

Hall of State

Science Education Program

The Hall of State reflects a resource for science education that few have known or appreciated. The building itself was constructed with natural resources from the state to show the value of those resources. Much of the wood and stone used in the construction of the building was resourced from East Texas and the Hill Country.

The lead architect for the building, Donald Barthelme, made sure that all the flora and fauna referenced in the building were native to Texas. He was so specific on this that he sent an assistant to the library to find field guides and other reference materials so that all the plants and animals he chose to use were accurately represented.

Remember you are walking back in time: The year is 1936.

HALL of STATE EXTERIOR

Exterior Frieze---Botany

The exterior frieze is the part of the building that is carved limestone with the names of famous Texas statesmen and heroes along the top of the building. You will notice that alongside each name is a plant. See if you can answer the following questions by looking at the front of the building:

How many different cacti are there represented in the bas relief carvings?

How many different flowers and how many different leaves do you see on the front of the building?

Flowers....can you identify them? Draw them.

Leaves...can you identify any? Draw them.

Any fruits or nuts? Which ones can you identify? Draw them.

Why do you think that the flora of Texas would be important to include on the Hall of State?

Building Exterior---Earth Science

Take a close look at the limestone used on the exterior.

You will notice that it looks smooth, but what does it feel like?

How is limestone created?

Is it a metamorphic, sedimentary, or igneous rock?

How old do you think this is?

Building Exterior---Fauna

Exterior has relief carvings on the sides of the lecture hall, in the back of the Hall of State, show a steer, a Pronghorn antelope, a Mountain lion, a Bighorn sheep and a Bison.

What industry does the steer represent?

What about the wildlife shown? How are they important to Texas? Give two reasons.

Look up the story about Charles Goodnight and how he helped save bison from extinction.

PORTICO

Portico-Bronze Doors

Before you enter the Hall of State take a close look at the double set of bronze doors. These are very important because they show the industry of the state at the time this building was completed in 1936. These industries depended solely upon the natural resources available.

What were the industries represented on the doors? List them all.

What were the natural resources these industries were reliant on to prosper and survive?

Are these industries still common today?

GREAT HALL

Great Hall--Biology

In the Great Hall you will notice not only the murals but also the mosaics on the floor. They are made from limestone that was quarried near San Sabe, Texas. These mosaics depict animals common to the state that most people would recognize.

Starting on your left:

Tarpon (*Megalops atlanticus*)

The Tarpon has long been celebrated as one of the most spectacular sportfish. It's fighting ability at the end of a fishing line results in arguably the most impressive aerial displays earning the name "The Silver King." Megalops are bony fish and their meat is not desirable so most Megalops are now released after they are caught. They have dorsal and anal soft rays and have a bluish or greenish back. Tarpons possess distinctive lateral lines and have shiny silvery scales that cover most of the body excluding the head. Tarpons grow to about 5–8 ft. long and weigh 80–280 lbs. It has been known to exceed 300 pounds, but the Texas record is 210 pounds, 86.25 inches, recorded in 1973.

Texas Horned Lizard (*Phrynosoma cornutum*)

Texas Horned Lizards (also known as Horny Toads), one of three horned lizard species in Texas, were historically distributed across much of the state, with the exception of the far eastern edge of the state. They have long been popular icons of Texas culture, and many older Texans can recount personal experiences with horned lizards. However, recent studies show that THL have declined in much of their range due to habitat loss and other factors. They are very specific in their preferred food source, the harvester ant. Concern about declining numbers and over-collection led Texas Parks and Wildlife Department to list the species as threatened in 1977.

Javelina (*Tayassu tajacu*)

In Texas, collared peccaries (often called "javelinas") occupy the brushy semi-desert where prickly pear is a conspicuous part of the flora. They are commonly found in dense thickets of prickly pear, chaparral, scrub oak, or guajillo; also in rocky canyons where caverns and hollows afford protection and in barren wastelands. Peccaries are active mainly in early morning and late afternoon and often bed down in dense brush or prickly pear thickets during the heat of midday. They are not to be mistaken for feral hogs.

Black-tailed Prairie Dog (*Cynomys ludovicianus*)

Black-tailed prairie dogs typically inhabit short-grass prairies. The term "prairie dog" is unfortunate because the animal is not related to a dog. It is a ground squirrel with a resemblance to a small, fat pup. These squirrels are sociable creatures and live in colonies, or "towns," that may range in size from a few individuals to several thousand animals. Such large concentrations are now a thing of the past and the prairie dog is now extirpated over much of its former range.

Northern Mockingbird (*Mimus polyglottos*)

The Northern Mockingbird is a medium-sized songbird. It is dull gray above with paler underparts. It is recognized by the white outer tail feathers of the long tail and white wing patches which are visible in flight.

Northern Mockingbirds have extraordinary vocal abilities - they can sing up to 200 songs, including the songs of other birds, insect and amphibian sounds, even an occasional mechanical noise.

Texas designated the mockingbird as official state bird in 1927. The Texas legislature noted that the mockingbird: "...is found in all parts of the State, in winter and in summer, in the city and in the country, on the prairie and in the woods and hills...is a singer of distinctive type, a fighter for the protection of his home, falling, if need be, in its defense, like any true Texan..."

