

Teacher Background Information: Native Knowledge in the Sonoran Desert Region

People in the Sonoran Desert

The Sonoran Desert Region covers a geographic area of approximately 100,000 square miles of the southwestern U.S. and northwest Mexico. Its boundaries are defined by the plants, animals, and topography distinct to the region. It is a land of extreme temperatures, high evaporation, low rainfall, and little available water. It is topographically diverse, spanning from sea level deserts along the Gulf of California to



higher elevation grasslands and “sky island” mountains which reach up to 9,000 feet in elevation. These factors make it one of the most biologically diverse desert regions in the world.

People have lived here for thousands of years, developing knowledge of the region’s ecology to survive in a sometimes-harsh environment. Native peoples have been technological innovators, constantly observing and experimenting with materials to make life easier. Through observation of the natural world, native peoples have developed knowledge of the relationships and interactions between living things and their environment to improve their own quality of life and chances for survival.

Ethnoecology and Ethnobotany

Ethnoecology is the modern study of how cultures such as native groups manage the natural and modified ecosystems they inhabit to meet their needs for survival. It is an ecological approach to understanding traditional knowledge of land, plants, and animals in a local environment. **Ethnobotany** is the study of how people use plants. The Sonoran Supermarket Desert Discovery Program and Sonoran Supermarket Lending Kits focus on the plant materials available to native peoples in the region because in their diversity and abundance, plants provide the majority of the materials needed for human survival,

including food, medicine, shelter, tools, clothing, and more. Of the over 2500 species of plants in the Sonoran Desert, it is estimated that nearly 30% (or 750 species) have been documented as being used in some way by the various desert cultures.

People of the Sonoran Desert Region

Numerous groups of native people inhabit the Southwestern U. S. and northwestern Mexico. Several are indigenous to the Sonoran Desert, including the Tohono O'odham, Hia-Ced O'odham, Akimel O'odham, Pima, Yaqui (Yoeme), Cocopa, Yuma, and Seri. The neighboring highlands of the Sierra Madre in Sonora, Mexico, are also home to the Opata, Warihio, Jova, Mayo, and Lower Pimans.

The Sonoran Supermarket Desert Discovery Program and Sonoran Supermarket Lending Kits focus primarily on three groups of native peoples: the Tohono O'odham, Yaqui (Yoeme) and Seri. Each group traditionally utilized planting, harvesting, and ceremonial cycles based on the seasons and available resources found in their particular region. Although species vary from location to location, many of the plant genera and uses are similar. Previously, many of these people led a somewhat nomadic lifestyle, migrating with the seasons, or moving because of conflict between different cultural groups in their homelands. Today their lands have been restricted to specific areas dictated by U.S. or Mexican federal decree.

Tohono O'odham

For thousands of years, the traditional O'odham homelands encompassed a vast area of the Sonoran Desert region, from northern Sonora and west to the Gulf of California, north to central Arizona near present-day Phoenix, and east to the San Pedro River basin. In historic times, these lands and their residents have had many designations imposed upon them by foreign governments including Spain, Mexico, and the United States. Today O'odham peoples are federally recognized in the United States as four geographically and politically distinct tribes: The Tohono O'odham Nation, the Gila River Indian Community, the Ak-Chin Indian Community, and the Salt River (Pima Maricopa) Indian Community. A fifth, the Hia-C'ed O'odham, are not federally recognized, but reside throughout southwestern Arizona. All groups speak various dialects of the O'odham language, derived from the Uto-Aztec language group. The name Tohono O'odham (Toe-HO-no AH-tum) means "Desert People." The tribe was formerly known as the Papago, which is a Spanish corruption of a Piman term for "tepary bean eater."



The Tohono O'odham Nation is the second largest reservation in the U.S., covering 2.8 million acres or 4,460 square miles of Sonoran Desert in four non-contiguous parcels. In

Sonora, approximately nine O’odham communities are found just across the U.S/Mexico border. Formerly, residents of these communities crossed the border freely to utilize health care and other services available to tribe members north of the border, but today, tighter U.S. immigration policies have made this more difficult, resulting in division between these communities.

