



## ARIZONA CYPRESS (*CUPRESSUS ARIZONICA*) BIOECOLOGY, DECORATIVENESS AND BREEDING TECHNOLOGY

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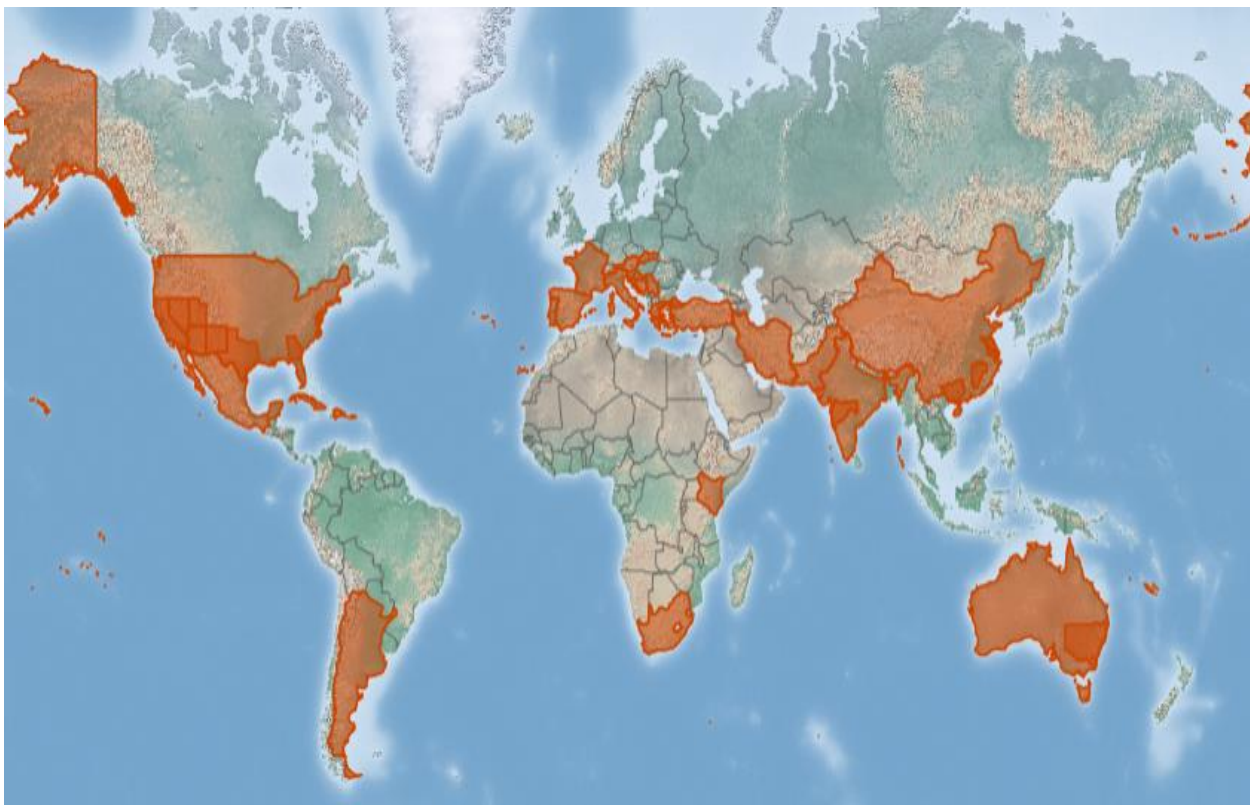
*Cupressus Arizona*, Arizona,  
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### ABSTRACT

*In this research work, information on bioecology, decorativeness and reproduction technology of Arizona cypress (*Cupressus arizonica*) is given and researched.*

*Cupressus Arizona* is an evergreen coniferous tree adapted to dry environments that reproduces by seed. *Cupressus arizonica* is reported as invasive in Haleakala National Park, Hawaii. A risk assessment carried out for Hawaii gave it a high risk score of 15. Occasionally naturalizes in New South Wales, Australia. Naturalized in one location in India. Escaped from cultivation

in Sierras Chicas, Córdoba, Argentina and in southern Europe. There is little information available on this species' impacts, but it can grow in dense stands and its pollen causes allergies. An unpretentious tree up to 21 meters high, tolerates frosts down to -20 ... -25 ° C. It has a heavier and more durable wood compared to other types of cypress.



