

WINDOWS TO NATURE: Museum Dioramas/North American Mammals

with

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www.makingwings.net



The Alaskan Bear diorama at the American Museum of Natural History in New York

Dioramas came out of conservation

Until the late 19th century, most museums displayed taxidermied animals and other natural specimens in aseptic rows of glass cabinets. This changed in 1890 when Carl Akeley, a taxidermist at the Milwaukee Field Museum, reimagined their presentation. What became known as the “Akeley method” involved creating a custom artificial environment — including rocks, soil, trees, sky, and whatever else was seen in the field — for a group of animals. The first example was his diorama of five muskrats in a carefully conceived set that contained a den, reeds, logs and sediment. Akeley went on to work at the Field Museum in Chicago and the American Museum of Natural History in New York City (where you can visit the Akeley Hall of African Mammals), and his exhibits influenced science and art institutions worldwide.

Ironically, although early dioramas depended on the use of hunted animals, they were born from the desire to protect the planet's fauna and flora. Many of the major contributors — most notably Akeley and friend President Theodore Roosevelt — were hunters and ardent conservationists. They wholeheartedly believed if they could immerse museumgoers in the natural world, people would be more likely to protect it. Museums became staffed with teams of scientists, sculptors, taxidermists, carpenters, muralists and painters who made dioramas. The workers here were constructing the giant panda exhibit at the Field Museum, which was unveiled in 1931; the specimens were collected by Theodore Jr. and Kermit, two of Roosevelt's sons.

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Natural-history dioramas

Natural-history dioramas seek to imitate nature and, since their conception in the late 19th century, aim to "nurture a reverence for nature [with its] beauty and grandeur". They have also been described as a means to visually preserve nature as different environments change due to human involvement. They were extremely popular during the first half of the 20th century, both in the US and UK, later on giving way to television, film, and new perspectives on science.

Like historical dioramas, natural-history dioramas are a mix of two- and three-dimensional elements. What sets natural-history dioramas apart from other categories is the use of taxidermy in addition to the foreground replicas and painted background. The use of taxidermy means that natural-history dioramas derive not only from Daguerre's work, but also from that of taxidermists, who were used to preparing specimens for either science or spectacle. It was only with the dioramas' precursors (and, later on, dioramas) that both these objectives merged. Popular diorama precursors were produced by Charles Willson Peale, an artist with an interest in taxidermy, during the early 19th century. To present his specimens, Peale "painted skies and landscapes on the back of cases displaying his taxidermy specimens". By the late 19th century, the British Museum held an exhibition featuring taxidermy birds set on models of plants.

The first habitat diorama created for a museum was constructed by taxidermist Carl Akeley for the Milwaukee Public Museum in 1889, where it is still held. Akeley set taxidermy muskrats in a three-dimensional re-creation of their wetland habitat with a realistic painted background. With the support of curator Frank M. Chapman, Akeley designed the popular habitat dioramas featured at the American Museum of Natural History. Combining art with science, these exhibitions were intended to educate the public about the growing need for habitat conservation. The modern AMNH Exhibitions Lab is charged with the creation of all dioramas and otherwise immersive environments in the museum.

A predecessor of Akeley, naturalist and taxidermist Martha Maxwell created a famous habitat diorama for the first World's Fair in 1876. The complex diorama featured taxidermied animals in realistic action poses, running water, and live prairie dogs. It is speculated that this display was the first of its kind [outside of a museum]. Maxwell's pioneering diorama work is said to have influenced major figures in taxidermy history who entered the field later, such as Akeley and William Temple Hornaday.

Soon, the concern for accuracy came. Groups of scientists, taxidermists, and artists would go on expeditions to ensure accurate backgrounds and collect specimens,^[24] though some would be donated by game hunters. Natural-history

dioramas reached the peak of their grandeur with the opening of the Akeley Hall of African Mammals in 1936, which featured large animals, such as elephants, surrounded by even larger scenery. Nowadays, various institutions lay different claims to notable dioramas. The Milwaukee Public Museum still displays the world's first diorama, created by Akeley; the American Museum of Natural History, in New York, has what might be the world's largest diorama: a life-size replica of a blue whale; the Biological Museum in Stockholm, Sweden is known for its three dioramas, all created in 1893, and all in original condition; the Powell-Cotton Museum, in Kent, UK, is known for having the world's oldest, unchanged, room-sized diorama, built in 1896.

