freeze-dried, please remember that freeze-dried items may break if dropped.

CHILEAN FLAMINGO BAG INVENTORY

- Chilean Flamingo skull
- Chilean Flamingo foot
- Chilean Flamingo egg
- Chilean Flamingo wing in bag (freeze-dried)
- Chilean Flamingo femur
- Koala femur, for weight comparison
- Brown Pelican wing bone
- Mountain Lion forearm bone, for weight comparison
- Small sieve to demonstrate filter feeding
- One lucite box containing flamingo chow
- Chilean Flamingo Resources Cards

CHILEAN FLAMINGO RANGE/HABITAT

- Central Peru, south along the Andes to Tierra del Fuego (see map)
- Shallow brackish saltwater lakes, coastal estuaries and lagoons, usually in warmer climates
- Found from sea level to 14,760 feet
- Soil is mainly alkaline in their habitat and it is barren of vegetation and desert-like. Tolerate alkalinity up to pH 10.5
- Able to tolerate twice the salinity of seawater

CHILEAN FLAMINGO GENERAL CHARACTERISTICS

Order Phoenicopteriformes, contains only one family– the flamingos. They are large, long-legged wading birds with thick, downturned bills, used to strain microorganisms from the water.

Flamingos are highly social birds, foraging and breeding in large flocks.

CHILEAN FLAMINGO PHYSICAL ADAPTATIONS

1. Bill

- Black, downturned bill is adapted for filter feeding. When the head is held upside down in water, the tooth-like ridges and hair-like lamellae inside act as food filters. (see photo, use sieve to demonstrate filter feeding)
- Bent bill allows flamingos to feed without getting their feathers wet.
- Top bill not fixed to the skull, but moves up and down during the filtering process. The gap of an open beak is the same along entire length, for more efficient filtration.

2. Size /Weight/Lifespan

- Average height is 3.6 – 4.3 feet
- Average weight is 5.5 – 7.5 pounds
- Lifespan: 20 – 30 years, up to 50 in captivity

3. Body & Plumage

- Tall, slender, wading bird with neck and legs longer, relative to body size, than other birds
- Waterproof plumage for staying warm in a wet environment
- Feathers function to insulate and protect skin and body, provide smooth streamlined surface area required for efficient flight
- Beta carotene in flamingo's diet causes pink coloring in feathers and provides pattern and color; these are important to flamingo social behavior. The pink plumage is paler than other flamingo species
- Immature chicks are grey with straight beak (see picture)
- Elongated, sinuous neck with 19 cervical vertebrae allows bird to reach feathers while preening. (birds have 13-25 cervical vertebrae, mammals have 7 cervical vertebrae)
- Molting is variable– may occur simultaneously (catastrophic molt), and may occur twice a year or every one to two years
- Endothermic– efficient respiratory and circulatory systems enhance the faster paced lifestyle that birds have

4. Feet/Wings

- Long, grey, scaled legs with pink joints for wading into much deeper water. Flamingos also have really tough skin on their legs, which allows them to live in alkaline soda lakes.
- Ankle is located about halfway up the leg– knee is located close to the body and is not externally visible (see photo)
- Palmate feet– three short, webbed toes aid in swimming and help support in mud
- Long wingspan (3.9 – 4.9 feet) provides flamingos with flight, enabling them to escape predators and for search of food and appropriate breeding areas
- Black primary and secondary feathers– flight feathers are subject to most wear and tear; melanin providing black coloration is stronger and more resistant to wear
- When flying, flamingos flap their wings fairly rapidly and almost continuously

5. Counter-current Heat Exchange

- Blood vessels running to and from the feet of flamingo are organized to facilitate countercurrent heat exchange
- Arteries carrying warm blood toward the feet run alongside veins carrying cool blood up from the feet
- Heat from the out-flowing blood in the arteries is transferred to blood in the veins
- Thus, cool blood moving toward the heart is warmed helping to maintain core body temperature

- The warm blood moving toward the feet is cooled, keeping their feet at temperatures near water temperature

6. Senses/Glands

- Excellent sense of hearing is important in detecting if the colony is in danger
- Preen gland at base of tail (uropygial gland) for waterproofing feathers
- Salt glands in the nostrils expel excess salt from their bodies. In captivity these salt glands are inactive because of the decreased level of salt in the environment.
- Good vision for flight. Flamingos have color vision with eyes located on side of the head for broad field of view.
- Poor sense of smell.

