

SLENDER-TAILED MEERKAT (*Suricata suricatta*) & BLACK-TAILED PRAIRIE DOGS (*Cynomys ludovicianus*) TALKING POINTS

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

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

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

MEERKATS & PRAIRIE DOGS INVENTORY

- Slender-tailed Meerkat skull
- Black-tailed Prairie Dog skull
- Black-tailed Prairie Dog pelt
- Meerkat and Prairie Dog Resource Cards

MEERKATS & PRAIRIE DOG COMPARISONS

Prairie dogs in the United States are comparable to the Southern African meerkat. Both species are sociable mammals, living together in underground burrow systems. Meerkat groups are called “gangs” or “mobs”. Prairie dogs live together in much greater numbers, in communities called “towns”. Both species have sentries that keep a look out while the others are foraging. They differ in that Prairie dogs are in the Order Rodentia, are herbivorous and have male dominated society. Whereas the meerkats are in the Order Carnivora (Mongoose Family) are carnivorous and the female is dominant. (compare two skulls)

MEERKAT RANGE/HABITAT

- Found in Kalahari Desert region of Southern Africa, SW Angola, Namibia, Botswana and S. Africa (see map)
- Live in semi-arid, hard or stony open country, savanna and grasslands

MEERKAT PHYSICAL ADAPTATIONS

1. Skull/Dentation (see skull)

- Sharp canines for catching and killing prey, pointy molars for crunching insects and scorpion exoskeletons but also wide enough to chew up plant material
- Eyes face forward giving them binocular vision to help spot predators at great distances.
- Eyes are wide apart giving them a wide angle view of the scene and helps prevent predators from gaining an advantage by sneaking up
- Tapered snout that comes to a point for a good sense of smell **that can help them search for food buried in the ground**
- Canines used to combat rival meerkats and occasionally predators

2. Size /Weight/Lifespan

- Average head and body length: 9.75-11.75 inches, tails 7.5 – 9.5 inches
- Average weight: 1.5 - 2 pounds
- Female is slightly larger than male

- Lifespan dominant pair: 6 - 10 years wild & non dominant less, 12 – 14 years captivity

3. Body Coat/Fur

- Fur is tan or gray, with a pale underside and short parallel stripes across their backs, extending from the base of the tail to the shoulders. Patterns of stripes are unique to each. Fur coloring blends in with their habitat, providing camouflage and protection. Light color helps maintain body temperature in a hot, arid environment
- Body is slender, which helps them slip quickly into their burrow when threatened
- Dark coloration surrounds the eyes and act as natural sunglasses, deflecting the sun's rays. They can stare into bright sky and spot birds of prey at great distances.
- Dark rings make the meerkat's eyes appear bigger and more threatening to predators. The eyes themselves have horizontal pupils, giving them a greater depth perception
- Meerkats have small, round, dark-colored ears. They are able to close the openings in order to keep the sand out while digging.
- Meerkats have a special membrane (nictitating membrane) that can cover the eye to protect it while burrowing
- Lighter body color allows a meerkat to gain less heat from sun; it has greater reflectance than a darker furred animal. This is important during the day in a hot, desert environment
- Dark skin and thin fur on their stomachs helps them control body temperature. Early in a cool desert morning, they can quickly warm themselves in the sun while lying on their backs or standing on their rear legs. They can also lie down on their stomach on a cool rock in the heat of midday.

4. Tail

- Long, slender tail (hence the name Slender-tailed Meerkat) has a black tip
- This non-prehensile tail is used to aid their balance when standing upright for long periods of time such as on sentry duty
- Tail is used for signaling. Tail is down when calm or being submissive and raised during combat or play behavior

5. Feet/Paws

- Non-retractable claws on each of four digits for burrowing and digging for prey. Claws sometimes used to scratch foes in combat or self-defense but their large canines are their weapon of choice when fighting
- Extremely powerful forearms, made to push away large amounts of rocks and dirt
- Hind legs are strong, allowing them to stand on their hind feet (with the assistance of their tail) to lookout for danger
- Meerkats stand on their toes where their foot padding is at its thickest

6. Senses/Scent Glands

- They have keen eyesight and good color vision. Eyes have nictitating membrane to protect their eyes while digging.
- They have a powerful sense of smell that they use to identify predators and family members
- Scent-marking is a major part of a meerkat's life. Meerkats will also use defecation, urine and saliva to establish their territory
- Meerkats have scent glands on their cheeks and in the anal region. The anal scent gland is larger on older, dominant males
- Meerkats have an excellent sense of hearing. They are able to pick up alarm calls even with their ears closed.

