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Extreme Habitats: Living Desert Dry
Bruce Museum
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Sonoran Desert Diorama, detail
Painting by Sean Murtha for the Bruce Museum

The extremely dry conditions that ravaged more than two-thirds of the United States this summer are an everyday occurrence in the world’s deserts, where the native flora and fauna have evolved adaptations to not only survive but thrive under the hyper-arid conditions.

The new, family-friendly exhibition Extreme Habitats: Living Desert Dry, opening August 25 and running through March 3, 2013 at the Bruce Museum in Greenwich, Connecticut, explores the complex ecosystems of deserts by looking at how and where they form, examining plant and animal survival strategies, and explaining the significance of these regions to our everyday lives. The exhibition also spotlights the global issue of desertification, the process in which fertile land is transformed into desert as a result of human-induced causes such as deforestation, poor agricultural practices and drought.

“More than a billion people live in desert regions that span nearly one quarter of the world’s land mass. The challenge for us is to live sustainably in these environments and to understand the impact we have on the land,” says exhibition curator Cynthia Ehlinger.

“The extreme aspects of deserts make them inhospitable for some life,” Ehlinger continues. “Temperatures can change widely from day to night, winds can create massive dust storms, and evaporation quickly dries out vegetation that has not adapted to the arid conditions. But some plants and animals have evolved to not just survive but to prefer these harsh conditions.”
Deserts are one of the major biomes of the world. Created primarily by global climate patterns and geographic features, they are usually defined by their lack of water – the average rainfall is ten inches or less. These extreme environments comprise a varied landscape that runs from shifting sand dunes and scorched ground to glacial ice sheets and rugged mountains.

“There are hot deserts and cold deserts,” Ehlinger adds. “In fact, much of the Arctic and Antarctica are considered polar deserts because they get so little precipitation.”

This exhibition, however, will focus primarily on hot deserts and features a live-size diorama of the Sonoran Desert of the Southwest, complete with spiny cacti, a coyote, gila monster, roadrunner and more.

“The scene suggests the interconnected community of plant and animal life in the desert, and explains how their adaptations to the dry conditions help them survive,” notes co-curator Peter Linderoth, who also manages the Museum’s outreach education program. “Our talented staff artist Sean Murtha painted amazingly realistic murals of both day and night scenes based on photographs from the Sonora Desert. We selected museum specimens, some collected more than fifty years ago by the late Museum curator and director Paul Howes, and added recent video clips and sounds of some of the animals to make the diorama come to life.”

A display of succulent plants on view actually is alive. “We wanted to show a few desert plants that represent both the diversity and commonality of desert plants around the world,” Ehlinger explains. “To highlight the concept of convergent evolution, in which unrelated species evolve similar traits, we feature two look-alike plants -- the aloe, native to Africa and the Arabian Peninsula, and the agave, native to the Americas. The saguaro is an iconic cactus unique to the Southwest, and ours is about 20 years old.” An interactive display that visitors can manipulate demonstrates the ability of cacti to expand and contract as they store water. Other living plants include the lithops, which look like living stones, and the spiny-stemmed Pachypodium rosulatum of Madagascar, also known as the Elephant’s Foot plant.

The exhibition also explores the physical and geological aspects of a desert through educational videos, displays of remarkable desert minerals and fossils, and interactive stations that invite visitors to understand the role of evaporation and how sand and wind interact to erode rock and form dunes. One rock from Hamden, Connecticut, represents a time 200 million years ago when even this area was part of a dryland region.

Our connection to the harsh yet fascinating environment of the desert is not so distant, however. Around the world, deserts are home to culturally diverse societies. Where people have learned to harness water, cities and civilizations have blossomed. Today, deserts are home to myriad societies of people – from nomads and subsistence farmers to industrial agriculturalists and wealthy urbanites. Irrigation has made desert agriculture a booming business. Natural resources in and under deserts are used for everything from energy production to hair products and food seasoning.

As the worldwide climate is poised for more dramatic changes and population pressures increase, desertification has become a significant global issue garnering the attention of world leaders.
Representatives to this summer’s UN Conference on Sustainable Development, also known as Rio+20, agreed “to strive to achieve a land-degradation neutral world.”

“Deserts remind us that even in a land of extremes, maintaining the delicate balance between living organisms and the non-living components – water, soil and air – are what makes an ecosystem work,” Ehlinger concludes. “The challenges of water scarcity and sustainable living are issues that affect not only desert dwellers but everyone.”

Desert Programs
A series of lectures, a family day event and vacation workshops are planned in conjunction with the exhibition. A lecture series begins on Tuesday, September 18, at 6:30 pm, when Dr. Peter B. deMenocal of Lamont-Doherty Earth Observatory will discuss “Desert Formation and the Emergence of Civilization.” A “Look and See: Living Desert Dry” program for pre-school children and their caregivers will take place on October 10. The Deserts Family Day on Sunday, November 18, will include live animals from the desert, and the School Vacation Workshops on December 27 and 28 will feature desert dyeing and weaving activities for children.

About the Bruce Museum
Explore Art and Science at the Bruce Museum. The Museum is open Tuesday through Saturday from 10 am to 5 pm and Sunday from 1 pm to 5 pm; closed Mondays and major holidays. Admission is $7 for adults, $6 for students up to 22 years, $6 for seniors, and free for members and children less than 5 years. Individual admission is free on Tuesday. Free on-site parking is available and the Museum is accessible to individuals with disabilities. The Bruce Museum is located at One Museum Drive in Greenwich, Connecticut.

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