CHILEAN FLAMINGO BEHAVIORAL ADAPTATIONS

1. Life Style

- Social birds that live in colonies ranging in size from a few dozen to thousands of birds. Breeding colonies stimulate breeding and provide "safety in numbers".
- Generally, non-migratory birds. May be fairly nomadic throughout the year as they follow shifting resources.
- Fly in "skeins" or "V" with the neck extended forward and the legs backwards (see photo)
- A flamingo runs several steps, begins flapping its wings, and lifts off into the air. When landing the procedure is reversed: the bird touches down and then runs several paces.
- Flamingos often stand on one leg, the other tucked beneath the body. This reduces surface area and conserves body heat and energy. They typically will stand facing into the wind or rain so that the water does not get into their feathers. (see photo)

2. Communication

- Flamingos are very gregarious, especially in their nesting areas during breeding season
- The flamingo's voice is loud and rather goose-like and appears to be important in keeping the flock together when flying

3. Diet

- Algae, crustaceans, brine shrimp, diatoms and aquatic plants
- Eat a special "flamingo fare" at zoo, which is high in carotenoids to preserve their color

4. Eating Habits/Digestion

- Filter feeders— sharply downward turned bill is held upside down in the water and swept back and forth so that minute organisms and algae are filtered from the water
- Fleshy tongue fits in deep groove of thicker, lower bill and pumps 5 - 6 times per second, pushing the water through the bill's filtering apparatus, the **lamellae**. (see photo)
- Bristle-like projections on their tongues that point towards the throat help guide the strained food particles to the throat
- Flamingos may stamp their webbed feet in the mud to stir up food from the bottom
- Chilean flamingos are unable to drink salt water. Instead they drink from springs and puddles and can even absorb rainwater through their feathers

5. Breeding/Reproduction/Growth/Parental Care

- Breed in colonies— nest of breeding pair is ~ 4.9 feet from neighboring nests. Defend their nest during the breeding season, otherwise they are non-territorial
- Courtship rituals of synchronized dancing, preening, neck stretching and honking
- Opportunistic, erratic breeders. Breeding season varies within and among populations. Every flamingo does not nest every year. Will breed in synchrony within flocks to aid the survival of the chicks
- Form long term pair bonds that last through several breeding seasons

- Nests are mud mounds in shallow water that look like a volcano. Nests are about 15 inches in diameter and about 1.5 to 2 feet high
- One chalky, white egg is laid. Eggs are torpedo shaped so won't roll from nest
- Both parents incubate the egg for 27 - 31 days until hatching precocial young
- Chicks fed "crop milk" for about three months, which comes from either parent's upper digestive tract and contains a high level of fat and nutrition.
- Chicks gather in creches that are watched over by a few adult birds. Parents recognize their chicks by sight and vocalizations. (A crèche is a group of young who stay together for protection)
- Chicks' bills are straight for first two weeks and then begin to develop the curved shape for filter feeding (see photo)
- Flamingos do not breed until they lose their gray juvenile color at about three to five years. The last part of the skin to turn pink is often the ankle or hock joint
- Chicks begin to grow their flight feathers and fledge after 9 - 13 weeks. At the same time, the bill begins to hook, allowing the chick to feed itself.

CHILEAN FLAMINGO INTERESTING/FUN FACTS

- Flamingos belong to one of the oldest bird groups alive
- Flamingo comes from the Latin word for "flame"
- The Chilean flamingo is scarce or absent in lakes with fish. It is present, usually in large numbers, where there are no fish with which to compete for food

CHILEAN FLAMINGO CONSERVATION TALKING POINTS

- Near Threatened on IUCN Red List and Cites Appendix II
- Chilean flamingos are protected under the U.S. Migratory Bird Act of 1918
- Population expected to decline due to egg-harvesting, hunting, disturbance and the degradation of its habitat
- Because the color of feathers fades quickly after plucking, the feather trade of the early 20th century did not exploit flamingos the way it did many other bird species.
- Because food and breeding sites shift spatially (due to seasonality of food resources or changing environmental conditions), larger protected areas are better than small ones because they are more likely to contain enough resources throughout the year to accommodate these shifts
- The San Francisco Zoo has had success in breeding Chilean flamingos

CHILEAN FLAMINGO CONSERVATION ACTION:

- Proposed actions include: continue monitoring the population, introduce measures to control intensive egg-harvesting and restore habitats and reduce the impact of tourism
- You can educate yourself and others on the plight of the flamingos
- You can contact government officials at the local, state, and federal levels advocating further protection for flamingos
- You can also make donations to charities trying to save the flamingo



