



Llama

Lama glama

Classification *What groups does this organism belong to based on characteristics shared with other organisms?*

Class: Mammalia (all mammals)
Order: Artiodactyla (even-toed ungulates)
Family: Camelidae (camels, llamas)
Genus: Lama (alpacas, guanacos, llamas)
Species: glama (llama)



Distribution *Where in the world does this species live?*

Llamas' native range is the Andes Mountains of South America, primarily Peru and Bolivia, but none are found in the wild. They were domesticated from wild guanacos (also classified as *Lama glama* or as a subspecies *Lama glama guanicoe*) 4,000 to 6,000 years ago and may be the first known domesticated animal. Because they are domesticated, commercial herds are found in North America, Europe and Australia.

Habitat *What kinds of areas does this species live in?*

Llamas' natural habitat is high plateau covered with shrubs, stunted trees and grasses at elevations ranging from 7,550 to 13,120 feet (2300-4000m). They have adapted to a variety of environments.

Physical Description *How would this animal's body shape and size be described?*

- Llamas are the largest lamoid or South American Camelid species. Unlike Old World Camelids, they do not have humps.
- They stand three to four feet tall (.91-1.22m) at the shoulder and five to six feet tall (1.52-1.83m) at the head; they range in length from three to five feet (.91-1.5m) and weigh between 250 and 450 pounds (113.4-204kg).
- Females are smaller than males.
- They have long necks and legs, relatively small heads with a split upper lip, large ears, and short tails.
- Their shaggy fur is coarse and ranges in color from white through reddish-brown to black; mixed coloring can occur.
- Their feet have two toes with hard toenails and a leathery pad on the sole of the toe.



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Diet *What does this species eat?*

In their historic range: Llamas eat primarily shrubs and grasses. Their food provides most of the moisture they need to survive in a dry, high-elevation environment.

At the zoo: Llamas are fed hay, specially formulated biscuits for herbivores and fresh browse.

Predators *What eats this species?*

The most common predators of llamas are coyotes, mountain lions, and ocelots.

Social Organization *How does this animal interact with others of its species?*

Llamas are social, gregarious animals that live in herds ranging in size from 20 to 100. Family groups consist of a single male, up to six females and their current-year offspring. Males leading family groups are territorial and aggressive with competing males, driving them away from the herd. Males without harems congregate in bachelor groups. Because they are protective of other animals, llamas are used as guards for sheep, goats, and horses and herds may adopt sheep as part of their family. Llamas communicate with one another in a variety of ways. Body posture can convey dominance or subordination; ear positioning indicates mood. Although usually quiet, they vocalize to warn of predators, and mothers hum to their offspring who hum in response. They may use common latrines to mark a herd's territory by sight and scent. When annoyed, threatened or establishing dominance, they may spit at the offender.

Life Cycle *How does this species mate, raise young, grow and develop?*

Llamas are polygynous; males mate with multiple females in their herd. They tend to mate during the southern hemisphere's late summer and fall (November to May). Female llamas experience induced ovulation, releasing an egg within 24-36 hours after mating. Gestation lasts about eleven months, at which time one offspring, called a cria, is born. Newborns weigh between 18 and 33 pounds (8-15kg) and can stand within an hour. The infant will nurse for four to five months, and its mother will continue to care for it until it is a year old, at which time the male will drive it away from the herd. Both males and females reach sexual maturity at two to three years old. Well-cared-for llamas can live for more than twenty years; average life span is 15 years.

Adaptations *What physical and behavioral characteristics enable this animal to survive and thrive?*

- Llamas' blood contains a high amount of **hemoglobin, the protein that carries oxygen from the lungs throughout the body**, which enables them to survive at high elevation with low levels of oxygen.



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- They are **modified ruminants** with **three-chambered stomachs** that allow them to process a variety of foliage in their harsh environment.
- They have **thick fur** to keep them warm and help protect against animal bites.
- Like many prey animals, **eyes on the sides of their heads provide panoramic vision** enabling them to detect predators approaching from many angles.
- **Maximum running speed** of 40 miles per hour (65kmph) helps them to escape predators.
- Their **feet, two-toed with soft, leathery pads**, make them sure-footed on rocky terrain and cause less environmental damage than hooved animals.
- Their ability to **carry loads** weighing up to 130 pounds (60kg) and to **travel** up to 19 miles (30km) per day makes them efficient pack animals.

Collection Connection

- Denver Zoo has two resident llamas. Fernando is a male born 4/23/09 and Jorge, also a male, was born 6/14/03.
- They can be found near the black rhino and hippo habitat.

Conservation Status: *Is this animal at risk for extinction and why?*

IUCN Status: Not Evaluated

Because llamas are domesticated, conservation status has not been assigned. There are several million llamas in commercial herds.

Resources and Where to Learn More

National Geographic: <https://www.nationalgeographic.com/animals/mammals/l/llama/>

University of Michigan Animal Diversity Web: https://animaldiversity.org/accounts/Lama_glama/

Colorado State University:

<http://www.vivo.colostate.edu/hbooks/pathphys/digestion/pregastric/llamapage.html>