AFRICAN CRESTED PORCUPINE

**Range**  
Northern Africa, sub-Saharan Africa, Algeria, Tunisia, Italy and Sicily

**Habitat**  
Forests, rocky areas, mountains, croplands and sand hill deserts

**Diet (wild)**  
Bark, roots, tubers, bulbs, fruits

**Diet (captivity)**  
Fruit, vegetables, dog food

**Description**  
Length: 36 inches; weight: 40–60 pounds. The head, neck, shoulders, limbs, and underside of body are covered with coarse, dark brown or black bristles. Quills along the head, neck and back can be raised into a crest. Sturdier quills about 20 inches long along the sides and back half of the body are generally marked with alternating light and dark bands. The soles of the paws are naked and have pads. Eyes and ears are very small.

**Lifespan**  
Captivity: 20 years

**Reproduction**  
Females usually have one litter per year of 1–2 young after a gestation period of 112 days. There is a long intensive care period of the young within the family group. At birth, the young are covered with short hair and the back spines are soft; the spines begin to harden after one week. Mating occurs only at night, both in and out of the burrow. Females are aggressive toward non-familiar males. To mate, the female raises her tail and the male stands on his hind legs supporting himself with his forefeet on the female’s back. They usually reach adult weight at 1–2 years and are usually sexually mature just before then. The female often establishes a separate den within the burrow system for bearing young. *(Most available information comes from captive animals.)*

**Behavior**  
African crested porcupines are excellent diggers and live in an extensive burrow systems, caves, rock crevices or aardvark holes. They are terrestrial, rarely climbing trees, but able to swim. African crested porcupines have shorter tails than their New World cousins and the presence of rattle quills at the end of the tail make a hiss-like rattle when they vibrate. The quills are used for defense against predators. These porcupines are considered agricultural pests because they gnaw the bark of plantation rubber trees and eat corn, pumpkin, sweet potatoes and other crops. Their meat is considered a delicacy and in some areas they are hunted at rates which may be unsustainable.

**Our animals**  
1 male. Arrived at PPZ in 06/1999. Birth place unknown

**Cool stuff**
- The quills of African crested porcupines serve as an effective defense against predation. When disturbed, they raise and fan quills to create an illusion of greater size. If the disturbance continues, they stamp their feet, whirr their quills and charge the enemy, back end first, attempting to stab with the thicker, shorter quills. Such attacks have been known to kill lions, leopard, hyenas, and humans.
- Quills are also used by humans as ornaments and talismans.
- African crested porcupines are the largest porcupines in the world and the largest rodent in Africa.
- “Porcupine” comes from the Latin *porcus* for pig and *spina* for spine: “spiny pig.”
- All Old World porcupines have spines of some sort, but their spines lack the barbules that characterize the spines of North American porcupines.
- These animals are terrestrial, not climbing trees in the manner of North American porcupines.
### African Lion

**Range**
Southern Sahara to southern Africa, excluding the Congo rain forest belt

**Habitat**
Grassy plains, savannas, and semi-deserts

**Diet (wild)**
Hoof stock and virtually anything they can subdue. Opportunistic feeders; will steal kills and carrion from other predators: 40 percent of their food comes from scavenging prey from other predators

**Diet (captivity)**
Carnivore diet, fasted one day a week

**Description**
Length: 7–9 feet; weight: 250–430 pounds. Males are larger than the females. Lions are the only sexually dimorphic members of the cat family; males have characteristic manes that cover their head, neck, and chest, ranging in color from blonde to red to brown to black. Both genders have a tawny coat; shades may vary from light to dark. At the end of the tail is a black tuft, which hides a hard “spur” and is unique to lions.

**Lifespan**
Wild: 15 years. Captivity: 25–30 years

**Reproduction**
After 100–120 days gestation, the female gives birth to 1–5 blind and helpless (altricial) cubs. They are weaned at three months and are able to hunt at one year. Young to start eating morsels of meat when they are about four weeks old. They usually remain with the mother for about two years. Males within a pride do not compete for mating rights; the first male to encounter a female in heat wins.

**Behavior**
The only wild cat that is truly social, lions live in groups of 15 or more animals called prides. Prides can be as small as three or as large as 40. In a pride, lions hunt prey, raise cubs, and defend their territory together, although females do most of the hunting and cub rearing. Lionesses in the pride are usually related (mothers, daughters, grandmothers, and sisters). Males and females fiercely defend against any outside lions that attempt to join their pride. Many of the females in the pride give birth at about the same time and cubs may nurse from other females. Each pride generally will have no more than two adult males. Lions are both nocturnal and crepuscular. The lion stalks its prey and charges when within about 100 feet (30 meters), reaching top speeds of 35 mph in short bursts. Drinking regularly when water is available, lions survive water shortages by acquiring moisture from the stomach contents of their prey or from tsama melons.

**Our animals**
2 females, 1 male. Born: 03/26/2004 (females [sisters]); 10/23/2006 (male). Birth place: Cheyenne Mountain Zoo, Colo. (females); North Carolina Zoological Park (male)

**Cool stuff**
- Lions are the largest carnivore in Africa.
- The Swahili word for lion, “simba,” also means king, strong, and aggressive.
- A male’s loud roar, usually heard after sunset, can carry as far as 5 miles. The roar warns off intruders and helps round up stray members of the pride.
- Hunting generally is done in the dark by the lionesses. They hunt in groups of two or three using teamwork to stalk, surround, and kill their prey. Lionesses are the least successful of hunters, scoring only one kill out of several tries. After the kill, the males usually eat first, lionesses next—and the cubs last.
- When a new male deposes another male, it is not unusual for him to kill all the cubs in the pride, prompting females to go into heat sooner and ensuring that all future cubs will have his genes.
- The Asiatic lion (Panthera leo persica) is a sub-species that exists as a single population in India’s Gujarat state. It is listed as Endangered by IUCN due its small population size. Asiatic lions are slightly smaller, have a larger tail tuft, and a less developed mane than African lions.
- Breeding pairs may mate 30–40 times a day.
- The male lion’s mane, while it makes him appear larger and protects the vulnerable area around the neck and head from injury, also makes the male a less able hunter, as the mane is cumbersome and makes the lion overheat during a chase.
AFRICAN PYGMY GOAT

Range | Domesticated
Habitat | Originally, grasslands and semi-desert areas
Diet (wild) | Browsers, leaves preferred over grass
Diet (captivity) | Pelleted grain and hay
Description | Height: 21 inches; weight: 44–60 pounds. Colors are variable: brown, white, black, silver-gray, and caramel. They have a small beard and both sexes have horns, but the males’ horns are longer and thicker for display during courtship. Their two-toed hooves provide good balance for climbing.
Lifespan | Wild: 8–10 years. Captivity: 22 years.
Reproduction | After a 150 day gestation, females give birth to 1–4 offspring called kids. The young weigh less than a pound at birth and are quite precocious; they can stand and nurse minutes after birth and are able to run and jump within four hours after birth. They are weaned by 10 weeks and reach maturity between 8–12 months. During breeding season, the male produces a musky odor that is attractive to the females.
Behavior | Goats are very social animals that use group strength to protect themselves from predators. When threatened, the herd will form a ring with pregnant females and young in the center. Female goats will actually simulate pregnancy in order to gain the extra protection the condition invokes from the herd. Goats provide humans meat, fine leather, and milk; milk production has been the main reason for domestication. Goat’s milk has approximately the same protein content as cow’s milk, but goat’s milk is lower in lactose and higher in fat content.
Our animals | 1 female, 6 males. Born in 2012

Cool stuff
- Goats are one of the oldest domesticated species (10,000 years ago).
- Pygmy goats originated in the Cameroon Valley of west Africa. They were imported into the United States from European zoos in the 1950s for use in zoos as well as research animals. They were eventually acquired by private breeders and quickly gained popularity as pets and exhibition animals due to their good-natured personalities, friendliness and hardy constitution. Today, they are a common sight as house pets and in petting zoos.
- Goats do require grass for grazing, but can thrive in areas of thin growth that would not support other grazers such as sheep or cows.
- Goats are ruminants.
- Due to a well-developed herding instinct, goats prefer to be in groups of two or more.
- More people worldwide use goats for dairy and meat than use cows.
- Cashmere is the hair obtained from the neck region of cashmere goats, which are a subspecies of domestic goats. Cashmere is softer and three times warmer regular sheep’s wool.

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<tr>
<td>species</td>
<td>C. hircus</td>
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**AMUR TIGER**

**Range**
Mainly the Amur-Usur region of Siberia along the coast of Russia; have been spotted recently (2002) in northernmost China where they had previously been considered extirpated

**Habitat**
Mountainous coniferous, scrub oak, and birch forests of up to 3,000 feet in elevation

**Diet (wild)**
Hoof stock, predominantly deer, elk, and wild boar

**Diet (captivity)**
Carnivore diet (raw, moist meat), fasted one day a week

**Description**
Length: 8–11 feet (including tail); weight: 350–660 pounds. The world’s largest cat. Amur tigers are paler than other tigers and stripes are brown rather than black and more widely spaced than other tigers.

**Lifespan**
Wild: 10–15 years. Captivity: 16–20 years

**Reproduction**
After a gestation period of 103 days, the female gives birth to 2–3 blind, helpless cubs weighing 2–3 pounds each. The cubs nurse for 6–8 weeks, then the mother begins to take them to kills. By six months, they begin to hunt for themselves. By age two, cubs can kill large prey but generally do not leave their mothers until between ages three and five. Amur tigers may mate any time of year. A female tiger becomes sexually mature at about three years old and will give birth every 2–3 years for the next 12+ years of her life. The female is only receptive for 3–7 days, during which time a pair will mate repeatedly. Males then leave to mate with another females. Females stay closer to the mother’s range than males.

**Behavior**
Except for a mother with cubs, Amur tigers are solitary, nocturnal hunters. They stalk their prey by sneaking up within 65 feet and covering the remaining distance in a few bounds. Larger prey may take as long as three days to consume; smaller prey may be consumed in one meal. Amur tigers live in specific territories and mark their territories mainly by scent marking on trees, bushes, and the ground along the borders. They also mark trees by scratching with their claws. Male home ranges are large, sometimes 400 square miles (1,036 square kilometers). Female home ranges are much smaller and a number of females will live within one male’s home range.

**Our animals**
1 female, 1 male. Born: 03/26/2005 (male, Sivaki); 09/13/2011 (female, Ameliya). Birth place: both born at PPZ and hand-raised due to illness at birth

**Cool stuff**
- SSP at PPZ. By the 1940s, hunting had driven the Amur tiger to the brink of extinction with no more than 40 individuals remaining in the wild. The subspecies was saved when Russia became the first country in the world to grant the tiger full protection. It is estimated that there are 400–500 remaining in the wild as poaching and habitat destruction have taken their toll. The most immediate threat to the survival of Amur tigers is the demand for tiger parts on the black market. There were once eight tiger subspecies, but three became extinct in the 20th century.
- The heaviest recorded tiger was a 1,025 pound Amur male.
- Tigers are good swimmers and enjoy taking baths. Tigers have been known to cross a width of 18 miles in the water.
- Tigers are successful predators, but only one out of 10 to 20 attacks result in a successful kill.
- Tigers have no natural predators, except for humans.
- For more than 3,000 years, traditional Chinese medicine has used tiger parts to treat sickness and injury. The humerus (upper leg bone), for example, has been prescribed to treat rheumatism even though there is no evidence that it has any affect on the disease.
- Most of the wild cats, from servals to tigers, share an external mark—a white spot behind each ear. A common speculation is that the spots function as “follow me” signals to kittens. However, this idea is weakened because the spots occur in both sexes and male cats have almost nothing to do with their offspring. Perhaps the spots are a coverable badge, to be flashed as a signal of aggression. Or perhaps they appear like eyes on the back of the head to an enemy creeping up behind the cat. If so, this principle is borrowed by people in India’s Sundarban Forest who wear facial masks on the backs of their heads to prevent tigers from stalking them.

