DESERT PLANTS

VEGETATION. Many biologists divide the Mojave Desert into north, south and west portions. With this classification, Fort Irwin is located in the western region of the Mojave Desert.

Botanically, the Mojave Desert represents a transition between two much larger deserts, the Great Basin to the north and the Sonoran to the southeast. The Mojave is botanically impoverished, particularly the central region. Brown et al. (1979) recognized seven vegetation series the Mojave Desert scrub. Four of these series are present at Fort Irwin: Creosote Bush, Saltbush, Mesquite, Blackbush; and a fifth, Joshua Tree, can be found near the Fort's southwestern and northwestern boundaries. The two Mojave Desert vegetation series not represented at Fort Irwin are the bladder sage and catclaw acacia series.

Creosote Bush Scrub Series

Creosote bush (Larrea tridentata and burroweed (Ambrosia dumosa, also called burrowbush or white bursage) form the most characteristic association of the Mojave Desert, dominating the vegetation in 70 percent of this desert (Shreve 1942). With few exceptions, the creosote bush scrub series dominates at Fort Irwin. Commonly, over 90 percent of woody vegetation cover is creosote bush, or the combination of creosote bush and burroweed. Burroweed is a much smaller shrub that may often be numerically more abundant than creosote bush, but projected foliar cover and volume is generally dominated by creosote bush. Occasionally in localized sites, creosote bush may represent the only woody species. Creosote bush is conspicuously absent around playas (dry lakebeds), because of high salinity (Wallace and Romney 1972), and/or dense fine-textured basin soils are low in oxygen (Lunt et al. 1973). Beatley (1975) has proposed that the dense cold air draining into lower basins may be an important feature limiting Creosote bush on playas. Creosote bush and burroweed size and rigor are strongly influenced by water availability, and the largest individuals are characteristically found along the edges of washes and roads.

Saltbush Scrub Series

The three dominant species in Mojave Desert Saltscrub (Atriplex sp.) are xerophytic and not particularly salt tolerant: allscale (A. polycarpa), shadscale (A. confertifolia), and desert holly (A. hymenelytra) listed in their relative order of abundance.

All three species are abundant at Fort Irwin in suitable habitat. Good examples of saltbush scrub can be found at playas on Fort Irwin. There is a broad expanse of shadscale at the north end of Goldstone Lake. Other shrubs associated with shadscale at this locality are spiny sagebrush (bud sage) (Artemisia spinescens), and allscale. Allscale becomes more abundant at the southern end of this playa, with four-winged saltbush (A. Canescens) appearing in several places. The Nelson Lake saltbush scrub is almost pure allscale, while at Drinkwater Lake the dominant Atriplex is a fourwinged saltbush. Russian thistle, (Salsola iberica) commonly called Tumbleweed, can often be found in saltbush scrub, especially in sandy areas. A large tall and dense stand of this species can be found in the southwest portion of Langford Lake. The Bitter Springs area has a well-developed saltbush community with quail bush (Atriplex lentiformis), desert holly, allscale, and four-winged saltbush.

Mesquite Series

Mesquite is associated with springs at Fort Irwin. The largest stand of mesquite occurs at Bitter Springs. This species is honey mesquite (Prosopis glandulosa). Screwbean mesquite (P. pubescens), a species less tolerant of salt, occurs at Paradise Springs, just outside the parameter of the base, along with honey mesquite. Both species of mesquite are found at Garlic Springs. The distribution of mesquite is dependent on available ground water. However, ground water does not have to be near the surface, since exceedingly deep taproots characterize mesquite. Mesquite along washes generally located on the higher secondary terrace. At Bitter Springs, mesquite is located on higher ground along the flow of the spring, and in the large wash below the spring where surface flow is ephemeral. The mesquite at Bitter Springs is very heavily parasitized by mistletoe (Phoradendron californicum). One of the most abundant and persistent shrubs at desert springs is salt cedar (Tamarix ramosissima). There is controversy concerning the taxonomy and nomenclature of Southwestern Tamarix. This Asian introduction is widespread in the California deserts, and is increasing its dominance at Bitter Springs.

Blackbrush Series

Creosote bush is replaced by blackbrush (blackbush)(Coleogyne ramosissima) above elevations of 4920 feet, and as the northern Mojave Desert blends into the Great Basin Desert. The blackbrush series is limited to the northern part of Fort Irwin in the Granite and Avawatz Mountains, Scattered junipers (Junipers California) are only found in the Avawatz Mountains, restricted to elevations over 4920 feet. Fort Irwin does not contain elevations high enough to support the pinion pine-juniper community.

Joshua Tree Series

Joshua tree woodland borders Fort Irwin to the southwest and to the northwest, but does not occur as a dense series on the Fort. Interestingly, the Joshua tree (Yucca brevifolia) encompasses the entire periphery of the Mojave Desert, with the exception of the southeastern corner. Joshua trees are good indicators of the presence of water. At Fort Irwin, Joshua trees occur as scattered individuals at higher elevations, primarily in the Granite and Azawitz Mountains. The Mojave yucca is even scarcer.