MEERKAT BEHAVIORAL ADAPTATIONS

1. Life Style

- Diurnal– no excess body fat stores and therefore foraging for food is a daily activity
- Small burrowing animals, living in large underground networks with multiple entrances. This community existence helps the meerkats survival rate
- They are very social, living in colonies of up to 30 - 40 meerkats. Groups are called “gangs” or “mobs” and are a good defense against predators
- Matriarchal society with a dominant female (alpha female)
- A mob consists of a dominant pair and their offspring
- Meerkats take turns standing sentry. They warn others of approaching dangers by giving a warning bark or whistle. The group will run and hide in one of the many holes they have spread across their territory. The sentry is the first to emerge from the burrow to check if the coast is clear. Their sentry duty lasts about one hour and is rotated through the mob.
- Meerkats are more likely to scan for predators from high vantage points or guard on their hind legs when young pups are present in the group
- They take turns doing jobs that benefit the whole group (i.e. baby sitters, sentries, hunters and teachers)
- A mob has several burrow systems within its territory, each complete with a communal toilet and sleeping chambers. Burrows are rotated, helping to ensure their resources are sustainable
- Grooming is important for maintaining social bonds and keeping their pelage free from insects and disease

2. Communication

- Communicate verbally with variety of noises, including twitters, whistles and hisses. These calls indicate alarm, panic, recruitment and moving. Particular calls may have a specific meaning indicating the type of predator and the urgency of the situation.
- Meerkats make different alarm calls depending upon whether they see an aerial or a terrestrial predator
- Predators include large birds of prey, large snakes, jackal
- Use extensive scent marking from scent glands and urine to demarcate territory and find breeding partner

3. Diet

- Primarily insectivores but also eat other arthropods (scorpions & spiders), frogs, lizards, snakes, plants, eggs and small mammals
- Home territory is ~ 4 square miles and they hunt in a different section each day
- Each meerkat must find its own food, but they may share the task of capturing and eating a large lizard or other large food item
- Get most of their water from their food– an important adaptation for the dry, arid habitat

4. Breeding/Reproduction/Growth/Parental Care

- The dominant pair (alpha male and alpha female) do most of the breeding and may kill any young not its own, to ensure that its offspring has the best chance of survival
- Meerkats are cooperatively breeding animals; subordinate individuals help to raise young that are not their own
- Gestation is 11 weeks. Pups are born within the underground burrow and are altricial. They leave the burrow in about two to three weeks and begin foraging around one month

- Meerkats also babysit the young in the group. Females that have never produced offspring of their own often lactate to feed the alpha pair's young
- All adults share the duty of raising the pups and teaching them in hunting and survival techniques
- Meerkats are sexually mature at about two years of age and can average three pups/litter (range one to four pups)

MEERKAT INTERESTING/FUN FACTS

- Meerkats are immune to certain types of venom, including the very strong venom of the scorpions of the Kalahari Desert and some snake venoms
- The tail is also used during snake-mobbing, the tip of the tail acts like the meerkat's head, telling the snake to strike the tail rather than the real head. It helps the meerkats avoid a potentially fatal bite.
- The shape of the meerkat's ear is considered to be somewhat unique among members of the mongoose family, as the majority of the meerkat's relatives have pointed ears.

MEERKAT CONSERVATION TALKING POINTS:

The Meerkat is not currently endangered and is considered “Least Concern” on the IUCN Red List. Meerkats play an important ecological role in the desert. They provide food for predators like jackals and eagles, and they curb pest infestation by eating insects. You can help meerkats by spreading awareness of their vital role in the Kalahari’s ecological balance.