**Phylum**
Chordata

**Class**
Mammalia

**Order**
Carnivora

**Family**
Felidae

**Genus**
Panthera

**species**
P. tigris altaica

! Status: endangered
## Arctic Fox

<table>
<thead>
<tr>
<th>Range</th>
<th>Circumpolar in the northern hemisphere</th>
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<tbody>
<tr>
<td>Habitat</td>
<td>Treeless tundra and packed ice</td>
</tr>
<tr>
<td>Diet (wild)</td>
<td>Birds, lemmings, voles, hares</td>
</tr>
<tr>
<td>Diet (captivity)</td>
<td>Dog food, fish, hard-boiled eggs</td>
</tr>
<tr>
<td>Description</td>
<td>Length: 20–24 inches; tail: 11–12 inches; weight: 8–10 pounds. Short ears and muzzle; coat is grayish yellow in summer and white in winter. Hair on the soles of feet.</td>
</tr>
<tr>
<td>Lifespan</td>
<td>12–14 years</td>
</tr>
<tr>
<td>Reproduction</td>
<td>In May or June, 5–8 young are born after a seven-week gestation period. The male stays with the family and participates in helping care for the young. A second litter will be born in July or August. In winter, the family unit breaks up to hunt alone. Young are weaned at about two months. Litter size has been known to increase with increased availability of prey. Arctic foxes have 12–16 nipples and 19 cubs in one litter have been recorded.</td>
</tr>
<tr>
<td>Behavior</td>
<td>More communal and nomadic than the red fox, Arctic foxes hunt in small bands (no more than three) and do not hibernate. Camouflage is obtained by white coats in winter to hide in snow and ice, and gray-brown in summer to blend with rocks. Their short rounded ears and short muzzle are heat saving adaptations for the polar climate, as is the fur that lines the soles of their paws. Sense of smell is well developed and necessary for locating buried food in storage under snow and rocks. In periods of food shortage, Arctic foxes have been found as far south as Quebec and parts of Norway and Sweden. They have also been found within 300 miles of the North Pole. Somewhat unwary, have been known to enter camps in search of food or just out of curiosity.</td>
</tr>
<tr>
<td>Our animals</td>
<td>1 female, 1 male. Born: 05/24/2015 (female); 04/01/2014 (male). Birth place: Male is a rescue from the Detroit Area Humane Society; Great Bend Zoo, KS (female). PPZ’s male displays a “blue” color morph, in which the winter coat is more of a steely blue-gray rather than white. Over the vast expanse of Arctic foxes’ range, the white morph predominates and fewer that one in a hundred are blue. Blue foxes are most common near the coast and on smaller islands that have a higher ratio of coastline to interior. On rocky shores, where snow doesn’t settle, a white fox sticks out, but a beach-combing bluish-brown fox blends right in. The blue gene is actually dominant and white and blue morphs can occur in the same litter.</td>
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</tbody>
</table>
| Cool stuff     | • Unlike other canids, an Arctic foxes’ paws are sheathed in dense fur during the winter, giving it the species name *lagopus* which means “rabbit footed.”
• The fur of Arctic foxes changes twice every year. The winter fur is entirely white, and the summer coat ranges from gray to brown on the back, to somewhat lighter on the belly. Foxes may retain their darker coat throughout the year in areas of less severe climate.
• Arctic foxes store food for the winter by burying leftovers in crannies or under stones. They also take advantage of polar bears by following them and cleaning up after they feed on a kill. In areas where Arctic foxes are abundant, almost every polar bear may have one or more foxes following behind it.
• Arctic foxes don’t begin to shiver until it’s -94° F (-74° C). They have withstood temperatures of -100° F (-74° C).
• Arctic foxes do not hibernate and are active all year round. They build up their fat reserves in the autumn, sometimes increasing their body weight by more than 50 percent. Arctic foxes live in large dens in frost-free, slightly raised ground. The dens are complex systems of tunnels covering as much as 1,200 square yards (1,000 square meters) with multiple entrances and many have been in existence for many decades and used by many generations of foxes.
• Arctic foxes are monogamous and usually mate for life.
• Arctic foxes are able to discriminate between the barks of related family members and unknown foxes.
• Arctic foxes are excellent swimmers, crossing rivers and streams with ease. |

### Phylum
- Chordata

### Class
- Mammalia

### Order
- Carnivora

### Family
- Canidae

### Genus
- Vulpes

### Species
- V. lagopus
# Bactrian Camel

- **Status:** Critically endangered

## Range
Primarily in the central Asian deserts of the north Himalayas.

## Habitat
Steppe grasslands and rocky deserts with temperatures ranging over 100° F (38° C) in the summer to –20° F (-29° C) in the winter.

## Diet (wild)
Herbivores (grass, leaves and grain) that prefer vegetation that is prickly, dry, salty, and/or bitter.

## Diet (captivity)
Hay and grain.

## Description
Height: 7 feet; length: 7–10 feet; weight: 1,000–1,500 pounds. Bactrian camels have two humps with a thick, shaggy beige coat that falls away as the temperature rises. To protect themselves from sand and harsh conditions they live in, camels have bushy eyebrows, a double row of long eyelashes, hair inside the ears, and they can tightly close their nostrils and lips to keep out flying sand. They have wide padded feet and calloused knees.

## Lifespan
30–50 years.

## Reproduction
After a gestation period of 12–14 months, the female will give birth to a single (sometimes double) offspring every other year in March or April. Young camels are able to stand and walk when they are a few hours old. The young will nurse for about one year. Female Bactrian camels become sexually mature at about three to four years of age. Female can reproduce once every two years. Males are sexually mature at five or six years of age. During mating season, male camels will become aggressive and often bite, spit and try to sit on other males.

## Behavior
Bactrian camels travel the deserts in caravans of six to 20 individuals. The groups will be composed of adolescent males, females and their young and are lead by a single adult male. Bactrian camels rarely sweat, helping them conserve fluids for long periods of time. Their two humps store fat and convert it to water and energy. The fat helps them survive the tough conditions of the desert. As the stored fat is used up, the humps become floppy and lean to one side. Bactrian camels move slowly, but can reach up 40 mph when they need to.

## Our animals
1 female, 1 male. Born: 03/1998 (female); 05/2010 (male). Birth place: St. Louis Zoological Park (female); Minnesota Zoological Gardens (male).

## Cool stuff
- Camels can drink up to 30 gallons of water in 10 minutes and store it in special sacks around their stomach.
- An easy way to remember which camel has one or two humps: Bactrian camels have two humps—the letter “B” has two humps; Dromedary camels have one hump—the letter “D” has one hump.
- The first time food is swallowed it is not fully chewed. The partly masticated food (called cud) goes into the stomach and later is brought back up for further chewing.
- Camel races are a popular sport in Morocco. The camels go at paces similar to race horses.
- Each hump can hold up to 80 pounds of fat.
- Wild camels were tamed and domesticated 3,500 years ago; now almost all are domestic. Camels will take voice commands from their owner. Humans also use many of the camel’s by-products, especially the meat and milk.
- Bactrian camels were thought to be extinct in the wild until an expedition found some in the Gobi desert in 1957. These wild groups are in the severe danger of going extinct and little is known about them. The estimated number of wild camels ranges from 400 to 700 animals in Mongolia and 200 in China.

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<tbody>
<tr>
<td>Chordata</td>
<td>Artiodactyla</td>
<td>Camelidae</td>
<td>Camelus</td>
<td>C. bactrianus</td>
</tr>
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</table>
**Range**
East, southeast and south central Africa and northern savannas of West Africa

**Habitat**
Savanna, open forests, and grasslands especially near water, but also in dry, thorny bush land, but not deserts

**Diet (wild)**
Feed primarily on invertebrates, small reptiles, and bird eggs. Millipedes and beetles make up most of their diet; they also eat ants, crickets, termites, grasshoppers, caterpillars and earwigs. Other prey includes frogs, lizards, small snakes, ground birds, and the eggs of birds and reptiles.

**Diet (captivity)**
Carnivore diet mixed with pelleted insectivore diet; two mice/individual/day; crickets, mealworms and/or earthworms; produce. They are fed twice daily

**Description**
Length: 12–16 inches; weight: 3.3–5 pounds. Large head, small ears, short muscular limbs and a long tail almost as long as the rest of the body. Distinguished from other species by a series of black bands across the back, between the mid-back and the base of the tail. The feet and the tip of the tail are also usually dark, and the rest of the coat matches the lighter color of the fur between the black bands on the back. Have long strong claws for digging in the soil.

**Lifespan**
Wild: unknown. Captivity: up to 12 years

**Reproduction**
Gestation is 60–70 days. Females give birth in synchrony, producing large communal litters of 2–6 pups per female, which remain in the den for 3–4 weeks. “Babysitters” help watch young so mothers can join group foraging forays. Females are guarded by a dominant male and a subordinate male. Males are usually not aggressive with each other but will become aggressive when females are in estrus.

**Behavior**
Although most mongoose species live solitary lives, banded mongooses live in colonies of up to 40 individuals (with the average group about 20 individuals) with a complex social structure. They sleep together in underground dens (often abandoned termite mounds) and change dens frequently. When no refuge is available and hard-pressed by predators, the group will form a compact arrangement in which they lie on each other with heads facing outwards and upwards. Female are usually not aggressive but do live in hierarchies based on age. The older females have earlier estrous periods and larger litters. When groups get too large, some females are forced out of the group by either older females or males. The females may form new groups with subordinate males. Relations between groups are highly aggressive and mongooses are sometimes killed and injured during intergroup encounters. Nevertheless, breeding females will often mate with males from a rival group during fights.

**Our animals**
4 females, 3 males. Various ages. Came to PPZ from the Fort Wayne Children’s Zoo

**Cool stuff**
- In some locations, banded mongooses have been found in close relationship with baboons. They may enjoy greater security as a large group on the lookout for predators. Banded mongooses have also been observed removing ticks and other parasites from warthogs. The mongooses get food; the warthogs get cleaned.
- The alpha female rules the pack, emerging first every morning and deciding on the group’s foraging route. Banded mongooses forage in groups but each member searches for food alone. Low grunts are produced every few seconds for communication. They forage in the morning, rest for several hours in the shade, and then forage again in the late afternoon. Mongooses will frequent the dung of large herbivores since they attract beetles.
- When pups emerge from the den, they spend 3–5 days approaching different helpers, after which individual pups form stable associations with a single adult helper (their “escort”) and remain associated with that animal until independence (approximately 9–13 weeks). Packs forage as a cohesive unit so all escorts are exposed to begging by the whole litter. Pups receive their food almost exclusively from their escorts.

**Phylum**
Chordata

**Class**
Mammalia

**Order**
Carnivora

**Family**
Herpestidae

**Genus**
Mungos

**species**
M. mungo
### BAT-EARED FOX

**Range**
Two distinct populations of bat-eared foxes occur in Africa: *O. m. megalotis* occurs in the southern regions including southern Zambia, Angola, and South Africa; *O. m. virgatus* occurs in Ethiopia and southern Sudan extending to Tanzania.

**Habitat**
Commonly occurs in short grass lands as well as the more arid regions of the savanna.

**Diet (wild)**
Harvester termites and dung beetles can make up 80 percent of diet; occasionally eat small rodents, lizards, the eggs and chicks of birds, and plant matter. The insects they eat fulfill the majority of their water intake needs.

**Diet (captivity)**

**Description**
Length: 18–26 inches; weight: 7–12 pounds. Sandy gray with lighter fur on the belly and the inside of the ears and their bands across the forehead are white or buff.

**Lifespan**

**Reproduction**
After a gestation period of 60–70 days, the female gives birth to 1–6 pups. Bat-eared foxes are monogamous, but sometimes two females will mate with one male and share a communal den. Once lactation is done, which lasts 14–15 weeks, males take over grooming, defending, huddling, chaperoning, and carrying the young between dens. The father is very invested in the rearing of young, and he spends a great deal of time babysitting. Male care and den attendance rates have been shown to have a direct correlation with cub survival rates. While the father is watching the cubs, the mother is free to forage for food. Young disperse and leave their family groups at 5–6 months old and reach sexual maturity at 8–9 months.

**Behavior**
Bat-eared foxes use their specialized ears to locate termites, dung beetles, and other insects. They can hear larvae chewing their way out of an underground dung beetle ball. They can also detect the sound of harvesting termites chewing on short grasses. Once they locate the insects by sound, the foxes jump and quickly catch them. They will sometimes travel over 7 miles in one night when foraging for food. Bat-eared fox families have several den holes in their territory, each with many entrances and chambers. Dens are protected areas where the group sleeps, escapes from predators, and where females give birth. Predators include cheetahs, jackals, spotted hyenas, rock pythons, African wild dogs, and leopards.

**Our animals**

**Cool stuff**
- Bat-eared foxes are named for their large ears, which are also used for thermoregulation.
- To escape from predators, bat-eared foxes rely on speed and their incredible dodging ability. They can effectively reverse direction at a flat run without losing speed.
- Families of bat-eared foxes can forage together because their insect prey are replenished almost as fast as they are eaten. Since termites can escape into the ground faster than they can be eaten, bat-eared foxes lose nothing by sharing, so families of 2–3 adults with pups often forage together. When one fox hits the jackpot, everyone rushes over to join in the brief, but succulent feast.
- The need to snap up termites as quickly as possible has led to the evolution of a unique flange on bat-eared foxes' lower jaw. The muscle rooted to the flange enables the foxes to eat termites at the prodigious speed of more than three chews per second.
- Bat-eared foxes have more teeth than any other heterodont placental mammal, between 46 and 50. Their teeth are much smaller and reduced in shearing surface than the teeth of other fox species. This is an adaptation to their insectivorous lifestyle.

