



U.S. Fish & Wildlife Service

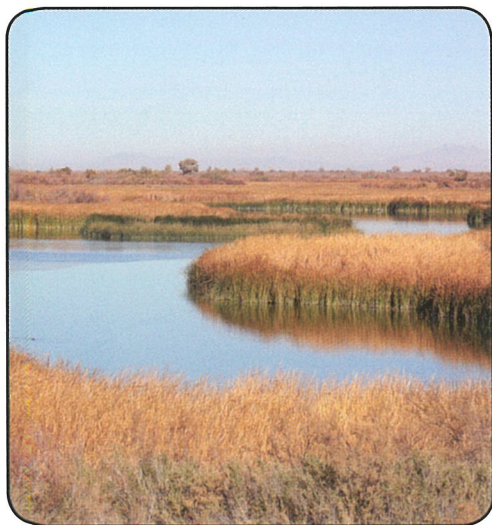
# Desert Trail

## *Cibola National Wildlife Refuge*

This trail was designed and constructed in 1996 by the Youth Conservation Corps to educate the general public on various desert plants and animals. Numbered posts set along the trail correspond to sections of this brochure and highlight some of the interesting features of the Sonoran Desert.

Cibola NWR was established in 1964 to offset the impacts of fish and wildlife habitats resulting from the channelization of the lower Colorado River. Cibola's primary purpose is to provide habitat for animals and migrating birds of all types.

Prior to channelization, the Colorado River meandered through the Palo Verde Valley. Annual floods bringing run off from the Rocky Mountains played an important role in this ecosystem. During the flood stage, the river could enlarge to five miles wide.



Upstream dams and levees have restricted the river. It no longer meanders through the historic floodplain. Many of the natural ecosystems have been greatly altered. To accommodate these changes,

Cibola NWR uses resource management techniques to simulate historic conditions and recreate habitats that existed during the pre-dam era.

### **Site 1: Observation Deck**

Here you will overlook Farm Unit 1 and the historic floodplain of the lower Colorado River. With the cooperation of farmers, this unit transforms itself during the cooler months.

During the winter season (November through March), crops provide forage for thousands of sandhill cranes, Canada geese, snow geese, and many kinds of ducks. A large majority of migrating geese winter on Cibola NWR. Early morning and evening flights are spectacular to watch. The birds may form the familiar V-shape and then mold together slowly as the leader falls behind while another flies up to take its place. Eventually, they come to rest and feed on the fields prepared for them.



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### **Site 2: Desert Soils**

Desert soils may look dead and barren; however, they are in fact active ecosystems. In a desert environment, the ground has a blackish tint in certain areas. The surface of the rock gives off a dark appearance as a result of being covered by a thin layer of bacteria. Through oxidation, the bacteria absorbs atmospheric minerals and cause the minerals to adhere to the rocks surface. During this process, desert patina is formed.

Soils in the desert are made up of tiny bits of rocks and mineral with very little organic material. Strong desert winds and monsoon rains remove the fine particles on the surface leaving behind larger rocks.

### **Site 3: Upland Vegetation at Bench**

The plant life growing throughout this site are only a few of many varieties found in the desert. Honey mesquite, palo verde, wolfberry, saltbush, creosote, and desert mistletoe all provide food and shelter for insects, birds,



reptiles and mammals. These plant species have adapted to survive in temperatures averaging 108–110°F in summer with little to no rain. Reducing the leaf size helps to conserve water. Some plants, like the palo verde, will drop its leaves during the hottest, driest parts of the year. After a rain, this species leafs-out quickly to produce food. Look carefully in the trees for birds moving in the branches.

#### Site 4: Creosote Bush

The creosote bush brings a unique addition to the trail. This bush is rightly named, for it emits an odor much like the creosote tar used to preserve the wood of telephone poles. As a means of survival, the plant coats its leaves with an oil to reduce water loss.

Creosote was originally used by different desert tribes as an antiseptic and an emetic. The antiseptic killed various germs, while the emetic worked to induce vomiting after poison ingestion. For people suffering from diabetes, this plant served as a hypoglycemic (low sugar) agent. Other uses have been listed in the medical literature for over one hundred years.

#### Site 5: Honey Mesquite

The honey mesquite has a distinctive appearance. Two different types of mesquite inhabit this ecosystem. This tree grows fairly rapidly, up to 50 ft. in areas where other trees cannot flourish.



*Ruby-crowned hummingbird.*

It is a hearty plant, lasting in drought conditions by drawing water from the water table. Its taproot system can descend to an estimated 190 ft. underground.

The mesquite has one major drawback to its system. It doesn't have the ability to germinate or spread unless eaten. The coyotes play an important role in this activity since the mesquite is a large component of its diet. After digestion the plants seeds are released again into the soil often in new locations.

Mesquite has played an important role in the human diet. Ground mesquite beans are used in bread and the nectar in honey. Medicinal uses include eye drops and bronchial medications.

#### Site 6: Desert Willow

The Spanish called the desert willow *mimbre* because of its willow-like appearance. The desert willow is a type of bignonia and is a native plant found in washes and riparian



*Barrel cactus.* © Lindsey Gottwig, except where noted.

areas where soils are well drained. It produces a trumpet shaped flower that blooms from the spring into the fall.

#### Site 7: Bench at Cottonwood

The cottonwood tree thrives in low lying areas along the river. Beginning in the late-1800's, cottonwood forests were cleared as fuel for steamships traveling on the lower Colorado River. The seeds of the cottonwood are borne on cottony structures, which allow them to travel great distances before settling to the ground. Among other uses, the cottonwood is a favorite amongst artisans as its wood is soft and easy to carve.

Cibola's innovative restoration projects are designed to replace lost habitat. One of these projects can be seen at the Nature Trail. Cottonwoods, willows, and mesquites were planted to provide habitat for a variety of animals such as the threatened yellow-billed cuckoo, endangered Southwest willow flycatcher, and the rare Colorado River cotton rat. Hummingbirds, mule deer, bobcat, and coyotes are also seen here.



*Sandhill cranes.* Eszter Munes / USFWS