Golden Eagle (*Aquila chrysaetos*)

The Golden Eagle is one of the best known birds of prey in the Northern Hemisphere. Golden Eagles maintain territories that may be as large as 155 square kilometers (60 sq mi). Golden Eagles nest in high places. They build huge nests to which they may return for several breeding years. Females lay from one to four eggs, and both parents incubate them for 40 to 45 days. Typically, one or two young survive to fledge in about three months.

In North America there has been a noticeable decline. The main threat is habitat destruction which has driven Golden Eagles from some regions they used to inhabit. Organochloride and heavy metal poisonings have declined thanks to tighter regulations on pollution. The Golden Eagle is legally protected by the Bald and Golden Eagle Protection Act in the United States. Available habitat and food are the main limiting factor today.

Turkey - two subspecies in Texas---

Eastern Wild Turkey (*Meliagris gallopavo sylvestris*),

The natural range covers the entire eastern half of the United States. They were first named "forest turkey" in 1817, and can grow up to 4 feet (1.2 m) tall. The Eastern Wild Turkey is heavily hunted in the Eastern United States and is the most hunted wild turkey subspecies.

Rio Grande Wild Turkey (*Meleagris gallopavo intermedia*).

This subspecies was first described in 1879. It has relatively long legs which are better adapted to a prairie habitat. Its body feathers often have a green-coppery sheen. The tips of the tail and lower back

feathers are a buff-to-very light tan color. Its habitats are brush areas next to streams, rivers or mesquite, pine and scrub oak forests.

The Wild Turkey was a very important food animal to Native Americans, but it was eliminated from much of its range by the early 1900s. Introduction programs have successfully established it in most of its original range.

Giant Roadrunner (*Geococcyx californianus*)

The roadrunner is famous for its appearance, its ability to eat rattlesnakes and its preference for running across deserts. Because of its lightening quickness, the roadrunner is one of the few animals that can prey upon rattlesnakes. Some Pueblo Indian tribes believed that the roadrunner provided protection against evil spirits. Some Anglo frontier people believed roadrunners led lost people to trails.

Black-tailed Jackrabbit (*Lepus californicus*)

The Black-tailed Jackrabbit is large, long-eared and is common throughout most of the western United States and in Texas except for the far eastern portions. Black-tailed Jackrabbits can be found on brushlands, prairies and meadows. Their food includes forage crops, cactus, sagebrush, mesquite, and numerous grasses and herbs. Jackrabbits always seem to be on their guard. They are very alert to their surroundings and watchful of potential threats. They rely on their speed to elude predators.

Ninebanded Armadillo (*Dasypus novemcinctus*)

Originally native to South America, the Nine-banded Armadillo is a cat-sized, armored, insect-eating mammal.

The common occurrence of this species in Texas is a phenomenon that has developed largely since 1900. The northward and eastward range expansions continued and by 1958 it was abundant everywhere in the region. Possible reasons for the armadillo's northward expansion since the nineteenth century include progressive climatic changes, encroaching human civilization, overgrazing, and decimation of large carnivores.

Of special interest is the behavior of this animal in the water. The armadillo normally rides low in the water when swimming. It tires easily when forced to swim for any distance. The armadillo can cross a small stream or creek by entering on one side, walk across the bottom, and emerge on the other side. If there is a river, the armadillo can ingest air, inflate themselves, and thus increase their buoyancy.

Western Diamondback Rattlesnake (*Crotalus atrox*)

The rattlesnake is found throughout the state, save the wettest eastern portions of the state. There are eight species of rattlesnakes common to Texas. Other species include the Timber Rattlesnake, Massasauga and Pygmy rattlesnake. The Black-tailed, Mojave, Rock and Prairie Rattlesnakes are found in the western regions of the state. This is the longest rattlesnake in Texas with the record length over 213 cm (84 in). All rattlesnakes are venomous, and therefore potentially dangerous if approached or handled. Rattlesnakes are not generally aggressive and will most likely flee if given a chance to retreat. The western diamond-backed rattlesnake is a key participant in the food web; it is an important

predator of many small rodents, rabbits, and birds. The western diamond-backed rattlesnake is in turn preyed upon by a variety of larger mammals and birds, such as coyotes, foxes, and hawks.

American Alligator (*Alligator mississippiensis*)

The American Alligator is the largest reptile in North America. It has a rounded snout on a large head with long jaws, protruding eyes and nostrils. Adults can range in size from 2-5 meters (6-16 ft.) with the largest record being 5.5 meters (19 ft.).

It can swim with just its eyes and nostrils above the water and will bask on the land near water. During the colder months it will hibernate in a burrow dug in mudbanks along the sides of the water. It feeds on crustaceans, snakes, fish, waterfowl, and small mammals. The alligator can drown larger prey by grabbing and holding it underwater. The American alligator is common in swamps, rivers, bayous, and marshes of the southern U.S., including the eastern third of Texas. While typically found in fresh-water, they can tolerate brackish water as well.