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<td>Carnivora</td>
<td>Canidae</td>
<td>Otocyon</td>
<td><em>O. megalotis</em></td>
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</table>
**Phylum** | **Chordata**  
**Class** | **Mammalia**  
**Order** | **Carnivora**  
**Family** | **Viverridae**  
**Genus** | **Arctictis**  
**species** | **A. binturong**  

**Range** | Southeast Asia  
**Habitat** | Canopies of tall, dense, tropical forests; lowland forests with grasslands  
**Diet (wild)** | Primarily frugivorous but will also eat insects, birds, fish, rodents, carrion, eggs, tree shoots, and leaves  
**Diet (captivity)** | Length: 2–3 feet; tail: additional 2–3 feet; weight: 20–45 pounds. Long, heavy body with short legs. Shaggy black coat; each hair tipped in white/beige. Short pointed muzzle with long whiskers. Females are 20% larger than males.  
**Description** | Mating can occur spring through fall; female may remain fertile for four years after mating. Nests are started at twilight and usually finished by dawn. Oviparous, the female lays 3–8 oval, soft-shelled eggs in the ground in June; they hatch in 75–90 days depending on soil temperature. Exhibit temperature dependent sex determination. Nests that are 22–27 degrees Celsius (72–81 F) tend to be males, and those above 28 degrees Celsius (82 F) tend to be female. Are well developed at birth (precocial) and grow at a rate of about per year during the first five years (when they sexual maturity). Growth slows down considerably after that but has been reported to continue for at least over 20 years.  
**Lifespan** | Binturongs are mostly solitary and tend to evade each other, but aren’t strictly territorial. They spend the majority of their time climbing, but also have a high level of ground activity as they are too large to jump from tree to tree. Their hind legs can rotate backwards to enhance their back claws’ ability to grasp as they climb trunks. When do they walk, they amble with flat feet. As a binturong climbs, its scent pouch drags on the bracnhes, leaving a perfumed smear that smells like buttered popcorn. In trees, its long prehensile tail acts as a fifth limb, allowing the binturong to walk upside down, using its forelimgs to pull fruit into its mouth.  
**Behavior** | Binturongs are also known as bearcats. They are the largest species in the Viverridae family, which includes civets and genets.  
**Our animals** | Unlike most mammals, the female binturong is 20% larger than the male and has rather masculine genitals. Binturongs are often described as a keystone species within their ecosystems. They are the only known disperser of strangler fig seeds, as they have the digestive enzymes required to soften its seed coat. This seed dispersal is very crucial for the persistence of these forest ecosystems. In the wild, binturongs prey on rodents and provide humans with rodent control. Binturongs are used for their fur and meat, which is considered a delicacy in some countries.  
**Cool stuff** | The only other carnivore with a prehensile tail is the kinkajou. Binturongs are used for their fur and meat, which is considered a delicacy in some countries.  

**Status**: Vulnerable
## Black-Headed Spider Monkey

**Status:** Critically endangered

<table>
<thead>
<tr>
<th>Range</th>
<th>Central America to northern South America</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat</td>
<td>Dry forests, humid forests and cloud forests, and can live up to 6,600–8,200 feet (2,000–2,500 meters) above sea level</td>
</tr>
<tr>
<td>Diet (wild)</td>
<td>Fruit; when fruit is scarce, they will consume a greater amount of leaves, flowers, seeds, bark, and honey, and occasionally small insects</td>
</tr>
<tr>
<td>Diet (captivity)</td>
<td></td>
</tr>
<tr>
<td>Description</td>
<td>Length: 20–22 inches; tail: additional 28–34 inches; weight: 18–20 pounds. Long, thin arms, hook-like hands with no thumbs. They also have a prehensile tail that is used as a fifth limb. As an infant, spider monkeys have a pink face and pink ears but as they grow, the hair on their heads turns brown. Males and females appear the same; both have bodies of very dark brown or black, depending on the subspecies.</td>
</tr>
<tr>
<td>Lifespan</td>
<td>Wild: 25 years. Captivity: 40 years</td>
</tr>
<tr>
<td>Reproduction</td>
<td>Usually a single offspring is produced; young are cared for by only the mother for 20 months before weaning. Females express readiness to mate with changes in their behavior, scent, and visual signals. The estrous cycle is 26 days and females will associate with a male for up to three days, with mating lasting 5–10 minutes.</td>
</tr>
<tr>
<td>Behavior</td>
<td>Spider monkeys travel and forage in the upper levels of the forest. When traveling, they spend more time hanging from branches, usually moving by arm swinging (brachiating) and climbing rather than walking or running on all fours. They live in groups of up to 20–30 individuals but are rarely all seen together. Spider monkeys will nearly always be traveling or resting in small groups (2–4 individuals). Each female has a “core area” of the group's home range which she uses most.</td>
</tr>
<tr>
<td>Our animals</td>
<td>1 female, 4 males. Born: 06/21/1981 (female); 02/15/1983; 07/21/1997; 11/12/1998; 12/20/1999 (males). Birth place: San Diego Zoo (female); National Zoo (Washington D.C.) (one male); the younger males are the offspring of the older male and female, born at PPZ</td>
</tr>
</tbody>
</table>

### Cool stuff
- Spider monkeys’ prehensile tails have an area of bare skin allowing for a better grip. This bare patch of skin has its own unique “tail print,” much like our fingerprints.
- The hands and feet of spider monkeys are adapted for climbing. Black-headed spider monkeys lack a thumb, which increases the strength of their grip and helps with climbing.
- Only New World primates have prehensile tails.
- Black-headed spider monkeys can leap in excess 30 feet from branch to branch.
- Researchers and observers of spider monkeys of South America look for a scrotum to determine the animal sex because female spider monkeys have pendulous clitorises long enough to be mistaken for a penis.

<table>
<thead>
<tr>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
<th>Genus</th>
<th>species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chordata</td>
<td>Mammalia</td>
<td>Primates</td>
<td>Atelidae</td>
<td>Ateles</td>
<td>A. fusciceps rufiventris</td>
</tr>
</tbody>
</table>
**Bongo**

<table>
<thead>
<tr>
<th>Range</th>
<th>Central Congo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat</td>
<td>Open woodlands and adjacent meadows, thickets and gardens; often hear shallow ponds, swamps or streams</td>
</tr>
<tr>
<td>Diet (wild)</td>
<td>Browser, eating tips, shoots, trailers, and tender bushes</td>
</tr>
<tr>
<td>Diet (captivity)</td>
<td>Length: 7½–8 feet; weight: 500–900 pounds (males), 450–550 pounds (females). Smooth, glossy bright chestnut red coat with a dark muzzle, white chevron between the eyes, two white cheek spots, a whitish collar at base of neck, black and white spinal crest and many narrow but clear white vertical stripes on the body with contrasting black and white markings on the legs. Horns are present in both sexes, heavy and smooth with an open spiral of 1–1½ turns. Male horns are massive; females are thinner. Tail is tufted at the tip, and a stiff mane runs from shoulders to rump.</td>
</tr>
<tr>
<td>Lifespan</td>
<td>18–20 years</td>
</tr>
<tr>
<td>Reproduction</td>
<td>One offspring is born after a gestation period of 9½ months. Newborns weighing about 43 pounds and are up and nursing just hours after birth (precocial). Young have same color pattern of their parents, but are lighter in color. Sexual maturity in females is reached in their second year. Births occur in the wild usually in December or January.</td>
</tr>
<tr>
<td>Behavior</td>
<td>Bongos are the largest known forest-dwelling antelope and the only forest antelope to form herds. These herds range anywhere from five or six bongos, all the way up to 50, foraging for food together. More than one male is usually in a herd, indicating that bongos are fairly non-territorial. These animals are both diurnal and nocturnal. Bongos stay within the bushes and shrubs of the forest during the day and only come out to the salt licks during the night. They also have a long prehensile tongue used to grasp bundles of leaves. Horns can be used to pull down high branches. They are very shy and swift. Bongos depend on hearing more than sight or smell, and when fleeing through dense underbrush, they will lay their horns on their back so the horns don’t impede their escape. Bongos prefer to go under or around obstacles rather than over them.</td>
</tr>
<tr>
<td>Our animals</td>
<td>1 female, 1 male. Born: 03/2003 (male, Bock); 10/2008 (Bella). Birth place: Busch Gardens (Bock); Virginia Zoological Park (Bella)</td>
</tr>
<tr>
<td>Cool stuff</td>
<td>• There are many reputed magical powers and strange abilities reported about bongos by village natives, including: 1) Bongos can hang by their horns from branches and drop down on unsuspecting hunters; 2) Bongos eat poisonous plants so their meat won’t be edible to humans; 3) When pursued, bongos dive underwater and stay there until the following dry season, losing their fur and feeding on fish; and 4) Touching bongos cause leprosy. These beliefs have helped to protect bongos, but habitat destruction and poaching are now a threat to their survival.</td>
</tr>
</tbody>
</table>

! Status: critically endangered

<table>
<thead>
<tr>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
<th>Genus</th>
<th>species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chordata</td>
<td>Mammalia</td>
<td>Artiodactyla</td>
<td>Bovidae</td>
<td>Tragelaphus</td>
<td>T. euryceros isacii</td>
</tr>
</tbody>
</table>
### Cotton-Top Tamarin

**Status:** critically endangered

<table>
<thead>
<tr>
<th>Range</th>
<th>Colombia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat</td>
<td>Lowland rain forests and mountain forests on the slopes of the Andes, with a tendency to occupy the small branches of the upper canopy, rarely descending to lower areas</td>
</tr>
<tr>
<td>Diet (wild)</td>
<td>Sap, gum, as well as fruits, nuts, and nectar, occasionally insects and small reptiles, frogs, and rodents</td>
</tr>
<tr>
<td>Diet (captivity)</td>
<td>Monkey chow, fruits</td>
</tr>
<tr>
<td>Description</td>
<td>Length: 7–8 inches; tail: additional 10–11 inches; weight: 1 pound. A small monkey with a crest of long, white hair from forehead to the nape of the neck that flows over the shoulders. The back is brown; underparts, arms and legs are whitish to yellow. Rump and inner thighs are reddish orange and the tail is reddish orange toward the base, and blackish toward the tip. Non-opposable thumbs, and the nails of the digits are claw-like except for the first digit on each toe.</td>
</tr>
<tr>
<td>Lifespan</td>
<td>Wild: 10 years. Captivity: 7–16 years</td>
</tr>
<tr>
<td>Reproduction</td>
<td>The female gives birth, usually twins, after a gestation period of 140–150 days, and are about 20 percent of the weight of the mother at birth. The father and other members of the group care for the youngsters, returning them to the mother for nursing. The babies can move on their own in 18–24 days, although the father allows them to ride on his back until about three months of age. They are weaned in 8–10 weeks. They are usually monogamous. The male has a courtship display in which he dances and shows off his mane while standing upright. In the wild, pregnant females and suckling young have only been observed between January and June. Males reach sexual maturity at about 24 months and females around 18 months.</td>
</tr>
<tr>
<td>Behavior</td>
<td>Cotton-top tamarins live in groups usually dominated by one mated pair and their offspring. Groups average 3–9 individuals but can be as large as 19. Larger groups may break up into smaller groups as group size increases. Individuals in these groups are not necessarily all related. In addition to the dominant mated pair and their young, there may be transient individuals, probably young animals of both sexes. Cotton-top tamarins are diurnal with keen eyesight, hearing, and smell for hunting and detecting danger. They travel 2–4 miles a day foraging for food and seek sleeping spots high in the forks of trees.</td>
</tr>
<tr>
<td>Our animals</td>
<td>1 female. Born: 05/1996</td>
</tr>
</tbody>
</table>
| Cool stuff     | • SSP at PPZ. Cotton-top tamarins are currently classified as critically endangered and are one of the rarest primates in the world with only 6,000 individuals left in the wild. It is thought that up to 40,000 cotton-top tamarins were caught and exported for use in biomedical research before 1976 when CITES gave them the highest level of protection and all international trade was banned.  
• Cotton-top tamarins have over 30 calls, including chirps, shrill calls, squeaks, and other bird-like calls, including specific calls associated with food preferences.  
• Cotton-top tamarins have been extensively studied for their high level of cooperative care, as well as altruistic and spiteful behaviors. Communication between cotton-top tamarins is sophisticated and shows evidence of grammatical structure, a language feature that must be acquired. |

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**Phylum:** Chordata  
**Class:** Mammalia  
**Order:** Primates  
**Family:** Callithricidae  
**Genus:** Saguinis  
**species:** S. oedipus
**Range**  |  Worldwide (domesticated)
---|---
**Habitat**  |  Original habitats were cool, temperate grasslands, steppes, and savannahs, but also semi-deserts, swamps, marshes, and woodlands
**Diet (wild)**  |  Grasses
**Diet (captivity)**  |  Hay and grains
**Description**  |  Height: less than 58 inches (14.2 hands); weight: 500–800 pounds. Compared to other horses, ponies often exhibit thicker manes, tails and overall coat, as well as proportionally shorter legs, wider bodies, thicker necks, and shorter heads with broader foreheads. Coats vary in color, from white to black and including reds, browns, and yellows, as well as a wide variety of patterns.
**Lifespan**  |  50 years
**Reproduction**  |  A female gives birth to a single offspring after a gestation period of 11 months. Foals are born in the spring, precocial and well-developed, usually able to stand within an hour of birth and walk within four to five hours. It takes females four to five years, and males six to seven years, to reach full reproductive maturity. Young males are labeled colts; young females are fillies.
**Behavior**  |  Ponies are generally considered intelligent and friendly, though sometimes they also are described as stubborn or cunning. The differences in opinion are often the result of an individual pony’s degree or proper training. The eyes and ears of horses are especially suited for detecting danger. The flexible ears rotate 180 degrees independently of one another listening for the slightest sound of a predator. The eyes are situated high and on the sides of the head enabling horses to detect motion on either side of their body or from behind. Their nostrils, muzzles and cheeks have whiskers that are used to perceive the environment through touch.
**Cool stuff**  |  • Domesticated ponies of all breeds originally developed from the need for a working animal that could fulfill specific draft and transportation needs while surviving in harsh environments. They are remarkably strong for their size. Breeds such as the Connemara pony are recognized for their ability to carry a full-sized adult rider. Pound for pound ponies can pull and carry more weight than a horse.
• Nearly all pony breeds are very hardy and share the ability to thrive on a more limited diet than that of a regular-sized horse, requiring half the hay for their weight as a horse, and often not needing grain at all.
• The horse has the largest eye of any land mammal.
• Currently, there are seven known species of horses, asses and zebras in the Equid family. Of those, five species are endangered. The only true wild horse in existence today is the Przewalski’s horse. Captive breeding efforts in zoos in the United States have resulted in the reintroduction of this endangered species to its homeland in Mongolia and China.
• Zoologists have been able to piece together a more complete outline of the evolutionary lineage of the modern horse than of any other animal, much of it found in North America. Horses existed in North America until about 10,000 years ago; however, all equid species in North America ultimately became extinct. When the Spanish colonists brought domestic horses from Europe, beginning in 1493, escaped horses quickly established large wild herds. These feral horses eventually became known as mustangs.
**Eastern Black Rhinoceros**

- **Range**: Eastern African black rhinos once lived throughout all of southeastern Africa; current range: small pockets of ranges in southeastern Africa.

