Arizona’s Deserts

There are roughly 21 different deserts in the world. Many people think that all deserts are hot. This is not true. Eight are considered cold because snow falls regularly in the winter. So then, what makes a desert a desert?

All deserts are different in plant and animal life, size and location, yet they share two common characteristics. All are dry and all have a high rate of evaporation. Deserts generally receive less than 10 inches of rainfall a year, but evaporate more than that. So they are considered dry.

There are four deserts in North America. Arizona is the only state in the United States where parts of all four can be found. They are the Great Basin, Mojave, Chihuahuan, and the Sonoran deserts. The Sonoran desert is the largest in our state.

Mojave Desert

The Mojave desert (it is also correct to spell it Mohave) in Arizona covers only a small portion of the northwestern corner. The Mojave is the driest of the North American deserts. The summers are very hot and the winters are cold (it sometimes snows). Nearly all the rainfall comes in the winter. Because the winters are cold, most plants are inactive. Inactive plants do not use water. So even though there is water, plants are not able to use it.

Despite the harsh climate, many species of plants and animals live there. About one-fourth of the plants are endemic to the Mojave desert. This means they are found nowhere else but in the Mojave desert. The Joshua tree (not really a tree but a yucca) is one of these plants. There are also many animals that live in this desert like the Mojave desert tortoise, tarantula, Gila monster, scorpions, bighorn sheep, hummingbirds, and kangaroo rats.

Great Basin Desert

The Great Basin desert in Arizona lies north and east of Flagstaff. The Grand Canyon is in the Great Basin desert. This is a cold desert that gets lots of snow. The summers are warm, only occasionally getting over 100° F. It rains a little throughout the whole year in the Great Basin desert. Because winters are so cold, most plants are dormant (not growing) and cannot use the winter rainfall.

The Great Basin desert has fewer types of plants and animals than the other three North American deserts. The most common type of plants are shrubs such as sagebrush and saltbush. You can stand in parts of the Great Basin desert and see nothing but sagebrush for miles around -- no trees, no cactus, or anything else but sagebrush! Animal species that are found here include the golden eagle, coyote, spadefoot toad, pronghorn antelope and the Great Basin rattlesnake. Arizona’s two introduced buffalo herds occur on ranches in the Great Basin desert.

Figure 1: General Boundaries of the Four Deserts of Arizona

[Map showing the boundaries of the four deserts of Arizona]
Chihuahuan Desert

The Chihuahuan desert is the largest desert in North America. It can be found in the extreme southeastern corner in Arizona. The Chihuahuan desert is covered with shrubs and grasses like the Great Basin desert. There are also many types of cacti, succulents, wildflowers, and short trees. The Chihuahuan desert is generally found above 3,500 feet in elevation. Because it is a high desert it does get frost. It also receives more rainfall than the other three North American deserts. Agave, yuccas and mesquite are the most common plants. Other plants include prickly pear, agave and mesquite. Some animal residents include the Swainson’s hawk, black-chinned hummingbird, javelina, ringtail cat and the western diamondback rattlesnake.

Sonoran Desert

The Sonoran desert covers more of Arizona than any of the other three deserts. It is the desert that surrounds Phoenix, Tucson, Gila Bend and Yuma. The Sonoran desert supports the most types of plants and animals of the four North American deserts. Over 2,500 different flowering plants can be found there. Winters are mild (rarely snows) and the summers are hot. The Sonoran desert gets both winter and summer rains. Because the winters are mild, most plants do not go dormant. (So when it rains in the winter plants are able to use the moisture.) However, a number of plants do go dormant in the hottest part of the summer. Summer rains tend to be brief but very, very heavy. Most of the summer rain is lost to runoff because it cannot soak into the ground. The Sonoran desert supports many types of trees, grasses, cacti, shrubs and wildflowers. The saguaro cactus only grows in the Sonoran desert. The Gila monster, roadrunner, horned lizard, javelina, desert mule deer, giant vinegarone and kangaroo rat are but a few of the animals that live in the Sonoran desert.

Activity I: Word Search

Use the following clues to find the words hidden in the puzzle. Words can be found forward, backward, or diagonal. The unused letters spell out a special message.

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G I L A B E N D S N C S
A R E M M U S K E S R A
C S A G E B R U S H E L
H L I N Z R Z A R D O T
I C O L D A E S A R S B
H I N O S C U T A N O U
U M D B I R A U N D T S
A E S A R U G N E I E H
H D M O H A V E Y F W O
U N U S S X I N E O H P
A E O N D I N O U R N A
N J D E V A J O M E S M
N O I T A R O P A V E U
S O N O R A N E R T S Y
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1. Not all deserts are hot, some are _______.
2. The two most common types of shrubs in the Great Basin Desert.
3. The largest North American desert.
5. Deserts have a high rate of _______
6. Abbreviation of the only state in the United States where all of the North American deserts can be found (diagonally).
7. There are two correct spellings for this desert (find both).
8. This plant is not a tree but a yucca.
9. The most common plant in the Chihuahuan Desert.
10. Three cities and one town that are surrounded by the Sonoran Desert.
11. This cactus grows only in the Sonoran Desert.
12. The Sonoran Desert gets rain in both of these seasons.
13. This National Park is in the Great Basin Desert.
14. A word meaning “not found anywhere else.”