

Featured Plant

Common Name: Mesquite

Scientific Name: *Prosopis* spp.



Ashley Sheperd

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Mesquite is a nitrogen-fixing tree or shrub of the genus *Prosopis* (bean or legume family, Fabaceae). In the United States there are three main species: velvet mesquite (*P. velutina*, in Arizona), honey mesquite (*P. glandulosa* var. *glandulosa*, in New Mexico and Texas) and western honey mesquite (*P. glandulosa* var. *torreyana*, in California). Mesquite also occurs in South America, Africa, the Middle East, India and Australia.

On sandy or shallow soils, mesquite is a low-growing, multi-stemmed shrub. On deeper, loamier soils it can be a large shrub. In riparian zones, arroyos or where there is permanent water within 15 feet of the soil surface, or where annual rainfall is >20 inches, mesquites may be tree-like in size and architecture. One mesquite in Real County, Texas stands 52 feet tall with a trunk circumference of 152 inches.

Widespread across the Southwestern USA from central Texas to California and from Oklahoma into Mexico, mesquite has had a significant influence on human kind. Mesquite plants were important to Native Americans as a source of food, shelter, fuel, weapons, medicine, and farming tools. Early settlers trying to eek out an existence on challenging lands both praised and cursed mesquite. It gave shelter and shade. Its dense, sturdy wood is highly resistant to decay and insect attack, and thus valuable for fencing and construction. Mesquite pods, rich in nutrients and carbohydrates, were an invaluable source of food for livestock, especially in drought years. Early travelers across the Southwest referred to the mesquite bean as “manna from heaven” and used it as a coffee substitute and source of flour. But, its aggressive invasion of beloved grasslands in modern times made it a serious rangeland pest.

Why has mesquite been such an aggressive invader of grasslands? There appear to be many reasons. The pods are widely consumed by animals, including cattle, sheep and horses. Its seeds, like those of most leguminous (bean) plants, have a rock-hard coat. Thus, many of the seeds in pods consumed by large mammals escape mastication and pass through the digestive tract unharmed. They are then transported away from adult plants that may harbor insects that feed on mesquite seeds (for example, bruchid beetles). For germination to occur, the seed coat must be scratched or cracked so water can enter. This is often facilitated by passage through animals. Seed ingested by livestock are deposited in a moist, nutrient rich medium (dung) in areas where grasses have been grazed and fine fuel loads needed to carry fire have been reduced. Mesquite seedlings develop a taproot that can extend below the rooting zone of grasses within a month or two. This gives them access to deeper stores of soil moisture and makes them relatively immune from competition. Their roots can also harbor nitrogen-fixing microorganisms, potentially a great advantage. Furthermore, mesquite seedlings have the capacity to regenerate from dormant buds at a very early age. Even when a young plant is top-killed by drought, fire or a rabbit, it persists and quickly sprouts back. Finally, mesquite leaves are not particularly palatable so plants experience little browsing pressure. The mesquite plant has a lot going for it.

With the introduction of livestock into North America and the virtual elimination of fire from grasslands, mesquite has had many more opportunities for dispersal and establishment than prior to Anglo-European settlement. It has clearly taken advantage of them!

Featured Bird

Common Name: Say's Phoebe

Scientific Name: *Sayornis saya*



Dan L. Fischer

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

Of the several flycatchers that occur in Arizona, few reside here throughout the year. The exception is the Say's Phoebe, a small handsome brownish bird with contrasting shades of gray on its back, a pale rusty belly and black tail. While perched, it frequently flicks and spreads its tail. Found only in the west, it ranges in summer from Mexico north as far as central Alaska. It is a bird generally occurring in open country of grasslands, badlands, and barren foothills up to 6500 feet, and occasionally higher, where it forages on flying insects from perches of generally low vegetation. Not being restricted to riparian areas, it is widely distributed throughout the state.

Before the developments of human expansion into the west Say's Phoebes confined their nesting sites to natural rock ledges, caves and potholes. Being readily adaptable, they quickly began using a variety of manmade structures of old buildings where they construct their small nests in covered situations under suitable eaves, rafters, ledges and, on occasion, old mailboxes. Even old mine shafts and adits are sometimes utilized. The birds generally pair in February and the first of 4-5 white eggs are usually laid in early March. Following incubation of 12 days or more, the young fledge shortly after two weeks. When conditions are favorable the female may start a second nest by laying another clutch nearby before the young of the first have fledged, leaving the feeding duties to the male. It is not unusual for a pair to triple-brood within a single nesting season. Appearing rather inconspicuous,

these birds are very territorial and never appear numerous to the casual observer.

It was in 1819-1820 on the first military expedition west that included a naturalist when this bird was originally discovered. Major Stephen H. Long (1784-1864), a topographic engineer, included in his company for the trip Thomas Say (1787-1843), one of the founders of the Academy of Natural Sciences in Philadelphia, and his young assistant, artist-naturalist Titian R. Peale (1799-1885). The expedition into the southern Rocky Mountains, however, was nearly a disaster for Say as he suffered from ill health, was robbed of his possessions and field notes, not only by Pawnee, but again by deserting soldiers. Despite these obstacles, the expedition was considered rich in bird discoveries for Say described nine new birds species, which incidently, occur in Arizona.

Returning to Philadelphia, Say became acquainted with the nephew of Napoleon, Prince Charles Lucien Jules Laurent Bonaparte (1803-1857), who was a visiting ornithologist to America in 1823. While inspecting the birds from the expedition Bonaparte discovered two additional birds, one a brownish flycatcher collected by Peale, which he named in honor of his new friend Say, “a naturalist, of whom America may justly be proud....” Originally named *Muscicapa saya*, Bonaparte, a quarter of a century later, changed the generic name to *Sayornis* which is also shared with the Black and Eastern Phoebes.