- **Habitat**: Mainly found in transitional zones between grassland and forest, in thick thorn bush or acacia scrub; habitats are usually within 15 miles of a permanent water source.

- **Diet (wild)**: Variety of vegetation, but mainly succulent plants; show a preference for Acacia species.

- **Diet (captivity)**: Wild herbivore pelleted feed plus other things daily: apples, sweet potatoes, carrots, and greens. Their favorite foods by far are the leaves and branches (browse), always eating them before their hay or produce. The branches are also hung up in their stalls at night for them to play with and eat.

- **Description**: Length: 9½–12 feet; weight: 1,750–4,000 pounds. Skin is grayish to brownish in color (often concealed by a coating of mud), thick, scantily haired and wrinkled. The grooves in their skin are furrowed and pleated, giving the appearance of armor. Limbs are short and stout to support weight. The tail has stiff bristles. They have a prehensile upper lip. Black rhinos have two horns which are made from keratin instead of bone. Females tend to have longer and thinner horns than males.

- **Lifespan**: Wild: 35 years. Captivity: 45 years

- **Reproduction**: Gestation is 15 months and females give birth every 2–5 years. Calves weigh close to 90 pounds at birth. The baby is hidden by its mother for first week after birth. After that, the mother and calf use specific vocalizations to find one another: the mother pants and the calf squeals. Calves are weaned at around 18 months but remain dependent on their mothers for up to four years. Females undergo their first estrus cycle at age five.

- **Behavior**: Adult black rhinos are typically solitary creatures. Black rhinos rely most on their hearing and especially their sense of smell to assess their environment. They have poor vision, with the ability to see only 80 to 100 feet away. They eat an average of 50 pounds of food each day. Black rhinos use their characteristic prehensile upper lip to grab plants and guide them into their mouths, where their cheek teeth can do the rest of the work. In addition, black rhinos use their horns to gain access to higher branches by breaking or knocking down plants. Rhinos will make noises such as squealing or grunting when excited. They often wallow in mud holes, covering themselves with mud to counteract heat and protect them from flies, and often sleep in the mud holes as well. Water holes and mineral licks are visited daily. Rhinos sleep both standing and laying down.

- **Our animals**: 1 female (Dopsee). Born: 07/06/2007, at Sedgwick County Zoo, Wichita, Kansas

- **Phylum**: Chordata
- **Class**: Mammalia
- **Order**: Perissodactyla
- **Family**: Rhinocerotidae
- **Genus**: Dicerors
- **Species**: D. bicornis michaeli

- **Cool stuff**:  
  - Black rhinos are very agile for such a large animal. They can run up to 28 miles per hour for short distances.  
  - Lions prey on young rhinos, but adults don't have any natural enemies.  
  - Black rhinos have a sedentary lifestyle and remain in one general area. They are less active during the middle of the day, using mornings and evenings to eat, drink, and move around.  
  - When startled, rhinos tend to run away from the source. While fleeing, rhinos issue a series of snorts and curl their tails until they calm down. Once the initial scare has passed, the rhino’s curiosity kicks in and it will examine the source with inquisitive charges.  
  - Black rhinos and oxpeckers are involved in a mutualistic relationship: the oxpeckers eat parasites taken from the rhino’s skin. Additionally, oxpeckers are able to warn rhinos of approaching predators because their vision is much better than that of the rhino’s.  
  - Black rhinos are distinguished from white rhinos by their the pointed, prehensile upper lip, as opposed to the square lips found on white rhinos. Additionally, black rhinos have smaller heads and shorter ears and horns than white rhinos.  
  - The population of black rhinos has declined by 98 percent since 1960, mainly as a result of poaching. There are less than 1,000 eastern black rhinos in the world, both in the wild and in zoos. There are two other sub-species of black rhino that are more numerous, bringing the total estimated population in 2010 to just under 5,000. There have been alarming increases in poaching and the illegal trade of rhino horn in recent years. In areas that are well-managed and well-protected, rhino numbers are increasing, but not enough to offset the loss due to poaching in other areas.  
  - Rhino skin is up to 2 inches thick (an inch thicker than an elephant’s) and is one of the fastest healing structures known to man. Cuts can heal in one day.
## GOLDEN LION TAMARIN

**Range**
Atlantic coast of eastern Brazil

**Habitat**
Mainly canopy of the rain forest in the coastal lowlands

**Diet (wild)**
Mainly fruits during the wet season; tree saps and gums during the dry season; also eat insects and small vertebrates such as lizards, snails, frogs, snakes, birds and their eggs

**Diet (captivity)**
Monkey chow, fruit and vegetables

**Description**
Length: 10 inches; tail: 15 inches; weight: 1–2 pounds. Males are larger than females. Derives its name from a mane of long golden-colored hair on the top of the head, cheeks and throat. Occasionally orange, black, or brown coloration is seen on the tail and forepaws. The species has non-opposable thumbs and the digits are claw-like. Their partially webbed fingers give them a firm hold on tree limbs, and their fingers are almost as long as their forearms. Their extremely long tails are not prehensile but help them balance as they move across vines and jump from branch to branch.

**Lifespan**
Wild: 10–15 years. Captivity: 24 years

**Reproduction**
After a gestation period of 125–132 days, twins are usually born; three and four infants are not unheard of. The babies are about a third the body weight of the mother. There are 1–2 litters per year. Birth season is between September and March. Females reach sexual maturity at about 18 months and males at about two years. Most live in reproductive groups that occupy stable territories. Cooperative breeders, all adult members of a group help to carry and feed the offspring of the group’s reproductive female. The father is particularly devoted and becomes the primary babysitter, returning the infant to the mother only for nursing, which takes no more than 15 minutes.

**Behavior**
Diurnal and predominantly arboreal, golden lion tamarins are usually found at heights of 10–30 feet (3–10 meters) above the forest floor, where they inhabit abandoned nest holes. They live in small family groups of 3–8. Group members groom each other to strengthen social bonds and youngsters are very playful. Golden lion tamarins are territorial and rarely stray far from their nest hole. As fruit and nectar eaters, they play a role in pollination, and by eating insects they also control insect populations, as well as their other small prey. Their main predators are snakes, birds of prey, and wild cats.

**Our animals**
1 female, 1 male (siblings). Born: 03/2006. Birth place: Audubon Zoo, New Orleans

**Cool stuff**
- SSP at PPZ. There has been a massive reintroduction effort to conserve golden lion tamarins through a cooperative effort of zoos and naturalists. About 1,500 golden lion tamarins live in the wild, most in or near the Reserva Biológica de Poço das Antas in the state of Rio de Janeiro. About 450 live in zoos worldwide. The protected habitat has been developed in Brazil has become a source of pride to Brazilians and a national symbol of conservation awareness. It is estimated that approximately one-third of the wild population are descendants of captive born and reintroduced individuals.
- When rival groups meet, golden lion tamarins engage in ritual scolding and scent marking but rarely fight.
- Golden lion tamarins are very vocal: 17 different calls have been documented.
## Gray Wolf

**Status:** endangered in Michigan

### Range

Once the world’s most widely distributed mammal, present distribution is more restricted: occur primarily in wilderness and remote areas, especially in Canada, Alaska and the northern United States, Europe, and Asia.

### Habitat

Wide variety of habitats, from forests, taiga, tundra, deserts, plains and mountains.

### Diet (wild)

Primarily hunt in packs for large prey such as moose, elk, bison, musk oxen, and reindeer/caribou.

### Diet (captivity)

Dry dog food, canine diet, and occasional carrion or fish.

### Description

- **Height:** 26–32 inches; **length:** 5–6 feet; **weight:** 80–90 pounds. Males are generally 5–10 pounds heavier than females. Coat can vary from black, brown, gray, to almost white. **Tail:** straight; longer legs and feet nearly twice the size of a dog of comparable size.

### Lifespan

- **Wild:** 8–10 years. **Captivity:** 10–12 years.

### Reproduction

- **Gestation lasts:** 60–63 days and litter size ranges from 1–14 pups; the average size is six or seven. Pups remain in the den until they are 8–10 weeks old. Females stay with their pups almost exclusively for the first three weeks. Pups are cared for by all members of the pack, who are usually related. Until they are 45-days-old, pups are fed regurgitated food by all pack members; after that pups are fed meat. The young begin to hunt with the pack at approximately 10 months old. Most young gray wolves disperse from their natal pack when they are 1–3 years old. Breeding occurs between January and April.

### Behavior

Mostly active in late afternoon and evening, wolves live in extended family groups (packs) comprised of parents, yearling pups and pups of the current and sometimes previous year. The pack is territorial, using scent marking and vocalizations to define their home range, which varies in size from 40–400 square miles (48–478 square kilometers). Packs in forested areas occupy more stable territories, while tundra packs tend to be more nomadic as they follow migrating herds of antelope and caribou. Wolves hunt cooperatively to bring down prey much larger than themselves. Their principal enemy is man. Thanks to Hollywood, folklore and some novels depicting their “viciousness,” wolves have been hunted to extinction in some areas. There are a number of reintroduction efforts taking place within the U.S. Continued threats to the worldwide population include competition with humans for livestock and game species, exaggerated concern by the public regarding their threat and danger, and fragmentation of habitat, with resulting areas becoming too small for populations to have long-term viability.

### Our animals

1 female, 2 males. Born: 05/2009 (female, Tala); 04/2014 (males [brothers], Kamots and Tikanni). Birth place: New York State Zoo at Thompson Park

### Cool stuff

- Their original worldwide range has been reduced by about one-third by deliberate persecution due to perceived predation on livestock and the fear of attacks on humans. In the lower 48 states, there are currently about 2,600 gray wolves, with nearly 2,000 in Minnesota. Alaska currently manages 6,000–8,000 gray wolves and Canada’s population is estimated at about 50,000. The wolves in Canada are managed by provincial governments and are not currently threatened.
- Wolves have a “feast or famine” biology that allows them to eat up to 25 pounds of food at one time.
- Pound for pound, a wolf’s fur provides better insulation than a dog’s and won’t collect ice when warm breath condenses against it.
- Wolves spend an average of 8–10 hours of every 24 on the move, mostly during crepuscular hours. They travel great distances and have tremendous stamina: wolves on Isle Royale travel an average of 30 miles every day.
- The largest wolf on record was 175 pounds, killed in Alaska in 1939.
- Researchers long thought that modern gray wolves were ancestor to dogs. A 2015 genetic analysis overturns that hypothesis and suggests that an extinct type of wolf gave rise to dogs before the agricultural revolution around 12,000 years ago.
- A wolf’s jaws can crush with 1,500 lbs/sq2, compared to a German shepherd’s 750 lbs/sq2.
- In 1947, a study conducted on captive, unrelated wolves was the foundation of the alpha wolf male/female dynamic which has become so ingrained in popular culture. This developed into the belief that dominance plays a key role in wolf social orders and that wolves are naturally inclined to dominate one another. A key problem with this study is that it didn’t involve any study of wolves in the wild. Subsequent studies of wild wolves have found that wolves live in families: two parents along with their younger cubs. Wolves do not have an innate sense of rank; they are not born leaders or followers. Alphas are simply what we would call the offspring by virtue of being the parents. In any other social group “parents.” Offspring follow the parents as naturally as they would in any other species. No wolf “wins” a role as leader of the pack; the parents just assert dominance over the offspring by virtue of being the parents. This doesn’t mean that wolves don’t display social dominance; wolves (and other animals, including humans) display social dominance, but it isn’t always easy to boil dominant behavior down to simple explanations. Dominant behavior and relationships can be highly situational and vary greatly from individual to individual.