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***BERNARD FAMILY HALL OF
NORTH AMERICAN MAMMALS***

(1942; late 40s and 50s; 1963)



GIANT CARIBOU: BACKGROUND:
Belmore Browne
FOREGROUND: George Mason
TAXIDERMMY: Robert Rockwell 1942



BIG HORN SHEEP: Belmore Browne
Ray DeLucia
Robert Rockwell 1942



MUSK OX: Francis Lee Jaques
George Mason
Robert Rockwell 1941



BISON AND PRONGHORN: James Perry
Wilson
Ray DeLucia, George Mason
Robert Rockwell 1942



ALASKAN BROWN BEAR: Belmore Browne
George Mason
Robert Rockwell 1941



ALASKAN MOOSE: Carl Rungius
George Mason
Robert Rockwell 1940



GRIZZLY BEAR: James Perry Wilson
Ray De Lucia
Gardell Christensen 1941



MOUNTAIN LION: Charles Shepard
Chapman
Ray DeLucia, George Mason
George Adams and Gardell Christensen
1941



A little fun, 1941 style. Ray DeLucia



JAGUAR: James Perry Wilson
Ray DeLucia
George Adams 1942



WOLF: James Perry Wilson
Ray DeLucia
George Adams 1948

1. CARIBOU:

- **Ungulates** are a diverse group of large mammals that includes horses, cattle, pigs, giraffes, camels, deer, and hippopotamuses. Most terrestrial ungulates use the tips of their toes, usually hoofed, to sustain their body weight while moving.
- **Deer** (singular and plural) are the ruminant mammals forming the family **Cervidae**. Species in the family include the white-tailed deer, mule deer (such as the black-tailed deer), elk, moose, red deer, reindeer (caribou), fallow deer, roe deer, pudú and chital. Male deer of all species (except the Chinese water deer) and female reindeer grow and shed new antlers each year. **(Only female reindeer have antlers.)**
- The caribou is a specialist that is well adapted to cooler climates with **hollow-hair fur** that covers almost all of its body including its nose, and provides insulation in winter and flotation for swimming.
- Caribou can reach a speed of 60–80 km/h (37–50 mph). Young caribou can already outrun an Olympic sprinter when only a day old. The caribou's favorite winter food is.
- Seventy percent of the diet of woodland caribou consists of arboreal **lichen** which take hundreds of years to grow and are therefore only found in mature forests.
- Long migrations: Some populations of the North American **caribou migrate the farthest of any terrestrial mammal**, travelling over 5,000 km (3,100 mi) a year, and covering 1,000,000 square kilometers (390,000 square miles).

Antlers are extensions of the skull grown by members of the deer family. They are true bone structures that usually grow in symmetrical pairs. In most species, only the male grows antlers and their primary function is to increase his likelihood of sexual selection by attracting females or helping him fight other males.

A **horn** is a pointed projection on the head of various animals consisting of a covering of keratin and other proteins surrounding a core of live bone. In mammals, true horns are found mainly among the ruminant artiodactyls.

2. BIG HORN SHEEP:

- The **bighorn sheep** (*Ovis canadensis*) is a species of sheep native to North America named for its large horns. These horns can weigh up to 30 lb (14 kg), while the sheep themselves weigh up to 300 lb (140 kg).

3. MUSK OX diorama (A story of politics.)

Frances Lee Jaques created the original design for the hall in 1929. He was acting head of the Exhibition Department while James Clark was on an expedition. When Clark returned, he was so threatened that he cut Jaques out of all aspects of designing the hall. The President Roy Chapman Andrews insisted that Jaques be allowed to do some of the work—and assigned him the musk ox background painting. There wasn't enough money for an exhibition, so the hides used were from a polar expedition by Admiral

Robert E. Peary and the background was based on one slightly over-exposed photo of Ellesmere Island from an 1881 expedition. Jaques cleverly turned the over-exposed area into a snow squall.