Cacti

Cacti can be a real problem in the desert. The cholla cactus is the prime culprit. There are a number of species of cholla in the desert, which have very strong, sharp spines. The stems from these cacti often litter the ground and are often hard to avoid. The stems can penetrate all but the stoutest of shoe soles and can even pass through the leather hides of boots. If you brush against a cholla cactus, the stems will detach and imbed in your skin. This is a very painful experience. If a cholla stem becomes deeply imbedded in the skin, a physician will probably have to remove it. If the stem is not deeply imbedded, slipping a pocket comb between the stem and the skin and flipping it away from body can usually remove it. You must be careful; however, not to flip the stem onto someone else or onto another part of you're body. Pliers and tweezers are handy for removing individual spines and patches of tiny spines of cacti known as glochids. These glochids are found on prickly pear cacti pads and on cholla stems. To find all these little spines a magnifying glass may be necessary.

Two species of plant found on Fort Irwin are currently being investigated to determine if they should be listed as threatened and/or endangered. These species are Lane mountain milk vetch (Astragalus jaegerianus), and Mojave Indigo Bush (Psorothamnus arborescens var. arboresscens).

Jimsonweed (Datura stramonium)

What Is Jimsonweed

Jimsonweed is a member of the potato or nightshade family of plants, which includes plants such as Belladonna and Mandrake. Other common names for Jimsonweed include thornapple, locoweed, Jamestown weed, Angel's Trumpet, and Devil's Trumpet.
Jimsonweed is a native of India, it was imported to Europe and then to temperate parts of North America. The name Jimsonweed is a corruption of Jamestown weed, after the town in Virginia to which it is first believed to have been imported to the USA from England.

Some species are annuals, others, especially the cultivated species, are deciduous shrubs. No matter; all have big, irregularly toothed leaves and funnel-shaped, purplish or white flowers, which form prickly fruit.
The cultivated species of Genus Datura, known as Angel's Trumpet, look slightly different, but are just as poisonous.

The plant is an annual, growing up to a height of 5 feet. Upon maturity, the plant releases tiny black seeds from spiny capsules. The flowers are trumpet shaped and either white or purple. While all parts of the plant are toxic, the seeds, fruit, and leaves contain the highest level of alkaloids.
The primary psychoactive substances in Jimsonweed are the alkaloids atropine and scopolamine (also found in Belladonna). Atropine has been used in treating Parkinson's disease, peptic ulcers, diarrhea, and bronchial asthma.
It is also used to treat nerve gas poisoning. Scopolamine is available by prescription primarily for treating motion sickness.
Scopolamine has also been used as an adulterant with heroin. During a 24-hour period in December 1995, at least 60 heroin users in Newark, New Jersey, died after using heroin tainted with scopolamine.

Jimsonweed is commonly consumed in herbal tea concoctions. The seeds, leaves, and flower nectar can also be eaten or smoked. The high experienced by users often includes delirium, delusions, hallucinations, disorientation, and incoherent speech. Often users do not recall the experience.
In ancient herbal medicine, Jimsonweed was used internally to treat madness, epilepsy, and melancholy. Externally, it formed the basis of ointments for burns and rheumatism.
More recently, preparations from the plant have been used as ingredients in some asthma medicines. With this exception, however, plant is generally considered too toxic for medical applications nowadays.
Some scholars believe that vapors obtained by boiling this plant may have been used by the Delphic oracles to induce their legendary visions. More recently, in 1968, the use of Jimsonweed as a hallucinogenic drug prompted the US government to ban over-the-counter sales of products prepared from it.

Jimsonweed alkaloids are related to those found in magic mushrooms. Unlike magic mushrooms which will not cause death, even if very large quantities are consumed (a person will vomit if they take too many magic mushrooms for their body to handle), ingestion of Jimsonweed can lead to seizures, coma, and death, even if taken in large quantities.
NOTE: Since 1965 there has been only one report in the medical literature of a death associated with use of magic mushrooms. An 18 year old used magic mushrooms, which caused an erratic heart rhythm and led to the patients' death. The death was due to a pre-existing condition that was triggered by magic mushroom consumption, rather than due to an overdose.
Symptoms of Jimsonweed consumption can include intense thirst, headaches, nausea, fever, high blood pressure, dry mucous membranes, difficulty swallowing and speaking, blurred vision, photophobia, hyperthermia, confusion, agitation, combative behavior, and hallucinations.
These effects can occur within 30 to 60 minutes after ingestion. Symptoms can continue for 24 to 48 hours because the alkaloids present in Jimsonweed retard the digestive process.

Even prolonged breathing of the fragrance from Jimsonweed flowers can produce mild symptoms, and less than 5 grams of leaves or seeds eaten by a child will be fatal.
There is no antidote for Jimsonweed poisoning. Treatment normally includes pumping the patient's stomach and administering activated charcoal to absorb the contaminants.
The drug physostigmine, a mild nerve agent, is used in severe cases. Jimsonweed is bad plant to trip on. The dose and OD level are too close for comfort.
Jimsonweed is a member of the potato or nightshade family, and like most other members of the family it can be toxic. Even the potato found in most kitchens can be poisonous if it's green and sunburned, and the berries of the potato are always dangerous.