### Taxonomy

<table>
<thead>
<tr>
<th>Phylum</th>
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<th>Order</th>
<th>Family</th>
<th>Genus</th>
<th>Species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chordata</td>
<td>Mammalia</td>
<td>Carnivora</td>
<td>Canidae</td>
<td>Canis</td>
<td>C. lupus</td>
</tr>
</tbody>
</table>
GUINEA HOG

<table>
<thead>
<tr>
<th>Range</th>
<th>Domesticated from wild boars; listed as critical (rare “heirloom” breed) on the conservation priority list of the American Livestock Breeds Conservancy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat</td>
<td>Rare breed of domestic pig originating in the southeastern U.S.</td>
</tr>
<tr>
<td>Diet (wild)</td>
<td>Omnivore; hardy grazers and foragers. Shrubs, weeds, bird eggs, snakes, mice, grasshoppers, roots, nuts, tubers</td>
</tr>
<tr>
<td>Diet (captivity)</td>
<td>Pig chow</td>
</tr>
<tr>
<td>Description</td>
<td>Height: 22–27 inches; length: 46–56 inches; weight: 150–250 pounds. One of the smaller bodied pigs, they are generally black in color, but occasionally some will have a reddish tint to them. They have upright ears, a hairy coat and a curly tail.</td>
</tr>
<tr>
<td>Lifespan</td>
<td>10–15 years</td>
</tr>
<tr>
<td>Reproduction</td>
<td>After a gestation period of almost 4 months, the female gives birth to 1–15 piglets; six the most common litter size. Sows can have up to two litters per year. Males reach sexual maturity at 6–8 months and females at 8 months, although they do not reach full adult size until about two years old.</td>
</tr>
<tr>
<td>Behavior</td>
<td>Guinea hogs are noted for their small size, intelligence, docile and friendly temperaments and their ability to produce outstanding meat and flavorful lard on pasture and forage.</td>
</tr>
<tr>
<td>Our animals</td>
<td>2 females, 2 males. Born: 12/2006 (both females); 04/2009 (male) 04/2010 (male). Captive born</td>
</tr>
</tbody>
</table>

Cool stuff

- Pigs’ long flattened snouts allow for a heightened sense of smell. They are used to find truffles in many European countries.
- Pigs were domesticated approximately 5,000–7,000 years ago.
- Pigs are very intelligent and can be trained to perform numerous tasks and tricks. They will wag their tails when happy.
- Pigs are social animals, typically living in female-dominated groups, called sounders.
- Wild boars (Sus scrofa) are the ancestor of most domesticated pigs. Archaeological evidence suggests that pigs were first domesticated as early as 13,000–12,700 BCE in the Tigris Basin in western Asia. There was another domestication in China which took place about 8,000 years ago. DNA evidence shows that the first domestic pigs in Europe had been brought from the Near East. This led to the domestication of local European wild boar, resulting in a third domestication event with the Near Eastern genes dying out in European pig stock. Domestic pigs have much more developed hindquarters than their wild boar cousins, to the point where 70 percent of a pig’s body weight is concentrated in the posterior. This is the opposite for wild boar, where most of their muscles are concentrated in the head and shoulders region.

<table>
<thead>
<tr>
<th>Phylum</th>
<th>Chordata</th>
</tr>
</thead>
<tbody>
<tr>
<td>Class</td>
<td>Mammalia</td>
</tr>
<tr>
<td>Order</td>
<td>Artiodactyla</td>
</tr>
<tr>
<td>Family</td>
<td>Suidae</td>
</tr>
<tr>
<td>Genus</td>
<td>Sus</td>
</tr>
<tr>
<td>species</td>
<td>S. scrofa</td>
</tr>
</tbody>
</table>
Range: Native range all along the Andes mountains, but are not found in the wild. An indispensable pack animal, herds are maintained extensively by the native human populations in Argentina, Ecuador, Chile, Bolivia and Peru.

Habitat: Alpine grass and shrub land.

Diet (wild): Grass and shrubs.

Diet (captivity): Grain and hay.

Description: Height: 4 feet (shoulder); Length: 5–6 feet; weight: 200–450 pounds. Coats may be solid, spotted, or marked in a variety of patterns. Wool colors range from white to black and many shades of gray, beige, red and roan. Two-toed foot with a thick leathery pad on each foot's sole to assist on rocky trails and gravel slopes. Front of each toe has a sharp nail used for traction and defense.

Lifespan: 15–29 years.

Reproduction: After a gestation period of 11 months, one offspring (called a cria) is born weighing 20–35 pounds. The mother neither licks the newborn nor eats the afterbirth, but the young will stand and follow its mother 15–30 minutes after birth. The female comes into estrous 24 hours after giving birth but will not breed for another two weeks. Breeding occurs seasonally and mating takes place while lying down on their chests. Copulation may last 10–20 minutes; females are induced to ovulate once breeding occurs.

Behavior: Llamas are diurnal herbivores, with three-compartment stomachs, that live in groups or herds. They are gentle and curious with a calm nature. Some evidence suggests a territorial system, with males maintaining a harem of breeding females. Head and ear position is important in communication. Llamas will first run from danger, but if cornered can strike with their front feet. Llamas have an unusually high content of hemoglobin in their bloodstream and oval shaped red blood corpuscles, both of which are adaptations for surviving in an oxygen-poor, high altitude environment.

Our animals: 2 females, 1 male. Born: 03/1999, 06/1999 (females); 09/1996 (male).

Cool stuff:
- Llamas don't bite (they lack upper incisors), but are accurate spitters, hitting objects as far as 6 feet away.
- Llamas which are well-socialized and halter-trained after weaning are very friendly and pleasant to be around. They are extremely curious and most will approach people easily. However, llamas that are bottle-fed or over-socialized and over-handled as youth will become extremely difficult to handle when mature and they will begin to treat humans as they treat each other, which is characterized by bouts of spitting, kicking and neck wrestling.
- Llamas will lay their ears back when agitated.
- Llamas were first domesticated 4,000–5,000 years ago and are prized for their meat, milk and wool production. Llama wool is very soft and lanolin-free.
- When carrying a pack, llamas can carry up to 30 percent of their body weight for 5–8 miles.
- Llamas are used as guard animals in the sheep industry. Predation losses drop significantly when llamas are used. Research suggests the use of multiple guard llamas is not as effective as one. Multiple males tend to bond with one another, rather than with the livestock, and may ignore the flock.
- Guanacos and vicuñas live in the wild, while llamas, as well as alpacas, exist only as domesticated animals.
- Llamas are in the same family as camels.

<table>
<thead>
<tr>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
<th>Genus</th>
<th>species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chordata</td>
<td>Mammalia</td>
<td>Artiodactyla</td>
<td>Camelidae</td>
<td>Lama</td>
<td>L. glama</td>
</tr>
</tbody>
</table>

Our animals: 2 females, 1 male. Born: 03/1999, 06/1999 (females); 09/1996 (male).
### MANDRILL

**Status:** vulnerable

<table>
<thead>
<tr>
<th><strong>Phylum</strong></th>
<th><strong>Class</strong></th>
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<th><strong>Genus</strong></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Chordata</td>
<td>Mammalia</td>
<td>Primates</td>
<td>Cercopithecidae</td>
<td>Mandrillus</td>
<td>M. sphinx</td>
</tr>
</tbody>
</table>

**Range**: Cameroon, Congo, Equatorial Guinea, and Gabon

**Habitat**: Dense, primary rain forest floor and sometimes secondary rain forest, gallery forest and coastal forest; banana and cassava plantations during the dry season

**Diet (wild)**: Fruit, leaves, seeds, nuts, shoots, arthropods, crabs, fish, small vertebrates, and cultivated crops like manioc and oil-palm fruits

**Diet (captivity)**: Monkey chow, fruits and vegetables

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<th><strong>Range</strong></th>
<th>Cameroon, Congo, Equatorial Guinea, and Gabon</th>
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<td>Fruit, leaves, seeds, nuts, shoots, arthropods, crabs, fish, small vertebrates, and cultivated crops like manioc and oil-palm fruits</td>
</tr>
<tr>
<td><strong>Diet (captivity)</strong></td>
<td>Monkey chow, fruits and vegetables</td>
</tr>
</tbody>
</table>

**Description**: Length: 24–30 inches; weight: 24–110 pounds. There is pronounced sexual dimorphism, with dominant males weighing almost four times more than females. Males also have long canines. Stout-bodied with a short non-prehensile tail, prominent brow ridges, and small, close-set, sunken eyes. The ribbed bare skin on the adult male’s cheeks is bright blue, with bright red on the nose; the buttock pads are pink to crimson, shading to bluish; the beard and neck are yellow. Females are duller in color.

**Lifespan**: Wild: 20–30 years. Captivity: 45 years

**Reproduction**: Females give birth to a single offspring after a gestation period of 5–6 months. Births may occur during any time of the year. The mother transports the infant on her belly for the first weeks, then on her back. Dominant males will guard females during estrus, which is indicated by a change in the color of the females’ buttocks. The dominant male fathers all offspring within a troop.

**Behavior**: Mandrills live in troops of about 20 dominated by a single older male. The troop is totally controlled by the dominant male with aggressive behaviors, such as raised eyebrows, ground slapping, and open mouth threat, or yawn, exposing his large canines. Subordinates respond with submissive behaviors such as repeated sideways glancing, cowering or crouching, and grimacing. Young are tolerated until they reach a certain age when the dominant male begins to instruct the young on proper mandrill behavior. Mother/daughter bonds last into adulthood; maternal bonds with sons last until sexual maturity, when juvenile males leave their natal group, often forming bachelor troops. Mandrills groom each other, removing parasites and dead skin, but also reducing tension. This diurnal animal moves through the forest floor quadrupedally, with the dominant male leading the way.

**Our animals**: 1 female, 1 male. Born: 11/1992 (oldest male, Loco); 08/1996 (female, Susannah). Birth place: Jacksonville Zoo, Fla. (Loco); Oregon Zoo (Susannah)

**Cool stuff**: - SSP at PPZ.
- Mandrills have an ischial callosity, or sitting pad, on their rumps which provide a comfortable cushion on the forest floor.
- Mandrills have cheek pouches; at a feeding site, subordinates will stuff cheek pouches and run to a safe area to peacefully eat what they were able to gather.
- Mandrills’ bright coloring is a key feature in social behavior. When excited, the blue color of the pad on their buttocks intensifies, their chest turns blue, and red dots may appear on the wrists and ankles. The flashing of the bright rump, which originated as a signal of receptiveness in estrous females, has also been interpreted as an act of submissiveness in both sexes.
- To exhibit playfulness, a male mandrill shakes his head and shoulders; this is an invitation to be groomed. The exposure of teeth with the lips slightly lifted, accompanied by occasional chatter, is a sign of friendliness and general well-being.
- When angered, mandrills slap the ground violently and may stare intently at an observer while scratching their forearm or thigh.
- A yawning gesture is given when mandrills are unable to carry out a desired activity, such as mating or fighting. This yawning also occurs as part of a threat where the mandrill spreads its arms, displays its lowered head, and flashes its powerful teeth.
### Range
Angola, Namibia, South Africa and south Botswana

### Habitat
Savannah, deserts, and semi-deserts

### Diet (wild)
Insects, birds, mice and lizards

### Diet (captivity)
Dry dog food, assorted produce and crickets for treats

### Description
Length: 12 inches; weight: 2 pounds. Coat is tan to light gray with irregular transverse bands on the back. The tip of tail, ears and rings around eyes are black.

### Lifespan
Wild: 10 years. Captivity: 17 years

### Reproduction
After a 73-day gestation period, the female gives birth to 2–5 young in a nest at the end of a burrow. Breeding occurs in the warmest and wettest months of the year.

### Behavior
Meerkats are diurnal and spend their nights underground in burrow or warrens. The morning hours may be spent “sunbathing” in burrow openings. Their long front claws serve to construct these complex burrow systems, as well as being useful for digging for food. They may also inhabit burrows dug by other animals. Meerkats are gregarious and live in groups of 5–40. Their matriarchal society will band together to drive off predators. They maintain communication while foraging with soft grunts. Meerkats have been shot or gassed in their burrows as rabies carriers. Even so, populations continue to flourish.

### Our animals

### Cool stuff
- “Sentinel” behavior is one of their trademarks: At least one meerkat stands upright on hind legs and keeps a lookout for possible danger, with each member taking a turn. When danger is present, the sentinel barks an alarm call, sending everyone to cover. Sentry duty is usually approximately an hour long.
- A group of meerkats is called a mob, gang or clan. Clans usually contain about 20 meerkats, but some super-clans have 50 or more members.
- Meerkats babysit the young in the group. Females that have never produced offspring often lactate to feed the alpha pair’s young. They also protect the babies from threats, often endangering their own lives. On warning of danger, babysitters take the young underground to safety and are prepared to defend them if the danger follows.
- Meerkats are immune to certain types of venom, including the very potent venom of the scorpions in the Kalahari Desert.
- In the movie *The Lion King*, Timone is a meerkat.

---

**Phylum**
Chordata

**Class**
Mammalia

**Order**
Carnivora

**Family**
Herpestidae

**Genus**
Suricata

**Species**
*S. suricatta*
### MOOSE

- **Phylum**: Chordata
- **Class**: Mammalia
- **Order**: Artiodactyla
- **Family**: Cervidae
- **Genus**: Alces
- **Species**: A. americanus

#### Range
Temperate to subarctic in the Northern Hemisphere

#### Habitat
Boreal and mixed deciduous forests

#### Diet (wild)
Terrestrial vegetation, mainly forbs and other non-grasses and fresh shoots from trees

#### Diet (captivity)
Pelleted diet and browse, primarily willow

#### Description
Height: 4½–7 feet at the shoulder; weight: 440–1,500 pounds. Dark brown body with long faces and muzzles that dangle over their chins. A flap of skin known as a bell sways beneath the throat. Males are immediately recognizable by their huge antlers, which can spread 6 feet from end to end.

#### Lifespan
Wild: 15–25 years

#### Reproduction
Females give birth to one or two calves in the spring, each weighing about 30 pounds. Calves grow quickly and can outrun a person by the time they are just five days old. Calves stay with their mothers until the following spring. Mating occurs in September and October. The males will seek several females to breed with. Both sexes call to each other during the mating season: Males produce heavy grunting sounds that can be heard up to one-third of a mile away, while females produce wail-like sounds.

#### Behavior
Unlike most other deer species, moose are solitary animals and do not form herds. They are mostly diurnal. Moose can become very aggressive when frightened, and females with young or males in rut can be especially dangerous. Raw numbers show that moose injure more people than almost any other wild mammal (only hippos injure more). They have very flexible joints and can kick with both their front and back legs.