4. BISON AND PRONGHORN

- The only large diorama in the museum that shows a time other than the time of the Hall, in this case 1842 rather than 1942.
- **Bison** were nearly extinct by 1942 (from millions down to a thousand or so). This diorama speaks to the Museum's commitment to conservation and protection of wild life.
- *Buffalo* is a word that originated with the French fur trappers who called these massive beasts *bœufs*, meaning ox or bullock
- The **pronghorn** is a species of artiodactyl mammal indigenous to interior western and central North America. It is the only surviving member of the family Antilocapridae.
- **Prairie dogs** are mostly herbivorous burrowing rodents native to the grasslands of North America. The five different species of prairie dogs are: black-tailed, white-tailed, Gunnison's, Utah, and Mexican prairie dogs. They are a type of ground squirrel, found in the United States, Canada and Mexico.
- **Cowbirds:** These birds feed on insects, including the large numbers that may be stirred up by cattle. In order for the birds to remain mobile and stay with the herd, they have adapted by laying their eggs in other birds' nests. The cowbird will watch for when its host lays eggs, and when the nest is left unattended, the female will come in and lay its own eggs. The female cowbird may continue to observe the nest after laying her eggs. If the cowbird egg is removed, the female cowbird may destroy the host's eggs (see "Mafia hypothesis" for an explanation of this behavior).

5. ALASKAN BROWN BEAR

- Grizzly bears, Alaskan Brown Bears, and Polar Bears are all genetically the same species, *Ursus arctos*. In fact, they can mate with each other and produce offspring.
- Although brown bears don't mingle much, these two have gathered at a stream near Canoe Bay, Alaska, lured by the first fish of the salmon run. The millions of salmon that swim upstream each summer are a huge boon for bears, helping them regain body mass after winter hibernation.
- Thanks to nutrient-rich salmon, brown bears on the Alaska Peninsula coast and islands are the largest terrestrial carnivores today. Brown bears that live inland (such as the grizzly bears behind you) eat mainly plants—and can be half the size.

6. GRIZZLY BEAR

- Grizzly bears are actually the same species as the brown bears behind you. Members of this species can grow to very different sizes depending on where they live. **The nickname "grizzly" comes from the grizzled, or silver-tipped, hairs on their backs and shoulders.**
- You'd be wise to avoid stumbling upon this scene in the wild. Grizzly bears are unpredictable and may become aggressive if interrupted while eating or tending cubs. This mother is doing both: she's showing her six-month-olds how to tear open a rotted pine for ants and grubs to eat.

7. ALASKAN MOOSE

- Moose are the largest deer in the world. The biggest moose of all live in Alaska, where males can top 1,700 pounds (770 kilograms) and grow antlers 6.8 feet (2.1 meters) wide. Female moose (left) are much smaller and lack antlers.
- The striking differences between the sexes evolved primarily as a mating strategy. Big antlers signal to a female that a potential mate is of superior quality, which increases her chance of bearing a healthy calf. Males also evaluate antler size when deciding whether to fight over a female. Underequipped challengers will retreat, but equally matched bulls, like these, may battle.

- Two gigantic males clash for the right to mate with a female (left), interrupting the quiet of this Alaskan peat bog. Rival bulls will shove, clatter and twist their antlers, and even gore each other—sometimes for hours, and sometimes to the death.
- Although the cow appears to be a bystander and have little choice in her mate, she actually can sway the outcome. By protesting loudly when courted by an undesired male, she can incite a fight involving the bull she prefers—a larger one who will likely win. The winner will snort in success as the loser retreats, and the victorious pair can then mate without further harassment.
- Moose are distinguished by the **palmate (fan-like) antlers** of the males; other members of the family have antlers with a **dendritic ("twig-like")** configuration.