Conservation status of the Alligator has been upgraded. Once on the verge of extinction, it has made a tremendous come-back over the past 30 years. In 1969, Texas provided complete protection for the American alligator and classified it as endangered after passage of the Texas Endangered Species Act in 1973. Under this protection the species has made a full recovery. In 1985 it was delisted from the U.S. Fish and Wildlife Service endangered species list and is now considered a protected game animal in the state of Texas.

Please note:

In 1936 several of these species were threatened with extinction including the Tarpon from over fishing, the Turkey from over hunting, the Golden Eagle from hunting pressure, and the American Alligator from hunting for its hide. All have made a comeback due to the implementation of hunting and fishing regulations.

Review:

How many of these animals are depicted by the mosaics and list under the group they belong to:

Reptiles

Amphibians

Mammals

Birds

Fish

Insects

Which ones are recognized as state symbols for Texas?

Are any of these animals threatened or endangered today?

Which ones are no longer considered threatened or endangered today, but were in 1936?

Why are they are no longer considered to be close to extinction?

Are any of these animals venomous?

Murals---Flora and Fauna

The painted murals in the Great Hall depict plants that are indigenous to the state.

Why would plants be important for American Indians, the explorers and pioneers?

There is also a bird shown on one of the murals which is sometimes associated with death. This bird can smell carrion from over a mile away.

Do most birds have a sense of smell?

What is the bird?

Murals---Industry and Technology

Looking at the murals you will see many different types of transportation from the 1500's to 1936.

List them:

How has transportation changed in the last 400 years?

List the industries you see represented in the mural on the right.

Can an industry be created using plants and animals? What about minerals?

Would these be considered natural resources? Explain your answer.

Great Hall---Geology

Look at the columns in the Great Hall.

Is this the same kind of stone as on the exterior of the building?

What makes this different?

What kind of impressions do you see?

EAST TEXAS ROOM

East Texas Room---Flora and Industry

The wood used in the East Texas room is from a tree native to that part of the state. It has brilliantly colored leaves in the fall and spiky looking round seed balls. It is from the Gum tree. There are several varieties of Gum tree in East Texas, the Sweet Gum and Black Gum being two of the most recognized.

There are two plants easily recognized in the East Texas room. One of them is a very tall growing tree.

Do you recognize it?

Look at the lights above you to find them.

Also look at the photos along the wall. You will see them there also.

Do these trees have leaves?

What do they have instead?

The other plant is a smaller growing tree that blooms in the spring with white flowers.

It is carved over one of the doors. Can you find it?

Do you know what it is?

Why were trees important to the Texas economy in 1936? Hint: look at the photos.

Do you think they are important today?

What is the ecosystem represented by this room?

The Texas timber industry harvested the large trees used for the paneling and doors in the Hall of State.

WEST TEXAS ROOM

West Texas Room---Industry

The West Texas Room represents a certain industry that was synonymous to Texas for many years.

What industry do you think was common here?

What two kinds of animals that you see here were important in West Texas?

Look at the Tile pictures on the walls. They show activities of the people that lived in this region.

What were some of the occupations they represent?

How were they important to the Texas economy?

Are they still today? Explain.

Looking at the tiles on the floor what kind of plant do you see?

Why do you think that these plants were chosen to represent the West Texas room?

What are the ecosystems for this room?

NORTH TEXAS ROOM

North Texas---Industry

This room represents North Texas. Looking at the photos on the walls and the carvings above the doors what are the industries that were common to this region of Texas?

Did they include plants and animals?

Name the industries that used animals.

What were the animals?

Name the industries that used plants.

What were the plants?

Do you still see these industries today in Texas?

Looking at the doors and the carvings do these remind you of the wood used in the East Texas Room?

Why do you think that the years 1836 and 1936 are on the doors?

What are the ecosystems represented by the North Texas Room?

Looking at the mural what industries are represented in this room that are not seen in the others?

SOUTH TEXAS ROOM

South Texas Room---Industry, Conservation, Flora and Fauna

The South Texas Room contains a lot of mystical imagery showing the industry of the region in an idyllic-like setting.

One of the most interesting things to see is the three large white birds that the artist chose to paint in the large mural. In 1936, fewer than 15 of these birds were left in the wild. Today they are still very much endangered but the population has increased through conservation of habitat and hunting regulations.

Why do you think that is important?

Do you recognize this bird? It spends the winter months in Aransas Pass National Refuge on the Texas coast.

What kind of food do you see in the mural?

Is this area a good place to grow this kind of food?

What are the industries that you see represented in the mural and on the walls in this room?

The Gulf Coast is very important for Texas. Can you give some reasons why it is by looking at the mural?

Do you think that these industries still exist today as they did in 1936?

Texas symbols search:

What is the state flower?

What room did you see it in?

What is the state small mammal?

Where is it in the Hall of State?

What is the state large mammal?

It is shown in two places, where are they?

What is the state tree?

Did you see it anywhere in or on the building? Look closely.

Select two animals you have seen at the Hall of State to describe a predator and prey relationship.

Create a food web using only the animals represented in the Hall of State.

Describe a habitat using one of the regional room murals, photographs or other materials.