#### Our animals
1 female, 1 male. Born: 05/2013 (female, Willow); 06/2014 (male, Meeko). Wild born in Alaska: female was orphaned when her mother was hit by a car and the male was found separated from his mother.

#### Cool stuff
- Moose are the largest member of the deer family.
- Moose are so tall that they prefer to browse higher grasses and shrubs because lowering their heads to ground level can be difficult.
- Antlers take 3–5 months to fully develop, making them one of the fastest growing animal organs. Moose antlers can add up to a pound of new antler per day. Other than yearling moose, any attempt to judge a moose's age is purely guesswork. In fact, very old moose have antler development that is usually misshapen. Discarded antlers represent a source of calcium, phosphorus and other minerals and are often gnawed upon by other animals, including squirrels, porcupines, rabbits and mice.
- Hooves act as snowshoes to support the heavy animals in soft snow and in muddy or marshy ground.
- Moose are at home in the water and, despite their staggering bulk, are good swimmers. They have been seen paddling several miles from shore, and will even submerge completely, staying under for 30 seconds or more. Moose can also turn 180° while submerged and resurface at surprising distances from where they went under.
- Moose have been clocked running at 38 miles per hour over obstructed ground.
- When hand-reared, moose can be trained to follow voice commands and can carry a 275-pound pack or pull a 600–800 pound sled at a walking speed of 3 miles per hour. Although individual moose are amenable in captivity and attempts have been made to domesticate them, it is difficult to keep them long or in large numbers due to the difficulty of supplying appropriate foods and their susceptibility to livestock diseases.
- Horses panic at the site of a moose. In the late 1600s, King Karl XI of Sweden tried to use moose for a special light cavalry that could swarm across inhospitable terrain and whose very appearance would cause great disarray among any horse-riding enemy.
**NORTH AMERICAN RIVER OTTER**

**Range**
Occur throughout Canada and the United States, except for areas of southern California, New Mexico, and Texas, and the Mohave Desert.

**Habitat**
Rivers, lakes, marshes, swamps, and estuaries; anywhere there is a permanent food supply and easy access to water.

**Diet (wild)**
Fish, frogs, mice, crayfish, and crabs.

**Diet (captivity)**
Dog food, horse meat, fish.

**Description**
Length: 16–21 inches; tail: 10–14 inches; weight: 15–30 pounds. Coat is brown and gray, dark above and lighter underside. The fur is dense and soft, effectively insulating these animals in water. The feet have claws and are completely webbed. Special glands secrete an oily material that the otter spreads throughout its coat.

**Lifespan**
Wild: 12 years. Captivity: 21 years.

**Reproduction**
Females give birth to 1–6 young per litter, with an average of two to three, in a den near the water. Pups are born with fur, but are otherwise helpless. They open their eyes at one month of age and are weaned at about three months old. They begin to leave their natal range around six months. Males and females come together to breed in late winter or early spring. Gestation lasts two months, but the young may be born up to a year after mating because river otters employ delayed implantation of the fertilized egg in the uterus. Births occur from November to May, with a peak in March and April. Sexual maturity is reached at two to three years of age.

**Behavior**
North American river otters get their boundless energy from their very high metabolism, which also requires them to eat a great deal during the day. Males are solitary with no strong bond between mating pairs; family groups consist of female with young. Territorial, otters mark territory with secretions from anal scent glands (otters are members of the weasel family, known for their well-developed anal scent glands.) Scent glands are also used for communicating information regarding identity, sex, sexual state and receptivity. On land, otters can run at speeds up to 18 mph. Otters can remain submerged for up to 2 minutes and have been reported to swim at speeds up to 7 miles per hour. Maximum dives of up to 60 feet have been reported.

**Our animals**
1 female, 1 male. Born: 02/19/2013 (female, Nkeke); 02/25/2014 (male, Miles). Nkeke was born at Prospect Park Zoo in New York City and came to PPZ in 2017. Miles is the first otter born at PPZ. Unfortunately, his first-time mom was overzealous in grooming him after birth. Due to his injuries, he required surgery to his left front and back legs and tail.

**Cool stuff**
- Otters are the only mammals apart from primates that have learned to use tools while foraging.
- Otters are known as playful animals, exhibiting behaviors such as mud/snow sliding, burrowing through the snow, and water play. Many play activities actually serve a purpose and are used to strengthen social bonds, to practice hunting techniques, and scent mark.
- North American river otters communicate in a variety of ways. They vocalize with whistles, growls, chuckles, and screams.
- Otters’ long whiskers are used to detect organisms in the substrate and the dark water. Prey is eaten immediately after capture, usually in the water, although larger prey is eaten on land.
- Population trends have stabilized in recent years and reintroduction and conservation efforts have resulted in recolonization of areas where North American river otters were previously extirpated. Northern river otter populations are still considered vulnerable or imperiled throughout much of their range in midwestern United States and the Appalachian mountains.
- North American river otters have a close relationship with beavers. Otters do not usually prey on beavers (which can weigh twice as much as otters) but they will often use beaver constructions as resting sites. Otters have even been observed sharing lodges with resident beavers on at least three separate occasions. Beaver dams also create excellent foraging opportunities for otters.

**Phylum** Chordata

**Class** Mammalia

**Order** Carnivora

**Family** Mustelidae

**Genus** Lontra

**Species** L. canadensis

**Status:** endangered/threatened
**NORTHERN TREE SHREW**

<table>
<thead>
<tr>
<th><strong>Range</strong></th>
<th>Southeast Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Habitat</strong></td>
<td>Deciduous and evergreen forests. Inhabit areas about 77° F (25° C), with at least 45–50 percent humidity</td>
</tr>
<tr>
<td><strong>Diet (wild)</strong></td>
<td>Fruits, seeds, insects, leaves, and occasionally small mammals and lizards</td>
</tr>
<tr>
<td><strong>Diet (captivity)</strong></td>
<td>Length: 4–8 inches; tail: 9–10 inches; weight: 3½–8 ounces. Squirrel-like appearance with a long bushy tail and pointed snout. Their dense coat is gray or brown in color. They have short whiskers and five functional toes on their front feet and sharp claws used for climbing.</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td><strong>Lifespan</strong> Wild: 2–3 years. Captivity: 10–12 years</td>
</tr>
<tr>
<td><strong>Reproduction</strong></td>
<td>The female will have 2–4 offspring after a 50-day gestation period. Offspring are born pink and hairless with closed eyes and ears. The female visits every two days to nurse them but ignores them the rest of the time. Offspring are weaned at four weeks and, once they are out of the nest, the mother will take on the nurturing parent role and bring them food and teach them how to forage. Both parents will make a nest amongst tree roots. They are sexually mature around four months of age and will breed throughout the year.</td>
</tr>
<tr>
<td><strong>Behavior</strong></td>
<td>Northern tree shrews typically live in monogamous pairs. One male and one female have overlapping territories; the male will defend his territory from other males, and the female will defend hers from other females. They are diurnal and spend much of the day foraging for food on the forest floor. They use their sense of smell, vision, and hearing to detect prey. Constant eating is necessary because of their simple digestive tract. The long and pointed snout is used to dig through the leaves on the ground to find food. They are constantly moving in a varying path so they don’t encounter predators as often. To communicate, tree shrews use different types of vocalization and scent markings are used to mark territories.</td>
</tr>
<tr>
<td><strong>Our animals</strong></td>
<td>1 female, 1 male. Born: 01/2010 (male), 05/2013 (female)</td>
</tr>
<tr>
<td><strong>Cool stuff</strong></td>
<td>• For decades, scientists were not sure whether to classify tree shrews as primates or insectivores. In 2000, the results of complete mitochondrial genome data supported the hypothesis of a closer phylogenetic relationship of tree shrews to rabbits than to primates. • Their brain-to-body-mass ratio is the largest of any animal, even humans. • Tree shrews use scent marking to indicate boundaries of their territories. • Northern tree shrews make eight distinct sounds; four can be directly associated with alarm, attention, contact, and defense. • Northern tree shrews’ body temperature varies from 95° F (35° C) at night to 104° F (40° C) during the day. This difference is larger than any other endotherm (warm-blooded animal), and indicates that the circadian rhythms of body temperature and locomotor activity are synchronized.</td>
</tr>
</tbody>
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</thead>
<tbody>
<tr>
<td>Chordata</td>
<td>Mammalia</td>
<td>Scandentia</td>
<td>Tupaiidae</td>
<td>Tupai</td>
<td>T. belangeri</td>
</tr>
</tbody>
</table>
### Pallas Cat

<table>
<thead>
<tr>
<th><strong>Range</strong></th>
<th>Central Asia from Iran to west China</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Habitat</strong></td>
<td>Steppe, desert and rocky mountain regions up to high altitudes over 13,000 feet (4,000 meters)</td>
</tr>
<tr>
<td><strong>Diet (wild)</strong></td>
<td>Majority of diet is small rodents and pikas</td>
</tr>
<tr>
<td><strong>Diet (captivity)</strong></td>
<td>Wet and dry cat food, mice</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Length: 2–3 feet (about half is tail); weight: 5–11 pounds. Long sandy gray or russet-red fur tipped with white. They have short, stumpy legs and a small broad head. The ears are low set and they have a ruff around their heads to protect them against the cold. They use their tails as a “muff” by wrapping it around their bodies to shield them from the cold.</td>
</tr>
<tr>
<td><strong>Lifespan</strong></td>
<td>Wild: 8–10 years. Captivity: 11 years</td>
</tr>
<tr>
<td><strong>Reproduction</strong></td>
<td>Females give birth once a year to 2–6 kittens after a gestation period of 66–75 days. Mating occurs between December and March with litters born between late March and May. Kittens mature between 4–6 months.</td>
</tr>
<tr>
<td><strong>Behavior</strong></td>
<td>Pallas cats are usually crepuscular (active at dawn and dusk) and elusive and solitary. They live in abandoned dens and burrows of other animals or in caves and rock crevices. Pallas cats are not fast runners; they primarily hunt by ambush or stalking. Once threatened by hunting for their fur, they are now being threatened by the poisoning of pika, their main food source.</td>
</tr>
<tr>
<td><strong>Our animals</strong></td>
<td>1 male. Born: 2014 at the Cincinnati Zoo</td>
</tr>
</tbody>
</table>
| **Cool stuff** | • When threatened, Pallas cats will run into a “bolt hole,” such as a rock crevice or den, slink down low and freeze next to rocks or vegetation, or run into the cover of nearby rocks or ravines. They move slowly compared to other cats and rely on camouflage to avoid detection. Pallas cats are poor runners; therefore running is an unlikely means of escape from large terrestrial or aerial predators.  
  • The Pallas cat was named after the German naturalist Peter Simon Pallas, who first described the cat in 1776.  
  • Pallas cats only have 28 teeth; most cats have 30. |

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**Phylum:** Chordata  
**Class:** Mammalia  
**Order:** Carnivora  
**Family:** Felidae  
**Genus:** Felis  
**species:** O. manul  

! Status: near threatened
## PATAGONIAN MARA

**Range**
- Argentine pampas and Patagonia

**Habitat**
- Open grasslands and stony wastelands

**Diet (wild)**
- Grasses, roots, and stems

**Diet (captivity)**
- Monogastric pellets, alfalfa hay, treat of apples, carrots

**Description**
- Height: 12 inches; length: 2–3 feet; weight: 17–20 pounds. Brown heads and bodies, dark (almost black) rumps with a white fringe around the base, and white bellies. Long rabbit-like ears and short, nearly hairless tail which is held close to the body. The nails on the hind feet are hoof-like.

**Lifespan**
- 10–15 years

**Reproduction**
- Two litters may be produced in a given year with 2–5 per litter. Babies are born well-developed and can start grazing within 24 hours. Young remain with their mother until they are nine months old. Males and females are monogamous, but virtually all direct care of the young comes from the female. Males rarely interact with small pups, and interactions with large pups is limited to sitting or foraging nearby. However, males spend the majority of their time watching for predators, which significantly lowers risk faced by his offspring and mate. Furthermore, females are sexually receptive only for a few hours twice a year, so a male must stay with his female to ensure he is around when she is in estrous. Mating occurs in June or July. During courtship, the male will squirt urine at the female (as do porcupines, rabbits, and hares). A female comes into heat again about five hours after giving birth.

**Behavior**
- Patagonian maras live in groups of 10–30 individuals. In times of danger, they flee at high speeds, springing four-legged off the ground. Patagonian maras are diurnal and during the heat of the day, they bathe. They clean their bodies by licking and combing with their teeth. Patagonian maras clean their faces with their forefeet just as cats would. At night, they retire to burrows to sleep.

**Our animals**
- 3 males. Born: 2012 and 2014

**Cool stuff**
- Also known as the Patagonian cavy, Patagonian hare or dillaby.
- Maras can amble, hop in a rabbit-like fashion, gallop, or bounce on all fours. They have been known to leap up to 6 feet (1.8 meters).
- Forelegs are significantly longer than in most other rodents, and both the hind and fore feet are small with hoof-like claws.
- Maras mate for life.
- Habitat change, most likely caused by the introduction of domestic sheep, is a major problem facing this species.
- Maras use a creche system, where one pair of adults keeps watch of all the young. If they spot danger, the young rush below ground into a burrow, and the adults are left to run for it.
- All rodents share one characteristic: Their dentition is highly specialized for gnawing. Rodents have a single pair of upper and a single pair of lower incisors, and no rodent has canine teeth. Rodent incisors grow continuously (about as fast as hair), and gnawing on food keeps the teeth from over-growing.