8. MOUNTAIN LION

- The **cougar**, also commonly known as the **mountain lion**, **puma**, **panther**, or **catamount**, is a large feline native to the Americas. Its range, from the Canadian Yukon to the southern Andes of South America, is the greatest of any large wild terrestrial mammal in the Western Hemisphere.
- Arizona's Grand Canyon National Park offers ideal habitat for cougars: shade to escape the heat, rugged terrain in which to ambush prey and nooks to eat carcasses in private. Typically solitary, males and females travel together only during the few days out of the year when they are mating.
- These agile cats actually lived across the United States until European settlers encroached. By the early 1900s, nearly all cougars east of the Rocky Mountains had been exterminated, like most other large predators in North America. Cougars are now making a comeback in some areas—even developed ones, where the risk of conflict with humans is real.

Grand Canyon

View from Point Sublime, North Rim

The scale of Arizona's Grand Canyon—both in space and time—is almost inconceivably vast. At its deepest, the canyon's rock walls plunge more than a mile (1.6 kilometers), carved by the Colorado River and its tributaries. The oldest rock layer formed 1,840 million years ago. That was long before North America took its current shape and before multicellular life emerged.

Eventually, the rock layers uplifted, forming a high plateau. The plateau was still rising 17 million years ago when the rivers began to cut channels in the soft rock. The uplifted land made the rivers flow over a steeper grade, accelerating erosion, so the chasm took shape deeply and quickly. By 1.2 million years ago, the layers were all exposed—one of the best visible records of geological history on Earth.

9. JAGUAR

- The jaguar is a big cat, a feline in the *Panthera* genus, and is the only extant *Panthera* species native to the Americas. The jaguar is the third-largest feline after the tiger and the lion, and the largest in the Americas.
- The jaguar is often described as nocturnal, but is more specifically crepuscular (peak activity around dawn and dusk).
- Like all cats, the jaguar is a carnivore, feeding only on meat.
- Unlike many other cats, **jaguars do not avoid water**; in fact, they are quite **good swimmers**. Rivers provide prey in the form of fish, turtles, or caimans—small, alligator-like animals. Jaguars also eat larger animals such as deer, peccaries, capybaras, and tapirs. They sometimes climb trees to prepare an ambush, killing their prey with one powerful bite.

10. WOLF

- The wolf (*Canis lupus*), also known as the **gray/grey wolf**, is a canine native to the wilderness and remote areas of Eurasia and North America. It is the largest extant member of its family, with males averaging 40 kg (88 lb) and females 35.5–37.7 kg (78–83 lb). It is also distinguished from other *Canis* species by its less pointed features, particularly on the ears and muzzle. Its

winter fur is long and bushy and predominantly a mottled gray color, although nearly pure white, red and brown to black also occur. There are 38 subspecies of *C. lupus*.

- The wolf is the most specialized member of the genus *Canis* known for cooperative big game hunting, its social nature, and its highly advanced expressive behavior. It is closely related enough to smaller *Canis* species, such as the coyote and golden jackal, to produce fertile hybrids with them. It is the only species of *Canis* to have a range encompassing both Eurasia and North America. It travels in nuclear families consisting of a mated pair accompanied by their adult offspring. The wolf is mainly a carnivore and feeds primarily on large wild hooved animals, though it also eats smaller animals, livestock, carrion, and garbage.
- James Perry Wilson painted the background as an homage to the victims of the Pearl Harbor attack. The stars in the diorama (difficult to see at first because of the bright moonlight) were plotted and painted exactly as they would have appeared over northern Minnesota (the location of the diorama) at 3:00 AM on December 7, 1941--the exact time and date of the attack. It's also a remarkable reminder that while a terrible event may be occurring somewhere, life is moving along as it always has somewhere else.

FOR MORE INFORMATION ON THIS HALL:

<https://www.amnh.org/exhibitions/permanent/north-american-mammals>



*Building the **BISON** diorama c. 1940*



*Belmore Browne painting the **ALASKA BEAR** background c. 1940*