PRAIRIE DOG RANGE/HABITAT

- Found on the Great Plains from southern Saskatchewan, into Montana, through the western plains of the U.S. into northern Mexico (see map)
- Open plains and plateaus, particularly the short grass prairie
- Of the five species of Prairie Dog, the black-tailed is the only species found within the vast Great Plains region of North America

PRAIRIE DOG PHYSICAL ADAPTATIONS

1. Skull/Dentation (see skull)

- Molars are low-crowned, which is characteristic of herbivores
- Grinding motion of jaws akin to herbivores
- Ever growing incisor teeth efficient for gnawing on tough plant matter
- Enamel on front surface of incisor only. Since enamel wears away more slowly, a sharp, chisel-like edge is maintained
- Have relatively large eyes high on the sides of their head, giving good peripheral vision but they also are able to focus on overhead objects exceptionally well

2. Size /Weight/Lifespan

- Average head and body length is 12 to 15 inches (including 2 - 3 inch tail)
- Average weight between 2 and 4 pounds
- Male is slightly larger in length and weight than female
- Lifespan 8 years wild, 12 – 14 years captivity

3. Body Coat/Fur/Tail (see prairie dog pelt)

- Fur is tan or brownish with whitish fur on their stomachs providing excellent camouflage from their predators

- Short stout body and short legs allow them to be close to the ground and hence their food supply. Short appendages allow them to move through their tunnels with greater ease
- Prairie dogs have tiny round ears, which are often hidden in the fur, protecting them from dirt when burrowing
- Named for the black tip on their short tail
- Undergo two molts per year, with slightly different pelage coloration in each molt. Fur is tipped black in winter but white in summer. This adaptation helps in thermoregulation and camouflage throughout the year as conditions change

4. Feet/Paws

- Black-tailed Prairie Dogs have short, muscular front legs
- Long claws on each of five digits that are used for burrowing

5. Senses/Scent Glands

- Excellent vision– able to spot prey at a distance
- Good sense of smell– prominent nose, allows them to put their nose to the ground and sniff for food
- Sharp hearing. Able to hear warning calls and hear if a predator is coming, even when listening from underground before they poke their head out of a burrow

PRAIRIE DOG BEHAVIORAL ADAPTATIONS

1. Life Style

- Prairie dogs have a highly organized society. They are burrowing animals that live in large colonies or “towns” of thousands of individuals. Within colonies, prairie dogs live in family groups called “coterie” of up to 26 individuals
- Towns may cover areas up to 160 acres
- Each coterie defends a home territory of about one acre. Dominant male provides protection and does most of the defending.
- The typical coterie territory contains about 30 - 50 burrow entrances.
- Use burrow mounds to prevent flooding, facilitate ventilation and serve as vantage point for the sentries to spot predators
- Burrows have connected chambers for specific uses like a listening room, sleeping room, nursery and a latrine. These inter-connected burrows provide the prairie dog with refuge as well as a place to rear their young and are a stabilizing factor on the physical and social aspects of the colony.
- Prairie dogs stand on their hind legs when looking for danger; stand upright atop mounds in order to see as far as possible. They also like to keep the height of the vegetation low around their mounds to improve visibility.
- When a predator approaches, prairie dogs scurry into their underground burrows. If a predator follows a prairie dog into its burrow, the prairie dogs respond by rapidly plugging up their tunnels with dirt. This traps the predator, at least temporarily. By the time the predator digs its way out, the prairie dog has had the opportunity to move out of danger.
- Each coterie has a single breeding male, three or four breeding females, and several nonbreeding yearlings and juveniles
- Tend to be in large groups foraging for food. There is safety in numbers.
- Cheek pouches allow them to carry food back to the burrow
- Grooming important to protect from insects and disease

- Prairie dogs don't have a true hibernation; their activity and appetite are decreased during the winter. They may sleep for many days at a time, but the town is usually active during the milder days of the winter

2. Communication

- Prairie dogs have a sophisticated communication system, with a host of calls, postures, and displays they use to alert the group of the presence of specific predators, such as coyotes, bobcats, badgers, black-footed ferrets, golden eagles and hawks. They can discriminate between airborne and ground predators, as well as individual humans dressed in different clothing.
- Named for their dog-like yip or sharp bark they make when danger approaches to warn other individuals.
- When the predator is gone, a special "all-clear" call informs family members that danger is over. Other communications include mouth-to-mouth contact, or "kissing," used to identify coterie members from those outside their group. (see photo)

3. Diet

- Diet consists primarily of grasses, roots and blossoms. Occasionally, they have been known to eat insects.
- At the Zoo, they eat vegetables, monkey chow, peanuts, and *Coprosma* (also known as mirror plant)
- They do not drink because they get all of the water they need from the plants. An important adaptation in an arid habitat.