---

**Phylum**
- Chordata

**Class**
- Mammalia

**Order**
- Rodentia

**Family**
- Caviidae

**Genus**
- Dolichotis

**species**
- D. patagonum
## RED PANDA

**Status:** endangered

### Range
Mountains of Nepal and northern Myanmar (Burma), as well as in central China

### Habitat
Bamboo and temperate mixed (coniferous and broadleaf) forests of the Himalayas at elevations of 7,000–15,500 feet (1,500–4,700 meters)

### Diet (wild)
Mostly bamboo, some berries, mushrooms, grasses, and bark; will also eat birds, eggs, insects, and small rodents. Classified as a carnivore, it does not get much nutrition from vegetation, requiring a significant portion of the day to be spent feeding.

### Diet (captivity)
Panda biscuits, primate biscuits mixed with apple and banana, bamboo when available

### Description
Length: 24 inches; tail: additional 18 inches; weight: 10–12 pounds. Fur is fluffy red-brown with distinctive black and white markings on the face with long white whiskers and a ringed tail. Their jaws are powerful enough to chew tough bamboo leaves. Front claws are semi-retractable with non-retractable claws behind.

### Lifespan
Wild: 14 years. Captivity: 18 years

### Reproduction
After a gestation of about 134 days, the female give birth to 1–4 cubs. Cubs have thick grayish fur and stay in the nest for about 90 days, remaining close to their mother until the next mating season begins. Red pandas reach adult size at about 12 months, are able to reproduce around 18 months of age, and are fully mature at 2–3 years. Pair bonds form at the beginning of the breeding season. The male follows the scent trail of the female, which she intensifies on the day of copulation. The female builds a nest of sticks, grass, and leaves in a low, hollow tree trunk or rock crevice.

### Behavior
Adult red pandas lead solitary lives. Crepuscular, they spend most of the day resting and sleeping in trees. They mark their territory with urine and substances secreted from their footpads, and by depositing feces in specially dug latrines at the area's boundaries. Males fiercely defend their territory. Agile climbers, red pandas use their long tail for support and counterbalance and tend to sleep with legs straddling a branch, or tightly curled up with head under a hind leg. Their bushy tail serves as a pillow or insulation by covering its face. Pairs or family parties will forage together on the ground. They eat sitting, standing, or (only a few other animals can do this) lying on their back.

### Our animals
2 female; 2 males. Born: 006/09/2014 (1 female); 7/03/2011 (1 male); 07/02/2016 (1 female, 1 male). The red pandas born in 2016 are the offspring of the other two pandas.

### Cool stuff
- In 1969, the first red panda was brought from the Himalayas to the London Zoo. Identified as a carnivore by its teeth, the animal was given a diet of meat, which it steadfastly refused, until the red panda's life hung in the balance. Luckily, the zoo superintendent took the animal for a walk through the zoo gardens and when the red panda stopped at a rose bush and began to eat the buds, it was discovered that this exotic carnivore was indeed a vegetarian.
- Red pandas have given scientists taxonomic fits. They have been classified as a relative of giant pandas and also of raccoons. They even have flat, broad, highly ridged cheek teeth that are more like deer than carnivores. Currently, red pandas are considered members of their own unique family, Ailuridae.
- Red pandas and giant pandas are carnivores that share a vegetarian diet, similar teeth and skulls and the uncommon trait of a short, backward-pointing S-shaped penis. Most distinctively, both have a “thumb” which is actually a wrist bone remarkably reshaped into a sixth digit to grasp the bamboo both species relish.

<table>
<thead>
<tr>
<th>Phylum</th>
<th>Class</th>
<th>Order</th>
<th>Family</th>
<th>Genus</th>
<th>species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chordata</td>
<td>Mammalia</td>
<td>Carnivora</td>
<td>Ailuridae</td>
<td>Ailurus</td>
<td>A. fulgens</td>
</tr>
</tbody>
</table>
### Range
Masoala Peninsula in northeastern Madagascar

### Habitat
Deciduous tropical forests

### Diet (wild)
Fruits, leaves, nectar and seeds

### Diet (captivity)
Monkey chow diet, fruits and vegetables

### Description
Length: 20–22 inches; tail: additional 22–25 inches; weight: 7–10 pounds. Females are usually heavier. Slender bodied and long legged with a narrow, fox-like snout and small ears that are hidden by a ruff of hair. The soft, woolly body fur is a deep rusty red while their extremities, forehead, crown, belly and tail are black. They have a patch of white fur on the nape of the neck and may have additional white patches on the feet, digits or mouth.

### Lifespan
Wild: 15–20 years. Captivity: up to 19 years

### Reproduction
Gestation lasts for 90–102 days and they are the only primates the produce a litter of young, mostly commonly three. The female may build several nests for the young to use while foraging. Young are weaned around four months of age. They reach sexual maturity at about two years of age and breed at about three. Breeding season occurs May–July, but the female is in estrus for only a few days and fertile only one day during this time.

### Behavior
Red ruffed lemurs warn each other with a complex system of at least 12 different vocalizations. These alarm calls can be low grunts, gurgling sounds or a cackle-like roar. Red ruffed lemurs can even recognize the alarm calls of their co-subspecies, black-and-white ruffed lemurs. Both species will cooperate in warning the other’s group. Predators of red ruffed lemurs include snakes, raptors, large mammals and humans. A specialized claw on the second toes of their hind feet is used to brush their long, fluffy coat. Red ruffed lemurs have scent glands on their rump used for group identification. They also have acute senses of smell, vision and hearing.

### Our animals
1 female, 1 male. Born: 04/1991 (female); 05/2007 (male). Birth place: San Diego Zoo (female); Palm Beach Zoo, Fla. (male)

### Cool stuff
- Red ruffed lemurs are the largest members of the true lemur family (Lemuridae).
- Red ruffed lemurs (and all prosimians) lack extensive digit coordination, so they groom themselves and each other with their teeth (six bottom teeth that form the “toothcomb”).
- Reproduction is costly for red ruffed lemurs. Despite being large lemurs, female red ruffeds have relatively short gestation periods and give birth to multiple offspring. To counter these reproductive costs, females leave their litters in nests or stashing locations, called parking, in the mother’s core area. While mothers travel into the forest, community members of the core area care for the young. This form of alloparenting is commonly practiced in red ruffed lemur communities, reducing maternal reproductive costs.
- Depending on the group size, a home range might stretch from 60–150 acres. Although every group has a core area, members move throughout the forest when foraging, covering up to ¾ mile in a day.
### Reeves’ Muntjac

<table>
<thead>
<tr>
<th>Range</th>
<th>Southern to eastern China including Taiwan; have been introduced in areas of Great Britain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Habitat</td>
<td>Forested areas with dense vegetation</td>
</tr>
<tr>
<td>Diet (wild)</td>
<td>Fallen fruit, grasses, low-growing leaves, and tender shoots</td>
</tr>
<tr>
<td>Diet (captivity)</td>
<td>Alfalfa, apples, carrots, bananas, grapes, and greens</td>
</tr>
<tr>
<td>Description</td>
<td>Height: 16–18 inches at the shoulder; weight: 30–40 pounds. A small deer with a short coat that ranges in color from deep brown to grayish brown and red; white on the ventral side. Males possess rudimentary antlers that are 2–3 inches long, while females have small bony knobs covered by tufts of hair. The upper canine teeth in males are elongated into tusks.</td>
</tr>
<tr>
<td>Lifespan</td>
<td>Wild: 10 years. Captivity: 18 years</td>
</tr>
<tr>
<td>Reproduction</td>
<td>The female gives birth to a single, 1–1 ½ pound offspring after a gestation period of 209–225 days. Fawns are usually born in dense jungle growth where they hide until they are able to move around with their mother. Fawns are born with white spots on their coats to aid in camouflage. Females become sexually mature within their first year of life. In the wild, mating takes place throughout the year.</td>
</tr>
<tr>
<td>Behavior</td>
<td>Muntjacs are commonly called barking deer. Barks are primarily used in two circumstances: when predators are suspected in the environment, and during social encounters when subordinate and dominant animals come into contact. Muntjacs are solitary and territorial, often chasing off other herbivores from a territory. Males use their elongated canines, rather than their antlers, for defense. These animals are crepuscular, feeding mainly at dawn and in the evening.</td>
</tr>
<tr>
<td>Our animals</td>
<td>2 males. Born: 07/2005 and 04/2006 at PPZ</td>
</tr>
</tbody>
</table>

**Cool stuff**
- When a doe in estrus is located, the male will make a buzzing sound and the female will respond by lying flat, weaving her head and emitting a cat-like whine that is a sign of submission. After copulation, males are no longer involved with the females and once the rut is over, males lose their antlers. Males may grow antlers in a period as rapid as 103 days, which is useful for a species that can breed year-round.
- When alarmed, muntjacs will bark for up to one hour.
- Muntjacs are surprisingly omnivorous. They eat bamboo, seeds, bark, fruit and foliage, like other deer species, but they also eat eggs and carrion and are able to hunt small mammals and ground-nesting birds. It’s also been reported to eat hunters’ snared pheasants in China.

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**Classification**

- **Phylum**: Chordata
- **Class**: Mammalia
- **Order**: Artiodactyla
- **Family**: Cervidae
- **Genus**: Muntiacus
- **Species**: M. reevesi
### RING-TAILED LEMUR

**Range**
- Madagascar, southwestern end of the island

**Habitat**
- Rocky, scrubby areas, gallery forest, along a river or stream

**Diet (wild)**
- They feed from many different species of plants and trees, but are partial to Kily trees; occasionally eat insects

**Diet (captivity)**
- Monkey chow daily with produce four times a week

**Description**
- Length: 15–18 inches; tail: additional 22–24 inches; weight: 4–6 pounds. Most distinctive feature is the long and bushy tail, which usually has 13 rings and is not prehensile. Small but long hind limbs and grasping hands and feet, with a toilet claw in the second toe for cleaning. Like all prosimians, they have a dental comb or tooth scraper in the form of elongated front teeth in the upper jaw. Newborns have blue eyes that turn golden brown as they grow up.

**Lifespan**

**Reproduction**
- Usually one offspring, but sometimes twins, are born in August. The mother carries her baby in her mouth until it can hold on to her fur by itself. When small, the baby clings to its mother’s belly, riding on her back about two weeks later. The baby takes its first steps away from mother at about one month but it is not independent until about six months. All adult females participate in the rearing of offspring; sometimes males help as well. Ring-tailed lemurs reach sexual maturity by age three. Females prefer to breed within their group. During estrus, the female will present her hindquarters to the preferred male.

**Behavior**
- Ring-tailed lemurs live in troops of 5–20 individuals. Females are extremely dominant and one female usually dominates the troop of adult males and females. Ring-taileds are territorial but tolerate some overlap from other groups. Females remain in the troop in which they are born, while males usually leave. Males actively maintain their territory with scent marking and calls. Territorial disputes are usually settled by yelling and screaming and rarely involve physical fighting. Grooming is important both for hygiene and to reinforce social bonds within the group. There are many vocal calls used for communication, as well as face-making. These diurnal animals spend much of their time foraging for food. As ring-tailed lemurs move around eating fruits and leaves, they play an important role in seed dispersal, helping rejuvenate the forest.

**Our animals**

**Cool stuff**
- • SSP at PPZ
- • Although females are 100 percent dominant over males, males are active socially. During the birthing season, males sometimes commit infanticide.
- • During breeding season, males ring-tailed lemurs have “stink fights,” using additional scent glands on their wrists and chests that other lemurs do not have. Males rub the entire tail along the wrists, coating it with the strong-smelling secretions. They then face off, waving their tails held high over themselves with the smelliest tail winning. Unfortunately (or perhaps fortunately), human scent receptors are not strong enough to smell these fights.
- • Sunbathing occurs during the early morning hours before feeding. Ring-tailed lemurs can be seen sitting up with their front legs resting on their hind legs, exposing their stomachs to the sun.

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<table>
<thead>
<tr>
<th>Phylum</th>
<th>Chordata</th>
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</thead>
<tbody>
<tr>
<td>Class</td>
<td>Mammalia</td>
</tr>
<tr>
<td>Order</td>
<td>Primates</td>
</tr>
<tr>
<td>Family</td>
<td>Lemuridae</td>
</tr>
<tr>
<td>Genus</td>
<td>Lemur</td>
</tr>
<tr>
<td>species</td>
<td>L. catta</td>
</tr>
</tbody>
</table>
### Seba’s Short-Tailed Fruit Bat

**Range**
Central and South America; from Veracruz (southern Mexico) to Bolivia and Brazil (mid-South America); also in the Caribbean Islands

**Habitat**
Understory of tropical forests

**Diet (wild)**
Generalist, feeding on at least 50 different species of fruit; occasionally eat nectar and insects if fruit is not available

**Diet (captivity)**
Fruit

**Description**
Weight: 0.6 ounces. Rusty brown, leaf-shaped growth on the nose (to help with echolocation).

**Lifespan**
Wild: 5–6 years. Captivity: 12 years

**Reproduction**
Females give birth to one baby at a time in the spring. They forage for couple weeks after birth with their babies attached. Pups are left in the roost once they are heavier and nursed for four more weeks.

**Behavior**
Seba’s short-tailed fruit bats roost mostly in caves and hollow trees, but will also take cover in buildings during the day. Roosts can have 30–300 individuals. Males and females roost separately, with the exception of one male for each female group. They will use scent and sight to locate fruit and carry it away to perch up high where it can be eaten safely. Seba’s short-tailed fruit bats fly out at sunset, forage for fruit, eat for about 15 minutes, then nap. They will repeat this cycle throughout the night. They use their memory of an area to get to the general location of food and then use their sense of smell, sight, and echolocation to hone in on the fruit.

