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Ashe Juniper



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Much of the text and information for this piece was taken by Alamo Area Master Naturalist Stan Drezek from the essay *Mountain Cedar: Friend or Foe?* by former City of San Antonio Park Educator Peggy Spring and Jan Wrede's *Texans Love Their Land*, 1997.

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Ashe Juniper – Elm Creek Neighborhood Greenbelt
Photo by: Stan Drezek

The Ashe Juniper (*Juniperus ashei*) is the dominant native tree species of the Texas Hill Country. One of six *Juniperus* species from the Cypress family (*Cupressaceae*) in Texas, but the only one in the Texas Hill Country, Ashe Juniper has existed here for tens of thousands of years. Bill Ward cited in a Native Plant Society of Texas publication of July 10, 2010 the work of Robert Adams of Baylor University concluding “*J. ashei*” grew mixed with deciduous trees in Central Texas during the late Pleistocene (about 125,000 to 13,000 years ago).” We may not know the exact distribution of Ashe Juniper preceding European settlement of the Hill Country, but early observers reported dense, closed-canopy “cedar brakes” particularly on canyon slopes. Ferdinand Lindheimer in 1845 reported cedar forming wide forested strips along the Comal River. Ashe Juniper does well in our alkaline soils and tolerates our climate. Furthermore, it is an efficient water user given its tiny leaves and their waxy coating which limit water loss through transpiration. Its recent relative dominance can be explained by human control of grassland fires (fire effectively kills Ashe Juniper which will not re-sprout) and overgrazing of native grasses, thereby reducing fuel for fires.

OVERGRAZING & FIRE SUPPRESSION = ASHE JUNIPER DOMINANCE

The result is woody encroachment of mostly naturally occurring savanna, especially by Ashe Juniper. **Have you seen its dominance in the areas along the Oak Loop Trail in Phil Hardberger Park (West) or our other Natural Areas?** Another particularly beautiful example of this dominance can be found along Friedrich Wilderness Park’s Juniper Barrens Trail. As Cox and Leslie state in *Texas Trees, a Friendly Guide*, “It has an invasive nature and can form impenetrable thickets inhibiting the growth of grasses and other herbaceous plants ...”. **Have you noticed under thick canopies of Ashe Juniper how hardly any species survive in the shade?**

CHARACTERISTICS



Ashe Juniper leaf and bark – Phil Hardberger Park Photo By: Gary Rogers

The tree is easily recognized by its irregular shape, fluted, twisted trunk, and dark green foliage. It rarely grows beyond thirty feet. Its bark is gray or reddish-brown often with white patches. These are the fungus, *Robergea albicedrae*, found only on *Juniperus ashei*. Another identifying characteristic of the bark, especially on mature trees, is its shredding into long narrow strips. **Have you noticed some of this “old growth” Ashe Juniper along our Natural Area trails?** Its bluish-green “leaves” flattened into many little branches at the end of twigs are comprised of overlapping 1/8” scale-like leaves. Each scale-like leaf has a hemispheric bump, a resin gland, which gives the tree its characteristic aroma. Those resins make the wood of the Ashe Juniper especially resistant to decay and insects.

There are separate male and female trees. From December to February the male trees turn golden brown with copious quantities of pollen, causing many locals to suffer from “cedar fever.” In the fall, the female trees produce the familiar, blue juniper “berries”, which are actually miniature cones. **Have you seen female Ashe Junipers, whose “fruits” are eaten by many species of wildlife?**

REMOVE IT VS. LEAVE IT!

There is a debate, informed by ongoing studies, as to whether Ashe Juniper’s positive contribution to soil stabilization and soil production, as well as providing shelter for wildlife and a cafeteria for birds, outweighs its

role in preventing rainwater from reaching the ground. David Bamberger (see the April 25, 2010 Bamberger Ranch Journal) certainly makes the case for selective removal of Ashe Juniper.

Bamberger found that it was not the trees' use of water, but rather, its tendency to form dense thickets. The trees actually prevent rainwater from reaching the ground and, thus, percolating back into the groundwater supply. He reports that about 54% of the water from a rain event reaches the soil under a canopy of Live Oaks but only about 20% under Ashe Juniper. In contrast grasslands allow more than 80% of the rain to infiltrate the soil.

Owens & Lyons in "Evaporation and interception water loss from juniper communities on the Edwards Aquifer Recharge Area" while finding much higher percentages for Ashe Juniper noted the significant loss due to evaporation from the canopy of Ashe Juniper in the low intensity rains that characterize the Hill Country.

Bradford Wilcox's 2010 paper in Geophysical Research Letters found evidence from 1890 to 1960 that "overgrazing and resultant soil degradation, *not encroachment by woody plants*, were the main culprits behind reductions in stream flows and recharging of groundwater..." It is probably safe to conclude that dense thickets of junipers and the removal of grasses and plants due to overgrazing and the resulting water runoff are both serious contributors to the lowering of the water table.

“OLD GROWTH” JUNIPERS & GOLDEN-CHEEKED WARBLERS

There is no debate, however, as to the importance of the Ashe Juniper to the endangered Golden-cheeked Warbler (*Setophaga chrysoparia*). In March these birds return to Texas by flying over 1100 miles from wintering grounds in Guatemala and other Central American countries. It is the only bird species whose breeding grounds are confined to Texas, most notably the Texas Hill Country. All Golden-cheeked Warblers mate, reproduce and raise their babies in Texas. They weave their nests from the long, shaggy strips of "old growth" juniper and spider webs. They feed themselves and their young on the insects and arthropods living on Ashe Juniper, Red Oaks, Live Oaks, and Cedar Elms. Despite the lack of steep-sided canyons and its small area in the middle of an urban expanse, City of San Antonio Park Naturalist Wendy Leonard observed and followed a Golden-cheeked Warbler in Phil Hardberger Park (East) on March 11, 2012. **Do you realize that if we had no "old growth" juniper, the Golden-cheeked Warbler would cease to exist?**

ADDITIONAL POSITIVE CONTRIBUTIONS OF ASHE JUNIPER

Besides playing a vital role in the life cycle of the Golden-cheeked Warbler, Ashe Juniper also:

1. Creates abundant litter facilitating soil formation
2. Helps stabilize the soil particularly on steep hillsides
3. Its dense cover makes a good home for wildlife
4. Provides "berries" to birds such as the Scrub Jay and mammals as well as forage for goats, sheep, and deer
5. Is a host plant for the Olive Hairstreak butterfly
6. Source of wood resistant to decay especially for posts
7. Excellent natural windbreak and sound barrier

Like so many native species, Ashe Juniper, is a tremendous resource to our ecosystem. Because of the impact of land development in reducing "old growth" juniper in particular, governmental agencies are working on Habitat Conservation Plans to protect this precious resource. Here for tens of thousands of years and here today, this tree contributes so much to the beauty and ecology of our beloved Texas Hill County.



Ashe Juniper Berries (Female Tree) – Phil Hardberger Park Photo By: Gary Rogers



Ashe Juniper Pollen – Photo by: Stan Drezek

For more information for children see, [We Love Leaves](#), [Tree Houses](#) and [Ashe Juniper](#).

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