4. Breeding/Reproduction/Growth/Parental Care

- Altricial young. Pup comes above ground at 6 weeks.
- Prairie dogs mate in March, and give birth to, on average, three or four pups in April or May, after a 28-35 days gestation period.
- Altricial young develop for several weeks underground before leaving their burrows
- Pups are nursed communally by other group members once they emerge from the burrows
- Males disperse before the first breeding season of their lives. They travel either to neighboring coterie or to a new site. Females remain in their natal coterie for life.
- Black-tailed prairie dogs are sexually mature at two – three years of age.
- Prairie dog copulation occurs in the burrows, and this reduces the risk of interruption by a competing male
- Alpha male of the family group fathers all the offspring

PRAIRIE DOG INTERESTING/FUN FACTS

- Biggest prairie dog town on record found in West Texas - about 100 miles wide, 250 miles long, and home to an estimated 400 million prairie dogs!
- Prairie dogs got their name from the short yip they make, that sounds like a bark.
- The Black-tailed Prairie Dog is the most common of the five species of prairie dog and is the only species found within the vast Great Plains region of North America. They were possibly the most abundant mammal in North America at one point.

PRAIRIE DOG CONSERVATION STATUS:

- Classified as least concern on the IUCN Red List due to the slow rate of their population decline and they are still rather common.
- Population is declining due to destruction of habitat.
- In the early 1800's, they roamed most of the western United States and numbered

about five billion.

- Since 1900, the population has declined by 98%
- Often poisoned or shot– considered pests by ranchers because they are capable of damaging crops, as they clear the immediate area around their burrows of most vegetation. They also eat grass meant for cattle, attract rattlesnakes and leave behind a maze of holes in pastures. A government-funded eradication program supported this killing for decades.
- Farming and development has further reduced the prairie dog's habitat to less than one percent of its historic size – from over 100 million acres to less than one million acres
- Widespread soil erosion is largely caused by overgrazing by cattle and not by the burrowing of prairie dogs. The prairie dogs prefer open patches of grassland, and will move into heavily grazed patches and are erroneously blamed for the degradation.
- Vegetation above a “town” is higher in protein and nitrogen and favored for grazing by bison, elk, pronghorn and cattle.
- Prairie dogs and bison have co-existed for thousands of years.

PRAIRIE DOG ROLE IN ECOSYSTEM:

- Black-tailed Prairie Dogs play an important role in prairie ecology and are considered a “keystone” species for the prairies because their colonies create islands of habitats that benefit approximately 150 other species. If this keystone species becomes extinct, it would mean the extinction of many other forms of life as well.
- Protecting the prairie dog can also help save other species; they are a food source for many mammals and birds, including coyotes, eagles, badgers and critically endangered Black-footed Ferrets.
- The Black-footed Ferrets inhabit prairie dog burrows and depend on them for more than 95% of their dietary needs. The war against the prairie dog is the main reason the black-footed ferret is now one of America's most endangered mammals.
- Many species, like Black-footed Ferrets, burrowing owls, snakes and badgers and tiger salamanders, use their burrows as homes.
- Prairie dogs even help aerate and fertilize the soil, allowing a greater diversity of plants to thrive and unearthing insects that birds like to eat. Grasses above a “town” are higher in protein and nitrogen. Large ungulates are known to preferentially graze on prairie dog colonies because of the more nutritious forage
- Prairie dog burrows act as aquifers that prevent water from eroding land while helping to cool it; by burrowing the land above one of the world's largest underground water supply, prairie dogs loosen the soil and allow rain to seep through and recharge it.

PRAIRIE DOG CONSERVATION ACTION:

- You can educate yourself and others on the plight of the prairie dog
- You can contact government officials at the local, state, and federal levels advocating further protection for black-tailed prairie dogs
- You can also make donations to charities trying to save the Great Plains and its wildlife