**Our animals**
26 males. Birth date and place unknown.

**Cool stuff**
- Short-tailed fruit bats eat 35 different fruit species of the genus *Piper* each night, which translates to 350–2,500 seeds dispersed per night per individual bat. They may also be important pollinators of many plant species.
- Over 500 plant species rely on bats to pollinate their flowers, including species of mango, banana, cocoa, durian, guava and agave (used to make tequila). The pollination of plants by bats is called chiropterophily.
### Sicilian Burro

<table>
<thead>
<tr>
<th><strong>Range</strong></th>
<th>Domesticated; originally from North Africa, Middle East and Asia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Habitat</strong></td>
<td>Wild asses originated in hilly, undulating deserts and are well-adapted for life in the desert</td>
</tr>
<tr>
<td><strong>Diet (wild)</strong></td>
<td>Grasses, hedges and shrubs</td>
</tr>
<tr>
<td><strong>Diet (captivity)</strong></td>
<td>Hay and grain</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Height: 30–60 inches at the shoulder; weight: 200–500 pounds. Coats are generally gray and fade to white underneath. Darker dorsal stripes with transverse stripe across shoulders with bands sometimes on legs. Mane is long, thin and upright. Tail is tufted. There is generally very little sexual dimorphism in donkeys.</td>
</tr>
<tr>
<td><strong>Lifespan</strong></td>
<td>Wild: 25–30 years. Captivity: 40 years</td>
</tr>
<tr>
<td><strong>Reproduction</strong></td>
<td>The female gives birth to a single foal after a gestation period of 12 months. Females reach sexual maturity at two years old. Young are weaned at about five months old. Breeding season occurs in the wet season and young are birthed as vegetation reaches its peak.</td>
</tr>
<tr>
<td><strong>Behavior</strong></td>
<td>In the wild, males defend large territories. Burros graze from dawn until early morning, rest during the heat of the day, and then graze again until nightfall. Herds are highly flexible, breaking up and reforming on an almost daily basis. Burros have the narrowest feet within the horse (Equid) family. This allows them to be sure-footed on rocky and high terrain (horses have shorter, wider feet designed for speed.) Due to its sure-footedness, burros are used as a pack animals and are capable of carrying over 200 pounds for days with little food. They are also able to go quite some time without water.</td>
</tr>
<tr>
<td><strong>Our animals</strong></td>
<td>2 females. Born: 1995. PPZ exhibits Sicilian burros, a domestic breed found on the island of Sicily</td>
</tr>
</tbody>
</table>

### Cool stuff

- The African wild ass was domesticated about 6,000 years ago.
- Equid species are referred to as horses, ass, burros, ponies and donkeys. Mules are an unfertile hybrid between a male donkey and a female horse; hinnies are a cross between a male horse and a female donkey.
- In ancient Egypt, female donkeys were kept as dairy animals. Donkey milk is higher in sugar and protein than cow's milk. The milk was also used for cosmetic and medicinal purposes.
- The first donkeys came to the New World with Christopher Columbus in 1495. Donkeys were introduced to the United States with Mexican explorers. Many of the wild donkeys in the southwestern United States are descendants of escaped or abandoned burros brought by Mexican explorers during the Gold Rush.
- Donkeys are observant and cautious animals. They will refuse to do anything that seems dangerous to them. This behavior has earned donky's reputation for being stubborn, but actually, domestic donkeys are very obedient animals and will not refuse any reasonable order. When a donkey is startled by something, it usually will not run blindly in fear. Its natural instinct is to freeze or run a few steps, then look to see what frightened it. This is unlike the behavior of horses, which tend to panic and “bolt” when frightened.
- Donkeys are used as companions for weaned foals and for nervous, injured, or recovering animals. They have a calming, soothing effect and help to reduce the stress of traumatic situations.
- Domestic donkeys interact well with other livestock animals such as horses, cows, goats, sheep, and llamas. Donkeys are passive by nature but will aggressively protect their young, and can be trained to protect sheep and goats as well. Donkeys will not hesitate to attack and trample large dogs or even humans if they perceive the animal to be a threat.

<table>
<thead>
<tr>
<th><strong>Phylum</strong></th>
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</thead>
<tbody>
<tr>
<td><strong>Class</strong></td>
<td>Mammalia</td>
</tr>
<tr>
<td><strong>Order</strong></td>
<td>Perissodactyla</td>
</tr>
<tr>
<td><strong>Family</strong></td>
<td>Equidae</td>
</tr>
<tr>
<td><strong>Genus</strong></td>
<td>Equus</td>
</tr>
<tr>
<td><strong>species</strong></td>
<td>E. asinus</td>
</tr>
</tbody>
</table>
## SNOW LEOPARD

### Range
- Western Mongolia to northeast Pakistan and Bhutan

### Habitat
- High mountain slopes near tree lines

### Diet (wild)
- Wild sheep, goats, hares, marmots and other small mammals and birds

### Diet (captivity)
- Carnivore diet, fasted one day a week

### Description
- Length: 48–54 inches; tail: additional 36–48 inches; weight: 60–120 pounds. Medium-sized cats with tails that can be as long as their bodies. They have thick, smoky-gray fur patterned with dark gray open rosettes. In the mountains, they blend perfectly with the rocky slopes, making them practically invisible.

### Lifespan
- Wild: 10 years. Captivity: 15–20 years

### Reproduction
- Gestation is 98–103 days and 1–4 young are born. The young open their eyes 7–9 days later, are quite active by two months, and remain with their mother through the first winter. The males will sometimes help with the care of the young. In zoos, sexual maturity is at approximately two years but is thought to be later in the wild. Males and females mate in late winter. The female creates a den in the rocks.

### Behavior
- Snow leopards are secretive cats that are solitary except when female have young. They use ridges and cliffs as a vantage point from which to spot and ambush prey. Snow leopards follow migrating prey along annual routes of up to 38 square miles (98 square kilometers). During the summer, they hunt as high as 18,000 feet (5,400 meters) and go as low as 6,000 feet (1,800 meters) in the winter. Their paws are covered by a cushion of hair that increases surface area, allowing for better traction in soft snow and over ice. Unlike other big cats, snow leopards do not roar and they eat from a crouched position. Snow leopards have overlapping ranges and use scrapes, urine and feces to mark their territories in order to avoid contact with other snow leopards in the range.

### Our animals
- 1 female (Serena). Born: 1998 at PPZ

### Cool stuff
- • SSP at PPZ. The global population of snow leopards is estimated to be anywhere between 4,000–6,500 individuals. There are 600 snow leopards in zoos around the world. Hunting is prohibited except in Mongolia, which still has regulated hunting.
- • The illegal fur trade is still very active. Retribution killings are common among herders who have lost livestock to snow leopard predation.
- • Snow leopards can jump distances of 20–50 feet (6–15 meters). Their long tail helps maintain accuracy and balance.
- • The leopard’s long tail is thickly furred and can be curled around the body and the end draped across the nose to protect the nose from severe cold.
- • Unlike other large felids, snow leopards do not roar.
- • Due to their shy and elusive behavior, snow leopards generally avoid humans and are not known to have ever attacked a human in the wild.
- • Cats’ jaws have a large space behind each canine (a diastema). This space, combined with the curvature of the upper jaw, ensures that the canines stab as deeply as possible into their prey, although big cats often kill larger prey by suffocation.

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<thead>
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<th>Family</th>
<th>Genus</th>
<th>species</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chordata</td>
<td>Mammalia</td>
<td>Carnivora</td>
<td>Felidae</td>
<td>Panthera</td>
<td>P. unica</td>
</tr>
</tbody>
</table>
### Western Grey Kangaroo

<table>
<thead>
<tr>
<th><strong>Range</strong></th>
<th>Western Australia and northern Tasmania</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Habitat</strong></td>
<td>Woodlands, open forests, coastal heathlands, open grassland and scrub land; due to habitat encroachment, can also be found on golf courses</td>
</tr>
<tr>
<td><strong>Diet (wild)</strong></td>
<td>Mostly grass, but will browse on certain shrubs</td>
</tr>
<tr>
<td><strong>Diet (captivity)</strong></td>
<td>Monogastric grains, lettuce, fruit, and clay available for licking</td>
</tr>
<tr>
<td><strong>Description</strong></td>
<td>Height: 6–7 feet; weight: 60–120 pounds. Males are larger than females. Varied in color, from grayish-brown to reddish. Undersides are pale. Small head, large ears, long thick tail used for balance, short forearms, strong hind legs and long broad back feet ideal for hopping and standing upright.</td>
</tr>
<tr>
<td><strong>Lifespan</strong></td>
<td>Wild: 5–8 years. Captivity: 18 years</td>
</tr>
<tr>
<td><strong>Reproduction</strong></td>
<td>After gestation of 31 days, the female gives birth to a joey, which is about 1 inch long, hairless and sightless, and crawls from the vaginal opening to the pouch by using the only truly developed body part, its claws. Once inside the pouch, the offspring securely attaches itself to a teat which swells to fill the inside of the youngster's mouth. Unlike other kangaroos, an embryo is not kept in a dormant state in the uterus. The joey will leave the pouch around 34 weeks, and is independent at 10 months, although they continue to nurse for another six months. The female will mate again after the joey has left the pouch. Breeding takes place in late spring or early summer.</td>
</tr>
<tr>
<td><strong>Behavior</strong></td>
<td>During the hot summer months, the grey kangaroo adapts to a nocturnal lifestyle. They scratch and groom themselves and their offspring with their forepaws. Females clean their pouches approximately three times every 24 hours. Grey kangaroos are the most vocal of the kangaroos: mothers communicate with joeys with a series of clicks. Natural predation is mostly by dingoes. Grey kangaroos are sometimes killed by humans because they compete with livestock for grazing land.</td>
</tr>
</tbody>
</table>
| **Cool stuff** | • Grey kangaroos can run (hop?) as fast as 55 mph for short distances and leap over 30 feet (9 meters) in each bound.  
• Kangaroos live in groups called “mobs” which generally have more females (called does or fliers) than males (called boomers or stinkers due to a strong, curry-like smell).  
• In Australia, kangaroos are protected and controlled exclusively by state authorities, but in some areas hunters are licensed to kill them to protect crops or provide meat, fur and leather.  
• Australian kangaroo meat is marketed throughout the world as a quality game meat.  
• Muscle mass makes up approximately 80 percent of the body weight for grey kangaroos.  
• Males compete for females through “boxing,” whereby the winning males mate.  
• Kangaroos can’t hop backwards. |

**Phylum** | **Class** | **Order** | **Family** | **Genus** | **species** |
| Phylum: Chordata | Class: Mammalia | Order: Diprotodontia | Family: Macropodidae | Genus: Macropus | M. fuliginosus |
## Western Tufted Deer

<table>
<thead>
<tr>
<th><strong>Range</strong></th>
<th>Southern China to northeastern Myanmar</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Habitat</strong></td>
<td>High valley jungles and mountain forests always close to water</td>
</tr>
<tr>
<td><strong>Diet (wild)</strong></td>
<td>Grasses and other plants, some fruit, occasional carrion</td>
</tr>
<tr>
<td><strong>Diet (captivity)</strong></td>
<td>Grains, pasture free-choice</td>
</tr>
</tbody>
</table>

### Description

- **Height:** 20–28 inches; **length:** 43–63 inches; **weight:** 37–110 pounds. Males are slightly larger than females. The coat is dark gray to chocolate brown, with gray neck and head. Tufted deer get their name from the tuft of hair on the forehead, which is blackish brown and can be 7 inches long. Their lips, tips of ears and underside of tail are all bright white. There may be a pale streak running around the eye and upwards toward the ears. The coat is very coarse, giving them a somewhat shaggy look. Males have short, simply spiked antlers, sometimes hidden completely by their tuft. Males also have upper canines, which grow up to 1 inch long and often protrude from the mouth like fangs or tusks.

### Lifespan

- **Wild:** unknown. **Captivity:** Over 15 years

### Reproduction

- Gestation lasts 6 months, after which most often a single birth takes place. Fawns are colored like their parents except for a row of spots on either side of the midline of the back. These disappear when fawns reach maturity at about six months. Fawns are capable of standing soon after birth. Sexual maturity is at 18–24 months. Mating season takes place during late fall and early winter.

### Behavior

- Tufted deer are active at night, but frequently seen at dawn and dusk. Usually solitary, they occasionally travel in pairs. Tufted deer have incredibly keen vision, hearing and sense of smell. They live within well-defined home territories from which they do not migrate. Within their territories, tufted deer travel well-established paths. Natural predators include leopards and dholes.

### Our animals

- 1 female, 1 male. Born: 09/21/1999 (female); 2014 (male), Birth place: Smithsonian Conservation Biology Institute (female); Lowry Park Zoo, Fla. (male)

### Cool stuff

- During the mating season, tufted deer males bark to attract mates. Both sexes also bark when alarmed.
- When fleeing, they hold their tails up like white-tailed deer.
- Tufted deer are the only species in the genus Elaphodus and have not been extensively studied to date.
- Tufted deer were first brought to the U.S. from China in 1985. and there is a North American breeding program for the species.

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**Phylum:** Chordata  
**Class:** Mammalia  
**Order:** Artiodactyla  
**Family:** Cervidae  
**Genus:** Elaphodus  
**Species:** E. cephalophus