Oral tradition indicates that the Tohono O’odham are likely descendants of the early farmers and later Hohokam people who inhabited the Tucson area from around 500 A.D. until around 1450 A.D. Historic records of the Tohono O’odham in the region began with the arrival of the Spanish around 1690. In 1691, Father Kino made contact with the Tohono O’odham living at Bac and Chuk Shon. In 1700 he established the Mission San Xavier del Bac and introduced Christianity, wheat, livestock, fruit, and metal tools to the region. The San Xavier Reservation was established in 1874, and the main Tohono O’odham reservation was established in 1917.

Today the Tohono O’odham tribe includes approximately 28,000 members. The tribal government runs health care, education, and other services. The Tohono O’odham language is still spoken and taught in schools, but fluency has declined markedly with younger generations. Entities such as the Tohono O’odham Cultural Center and Museum, Tohono O’odham Community College, and Tohono O’odham Community Action (TOCA) are making great efforts to keep the traditions of the people alive and pertinent to tribal life today.

Yaqui (Yoeme)

The Yaqui homeland is centered along the rich floodplain of the Yaqui River Valley in Sonora, Mexico, where they farmed and fished. By 552 AD, Yaqui family groups ranged and settled throughout the Sonoran Desert region as far north as the Gila River. The Yaqui traded native foods, furs, shells, salt and other items with tribes including the Shoshone, Comanche, Pueblos, Pimas, Aztecs, and Toltecs. Their oral traditions prophesied disunity and invasion by foreign peoples, and by pre-Columbian times they were organized into autonomous but unified military and cultural groups, prepared to defend their homeland along the Yaqui River.

In 1533, the Yaquis encountered the first white men in their region, a Spanish military expedition, which heralded in a 400 year period of conflict and struggle against successive waves of Spanish and Mexican settlers seeking to subjugate them and take their lands. Between 1608 and 1610, the Spanish attacked violently and repeatedly, but the Yaquis successfully raised an army of 7,000 to defeat them. In an effort to secure peace, the Yaquis asked the Jesuit missionaries to establish churches, and most of the 60,000 Yaquis settled in the eight sacred “pueblos” or towns where these churches were established.

Peace was elusive, however. The Yaquis continued to resist subjugation, despite massacres, deportation, and disease diminishing their population. Many Yaquis left



Sonora to join family groups in Arizona living along the Santa Cruz and Gila Rivers in communities such as Old Pascua and Barrio Libre in Tucson, Yoem Pueblo in Marana, and Guadalupe near Tempe. Today, the Yaqui have lands in both Mexico and the U.S. formally recognized by both governments. In 1939, the Yaqui of Sonora received official recognition and title to their land, yet the loss of culture continued as large dams along the Yaqui River forced Yaqui farmers to buy water, further diminishing their self-sufficiency. Today an estimated 32,000 Yaquis live in the region.

In 1964, the Pascua Yaqui Association received 200 acres southwest of Tucson where New Pascua Pueblo was built. In 1978, New Pascua received formal recognition as a U.S. Indian Tribe. The older Yaqui communities are not formally recognized by the U.S. Bureau of Indian Affairs, but they receive help from the tribal government of New Pascua. About 6,000 Yaquis live in the U.S. today.

Yaqui cultural traditions, with their unique blend of indigenous and Christian beliefs, flourish in southern Arizona. Yaqui Easter Ceremonies are open to the public at Old Pascua and include a week of traditional music and masked dancers depicting events of Holy Week. Central to the Easter observances is the Deer Dancer, a highly respected and important symbol of ancient Yaqui cultural and spiritual belief.

Seri

The Seris, or *Comcáac*, as they call themselves, live along the central Gulf of California coast of Sonora, Mexico, across from Tiburón Island. They are a unique cultural group of hunter-gatherers and seafarers who survive in some of the harshest conditions within the Sonoran Desert region, where annual rainfall rarely exceeds two inches. Drinking water here is a scarce commodity, limiting the size of communities to extended family groups. These groups were small and nomadic – they migrated over large areas and dwelled in temporary camps to find resources to survive.

