Mammals

Docent Training, Placerita Canyon
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This session provides docents with a practical understanding of mammals — who they are, how they live, and how to interpret them accurately and responsibly for the public.

1. Why Mammals Matter

- Mammals strongly shape human emotions and beliefs about wildlife
- Most local human–wildlife conflicts involve mammals
- Docents influence how visitors understand risk, fear, and coexistence

Key role: Interpreter, myth-corrector, and guide toward coexistence.

2. What Defines a Mammal

Mammals share a combination of traits:

- Hair or fur (at some life stage)
- Mammary glands (milk for young)
- Warm-blooded metabolism
- Three middle ear bones
- Differentiated teeth

Important: No single trait applies to all mammals. It's the pattern that matters.

3. Mammals & Evolution (Brief Context)

- Mammals evolved over 200 million years ago
- Early mammals were small, nocturnal, and adaptable
- Modern traits reflect this history:
    - Strong senses (especially hearing and smell)
    - Parental care
    - Behavioral flexibility

Why this matters: Evolution explains behavior, not just anatomy.

4. Adaptations: Form Follows Function

Mammal adaptations relate to:

- Diet (teeth and jaws)
- Movement (feet, limbs, tails)
- Senses (vision, smell, hearing)
- Thermoregulation (fur, fat, behavior)

Key concept: Every adaptation involves trade-offs.

5. Behavior, Intelligence & Social Structure

- Mammal intelligence appears in many forms
- Social structures range from solitary to highly social
- Communication includes:
    - Vocalizations
    - Scent marking
    - Body language

Common misconception: “Alpha” and dominance myths oversimplify natural behavior.

6. Mammals That Break the Rules

Bats

- Only mammals capable of true flight
- Use echolocation to navigate and hunt
- Critical for insect control
- Frequently misunderstood

Marine Mammals (Overview)

- Adapted from land mammals to aquatic life
- Still breathe air and nurse young
- Example of convergent evolution

7. Living With Mammals

- Conflicts usually result from attractants and habitat overlap
- Coyotes, bobcats, and mountain lions are part of healthy ecosystems
- Human behavior strongly influences wildlife behavior

Docent framing: From “problem animals” to predictable, natural behavior.

Docent note: Refer visitors to posted park guidelines for specific safety instructions

8. Interpreting Mammals for the Public

- Meet visitors where they are emotionally
- Avoid sensational language
- Focus on behavior and ecology
- Saying “I don’t know” builds trust

Helpful Vocabulary:

altricial- Born helpless and requiring significant parental care.
Example: Newborn mountain lions are blind and fully dependent on their mother.

Allen’s Rule- Animals in colder climates tend to have shorter limbs and ears to reduce heat loss.
Example: Desert foxes have large ears, while cold-climate foxes have smaller ears

autotroph- An organism that makes its own food using sunlight or chemical energy.
Example: Plants that use sunlight to produce energy through photosynthesis.

Bergmann’s Rule- Animals of the same species tend to be larger in colder climates to conserve heat.
Example: Deer populations in colder regions are often larger-bodied than those in warmer areas.

carnivorous- Eating primarily other animals.
Example: A mountain lion eats deer and other mammals.

coevolution- When two species evolve in response to each other.
Example: Flowering plants and the mammals that pollinate or disperse their seeds.

compensatory reproduction- When a population increases reproduction in response to population loss.
Example: Coyotes often have larger litters when population numbers are reduced.

endothermy- The ability to generate body heat internally.
Example: Mammals can stay active in cold weather because they produce their own heat.

evolution- The gradual change in species over many generations due to inherited traits that help survival and reproduction.
Example: Mammals developed thicker fur in colder climates over time.

herbivorous- Eating primarily plants.
Example: A mule deer feeds on grasses, leaves, and shrubs.

heterotroph- An organism that must consume other organisms for energy.
Example: All mammals are heterotrophs because they eat plants, animals, or both.

homeothermy- Maintaining a relatively stable internal body temperature.
Example: A coyote keeps its body temperature steady even as air temperatures change.

mammal- An animal with hair or fur that produces milk for its young and is warm-blooded.
Example: A mule deer, bat, and mountain lion are all mammals.

omnivorous- Eating both plants and animals.
Example: Raccoons eat fruits, insects, small animals, and human food scraps.

precocial- Born relatively developed and able to move shortly after birth.
Example: Deer fawns can stand and walk within hours of being born.

Resources

- UC Berkeley – Understanding Evolution
  https://evolution.berkeley.edu/
- California Department of Fish & Wildlife – Mammals
  https://wildlife.ca.gov/Conservation/Mammals
- iNaturalist Mammal Project
  https://www.inaturalist.org/observations?project_id=5894
- Urban Coyote Research Project
  https://urbancoyoteresearch.com/
- Mountain Lion Foundation
  https://mountainlion.org/

The goal is not to memorize mammals, but to understand how they live and how we live alongside them.

Good luck, docents! Thanks for all you do!

Placerita Canyon Nature Center Mammals

Common Mammals

- Mountain lion
- Coyote
- Bobcat
- Mule deer
- Gray fox
- Raccoon
- Striped skunk
- California ground squirrel
- Desert cottontail
- Western gray squirrel
- Various bat species

Interpretive emphasis:
Large mammals often use the area at night or when human activity is low.