



# WILD Kids



## BIOTIC COMMUNITIES OF ARIZONA

There are currently 29 biotic communities listed for the southwestern United States and northern Mexico. A **biotic community** is a region that can be identified by a distinct plant community or associations. (**Biome** is interchangeable with biotic community.) A biotic community is made up of plants that are generally not found in other places and are easily recognized and identifiable. These regions can be created by regional climate (temperature, wind, rainfall, solar intensity), elevation, slope exposure (north facing versus south facing slopes of hill and mountains), soil type and the presence or absence of cold air drainages. (Cold air drainages are generally found between two closely spaced mountains or hills.) Biotic communities are defined by plant association and not animal associations because if an animal cannot find food, water, or shelter it will leave. Plants cannot leave. Thus plants represent adaptations to a particular set of environmental conditions of the biome.

In Arizona, there are six main biotic communities: tundra, forest, woodland, scrub, grassland and desert. Each of these main communities can be further subdivided.

### CHAPARRAL

The chaparral biome is also referred to as **scrub**. It is an association of stunted or scrubby trees and shrubs. Chaparral is a fire-dominated biome. The seeds of many chaparral plants are fire adapted. This means that in order for some seeds to sprout, they must first be scarred by and survive a fire. The frequent presence of fire prevents most large trees from becoming established.

Common chaparral plants in Arizona include manzanita, shrub oak, stunted willow and stunted juniper. Chaparral is extensive in Arizona, covering 3.5 million acres.

Most people are familiar with the term “chaps” - the leather half-pants that cowboys wear over their pants to protect the front of their legs. Cowboys wear chaps when they need to find stray cows in chaparral. Many chaparral plants are thorny and scratchy. Chaps protect cowboys when they are riding through chaparral.

### GRASSLAND

As the name of this biome suggests, grasslands are dominated by grasses. Occasionally a few scattered trees are present. Grasslands are found at all elevation in Arizona, from 3,800 to 7,200 feet.

The **montane meadow grassland** is found in the moist meadows of the Mogollon Rim and White Mountains. These grasslands are generally surrounded by ponderosa pine or spruce and fir forests. The **Great Basin or plains grassland** is located north of the Grand Canyon in an area referred to as the “Arizona strip.” If trees are present they are generally junipers. Finally, the **semidesert grassland** is found in the lower elevations. Yucca, mesquite, and juniper may be present. Semidesert grasslands are found in southeastern Arizona, especially around the towns of Patagonia, Sonoita and Sierra Vista. All three types of grasslands receive 10 to 20 inches of rainfall a year.

### DESERT

Deserts are generally described as regions receiving less than 10 inches of rainfall a year. Deserts in Arizona can be found from 190 feet below sea level to 7,200 feet in elevation. The desert biome in Arizona cannot be identified by one particular set of plants, because four different deserts are found throughout Arizona. Arizona is the only state in the United States where all four North American deserts can be found. The four deserts are the Great Basin, the Mojave (Mohave is also correct), the Chihuahuan, and the Sonoran desert.

The **Great Basin desert** is found in the northern part of Arizona. It is dominated by sagebrush, almost excluding other plants in some places. In some areas of the Great Basin desert, a person can see nothing but sagebrush for miles in all directions! Other vegetation includes cacti, agave, annual wildflowers, creosote and other shrubs.

The Great Basin desert is considered a cold desert because of its relatively severe winters. Snow is not uncommon. It is the largest of the four North American deserts.

The **Mojave desert** is characterized by evenly spaced shrubs such as creosote, bursage, and a yucca called the Joshua tree. Rain occurs mostly in the winter when most plants are dormant. As such, the rain is unavailable for plants to use. In Arizona, the Mojave desert is found in the northwestern corner of the state around Lake Mead. It is the smallest of the four North American deserts.

The **Chihuahu desert** contains a large variety of plants. It is distinguished from the other deserts by the lack of tall tress and an abundance of agave and yucca. Many types of cacti, wildflowers, shrubs and even creosote is found here. The Chihuahuan desert can be found in the southeastern corner of Arizona.

The **Sonoran desert** is not the largest in size of the four deserts, but it is the largest in Arizona. The Sonoran desert is considered to be a subtropical desert due to its bi-seasonal rainfall (summer and winter). This desert is identified by **columnar cacti** (saguaro, senita, barrel, organ pipe) and **legume trees** (mesquite, palo verde, ironwood, acacia). Creosote is also found in the Sonoran desert.

The Sonoran desert is famous for its spring wildflower displays in wet years. It is interesting to note that the saguaro cactus is found only in the Sonoran desert and 99% are found only in Arizona in the United States (there are many in Sonora, Mexico).

### Activity I: Word Search

List as many words as you can find in the letters:

## BIOTIC COMMUNITY

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0-10	Fair	18-25	Excellent
11-17	Good	26+	Superior

### Activity II: Habitat Map

- 1) Obtain a map of your school grounds. If this is not available make one for yourself. This map is going to be your habitat. Show the actual size relationships between building, parking lots, playing fields, etc. Include the location of trees, flower beds, garbage cans, bird feeders, shrubs and sidewalks. In other words, make your map as accurate as possible and include **everything** found on the school grounds.
- 2) Decide what biotic communities can be found in your habitat (i.e. cement biome, short grass biome, tree biome, building biome, garbage can biome). Mark them on your map. You may want to use color. It helps in visualizing the overall picture of your habitat.
- 3) You will need some time to observe what organisms use the various biomes. Make up an observation sheet that includes things like plants, birds, mammals, fish, arthropods, reptiles, and amphibians. Record the type of food, water, and shelter each organism used. Also, record soil type (gravel, sand, cement, rocks). Can you identify each of your biomes by the type(s) of plants found there and not in another biome?
- 4) Share your map with the other students in your class. How are the maps the same? How are they different? Does everyone have the same names or boundaries for their biomes? Why or why not?

Other questions to consider: What was the most common animal in your habitat? Why? If your habitat is missing a category of animal, what can you do to provide the correct habitat for it to survive?

If you have time, ask your teacher to let you do the Project WILD activity “**Polar Bears in Phoenix?**”