At first contact with the Spanish with Coronado's expedition in the 16th century, the population of Seri groups was probably around 5,000 people. Like other indigenous groups, their territory and numbers shrunk as a result of persecution and disease. In the 1930's only about 300 Seris remained, most of them concentrated on Tiburón Island. The straight that separates the island from the mainland is one of the most dangerous in the world, but the Seri navigated it expertly on balsa rafts made of *carrizo* or reedgrass (*Phragmites australis*) lashed together with mesquite root twine.

By the 1960's the Seri returned mostly to the mainland, participating in the fishing economy of the region. They also became known for their ironwood carvings and basketry. Today the population is close to 1,000 people living in the two villages of Punta Chueca and El Desemboque north of Kino Bay, Sonora.

Tucson: A Long History of Settlement

Tucson's name is derived from the Tohono O'odham word *Chuk Shon*, meaning "black base," which refers to the foot of Sentinel Peak or "A" Mountain. At this spot, the mountain's bedrock pushed groundwater along the Santa Cruz River basin to the surface, providing life-giving perennial flow until overpumping in the last century depleted it completely. What we view today as a dry, channelized ditch that only flows after rain storms was once a lush riparian area where native communities lived, subsisting off wild foods and using the river's water to cultivate corn, beans, squash, and possibly cotton. Recent archaeological excavations near A Mountain have revealed that Tucson has been home to native people for at least 4,000 years, making it one of the oldest continuously inhabited settlements in the U.S.

Beyond the permanent water in the Santa Cruz River, other factors also made this setting ideal for survival. Mild winter temperatures and two distinct rainy seasons provide for a nearly year-round growing season with two distinct periods of plant growth. Gentle winter rains allow for the harvest of wild greens and herbs from February through April. They also provide moisture for perennial plants like legume trees and cacti which set fruit and seed in late spring or early summer, awaiting germination with summer monsoon storms. Wild foods, supplemented with crops of squash, beans, and corn, are available throughout an annual succession of harvests; one food often ripens just as another becomes scarce. For example, cholla buds are collected in early spring, saguaro cactus fruits in foresummer, and prickly pear cactus fruits in mid-summer. Mesquite pods are ready to harvest in late summer and early fall as cactus fruits become scarce. Food storage was an important provision against starvation during the lean times between harvests. Ethnobotanical knowledge of when and where shoots appear, fruits ripen, and roots or bulbs are ready for harvest, as well as how to store and preserve them, requires an intimate awareness of the Sonoran Desert environment.

It is important to note that ethnobotany is the study of all people's uses of plants. "Newcomers" to the Sonoran Desert, settlers who arrived beginning with the Spanish in the late 1600's, have also made use of the native plants of the desert. For example, Hispanic "curanderos" used native plants for medicine or ceremony, learning from native groups and from their own experimentation.

Native knowledge is still alive in our region and still useful, even vital, today. The Tohono O'odham, for example, suffer some of the highest rates of diabetes in the U.S., due largely to the incorporation of processed carbohydrates and sugary foods into their diet. Many of the native foods they traditionally consumed, however, have been proven to be highly effective in managing blood sugar. Groups such as Tohono O'odham Community Action (TOCA) are calling for a return to the use of these native foods to keep their people healthy. Additionally, these foods grow in many Tucson back yards as landscape plants and can provide a fun and healthful way to forge a deeper sense of place that is connected to the long history of native plant use in this region. Organizations such

as the Arizona-Sonora Desert Museum, Tucson Botanical Garden, Native Seeds/SEARCH, the Community Food Bank, Desert Gatherers, Santa Cruz Valley Heritage Alliance, and Pima County Natural Resources, Parks and Recreation offer a wide variety of learning opportunities within our community. See the resources below for more information on how you, too, can be a part of this growing movement to cultivate our “taste of place.”

