

Featured Plant

Common Name: Juniper



Tom DeGomez

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Juniper trees (often mistakenly called “cedars”) are members of the cypress family (*Cupressaceae*). Juniper berries are actually modified cones which technically makes juniper a conifer tree (like pine and spruce trees). Several species of juniper trees grow in the western U.S., including: *Juniperus monosperma* (one-seeded juniper), *J. osteosperma* (Utah juniper), *J. depeana* (alligator juniper), *J. communis* (common juniper), and *J. scopulorum* (Rocky Mountain juniper). Juniper trees commonly grow in association with pinyon pine (*Pinus edulis* and *P. monophyletic*) at elevations as low as 3000 feet and as high as 10,000 feet. When you hear land managers talk about the “P-J” zone, they are likely referring to a pinyon-juniper plant community.

Juniper woodlands currently occupy 77,000-116,000 square miles throughout the western U.S. and have increased about fivefold in the last 150 years. Reasons given for juniper expansion (or invasion) include a complex combination of environmental factors and management practices. Juniper expansion is a double-edged sword. On the one hand, pinyon-juniper woodlands provide good habitat for mule deer, bighorn sheep, bison, wild horses, pronghorns, coyotes, bobcats, badgers, porcupines, rabbits, mice, voles, woodrats, squirrels, and numerous birds. On the other hand, excessive

juniper encroachment creates erosion and fire hazards, negatively affects habitat for some wildlife species, reduces livestock forage, and adversely affects soils, and water quality. For example, when juniper monocultures displace plants with fibrous root systems, soil erosion accelerates across watersheds which can increase sedimentation in streams.

Native American tribes traditionally used various parts of juniper trees to make sandals, garments, blankets, prayer sticks, saddles, stirrers, fence posts, gum, flour, bedding, and jewelry, as well as for food, firewood, housing, and medicinal and ceremonial purposes. Raw juniper berries are mostly unpalatable to humans, but they are the primary ingredient in gin that gives this adult beverage its pungent flavor. The berries are an important food source for various species of birds and mammals which facilitate the dispersal and germination of juniper seeds. Sheep, goats, and especially cattle are reluctant to use juniper trees for forage when palatable alternatives are available, because juniper contains terpenes, a chemical compound that greatly reduces its palatability. However, during severe winters and droughts, or in situations where there are few other forage options, livestock will utilize juniper.

Featured Bird

Common Name: Rufous Hummingbird

Scientific Name: *Selasphorus rufus*



Dan L. Fischer

Dan L. Fischer, Author of *Early Southwest Ornithologists, 1528-1900*, University of Arizona Press

Hummingbirds, because of their attractiveness and uniqueness, deserve a special introduction that was penned over six score years ago by Robert Ridgway (1850-1929), one of America’s most eminent ornithologists. “Of all the numerous groups into which the birds are divided there is none other so numerous in species, so varied in form, so iridescent in plumage, and so different from all others in their mode of life.”

Named because of their distinctive “humming” flight, hummingbirds generate approximately 80 blurred wingbeats per second in forward motion. Unlike most other birds, they lack the ability of the wrist and forearm joints to flex, but do have the capability to generate power on the upstroke and downstroke. In addition, they have rotary wing motions enabling them to have prolonged hovering and unique rapid backward flights. With an exceedingly fast heartbeat that reaches 1260 beats per minute, they also have a very high normal body temperature of 104° F. In regions where temperatures lower significantly at night, some regularly become torpid (temporary loss of sensation or motion) by dropping their body temperature as much as 34° F to lower their metabolic requirements thus conserving energy.

The Rufous Hummingbird, weighing only 3.3 grams, is among the over three hundred species confined to the western hemisphere and is perhaps the most beautiful among the fifteen or so hummingbird species occurring in Arizona. The male bird may be easily recognized by the amount of cinnamon-rufous on the upper parts of the body and brilliant iridescent orange-red throat feathers or gorget that changes to golden green with respect to the viewers position relative to the bird and light.

Among the many contributions to Arizona ornithology by Dr. Allan R. Phillips (1915-1996), professor at the University of Arizona, was the understanding of the migratory routes of this amazing avian creature. Observing this bird in Arizona is seasonal and widespread with the greatest concentrations occurring in the extreme eastern mountains, foothills and valleys. It is here in the fall that they are easily observed as they are on their passage south into Mexico from their breeding areas in the northwestern coastal and mountain ranges that extend into Alaska (61° parallel). During late July through early September large concentrations of these birds are often observed in Arizona wherever flowers, especially those that are red, are available. They are quick to defend these feeding territories and they can be very pugnacious in their aerial attacks on any and all competition. Contrary to expectations, their northward spring migration route from Mexico is not retraced, but swings to the west coastal slopes thus avoiding almost all of Arizona.

The initial discovery of this most northern breeding hummingbird was on the third expedition of Captain James Cook (1728-1779) while he was attempting to locate the Northwest Passage in June of 1778. Sailing up the northern west coast, they landed in the almost impenetrable and dense forests on the west side of Vancouver Island, where among several other discoveries, the Rufous Hummingbird was secured. Dr. William Anderson (1750-1778), chief surgeon and naturalist on the voyage, although suffering terribly from consumption, was no doubt responsible for this discovery. His death occurred three months later at sea off the northwest coast of Alaska.