Propagated both vegetatively by cuttings and seeds. When propagated by seeds, if you use good agricultural technology, you can get plants 30-40 cm high with a well-developed root system in one growing season. In Mediterranean conditions, it is capable of growing up to 2 m by the age of three.

The plant is decorative both in winter and summer. Often used where evergreen cypress does not grow. Arizona cypress is winter-hardy and frost-resistant, but young plants in the first two or three years of life must be covered for the winter in order to avoid partial freezing or complete death.

*Cupressus arizonica* is sometimes listed as *Hesperocyparis arizonica*: a 2013 revision to the Fire Effects Information

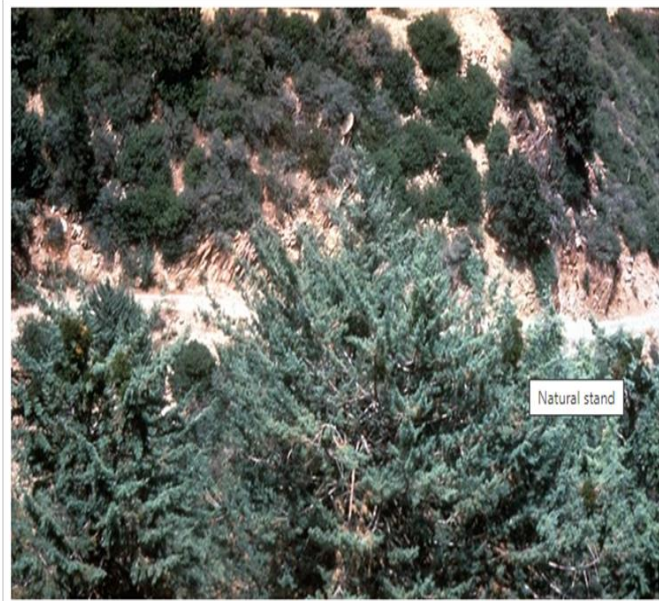
System (FEIS) of the US Forest Service changed the name to *Hesperocyparis*, although The Plant still has *Cupressus arizonica* as the accepted name. Some taxonomists list *Cupressus glabra* or *Hesperocyparis glabra* and the other varieties as separate species.

*Cupressus arizonica* var. *nevadensis* is endemic to southern California and is considered an endangered taxon. *Cupressus*

*arizonica* var. *montana* occurs on the Baja Peninsula and in Mexico. *Cupressus arizonica* var. *stephensonii* occurs from central California south into the Baja Peninsula. *Cupressus arizonica* var. *glabra* occurs from California to western Texas.

Well-defined qualitative and quantitative morphological characters, such as colour of foliage, size of tree parts and bark, would not by themselves justify the constitution of five separate species, as was suggested by and by but the amount of trait variability certainly seems large enough to classify these four taxa above as varieties of *Cupressus arizonica*, as indicated by and. The common name Arizona cypress reflects the native range in southwestern USA and northwest Mexico. *Cupressus arizonica* is a medium sized evergreen tree growing 5-25 m tall. It has a conical crown when young, becoming broadly columnar with age. The reddish-brown to gray bark peels in thin strips or plates becoming furrowed with age. *Cupressus arizonica* var. *glabra* has smooth bark. Scale-like needles are dusty green to gray green, sometimes silvery, and are arranged opposite in pairs tightly clasping cord-like or four sided twigs. Cones are reddish brown to gray, somewhat round with 6-8 shield-shaped woody scales, 10-25 mm wide. Seeds are light tan to dark brown, 4-8 mm long. *Cupressus arizonica* has been widely introduced as an ornamental plant in temperate and tropical, dry climates

Title	Natural stand
Caption	<i>C. arizonica</i> var. <i>arizonica</i> , Arizona, USA.
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around the world and has sometimes naturalized from plantings. Seeds were available as early as 1914 in seed catalogs and plants were offered for sale as early as 1907. Seeds were sent to Europe by the Arnold Arboretum in 1882. At least one tree was growing in a botanic garden in Naples, Italy by 1918 and had been introduced to the Crimea, Russia through an acclimatization society by 1911.



*Cupressus arizonica* has replaced *Cupressus sempervirens* in areas where low winter and spring temperatures do not permit *Cupressus sempervirens* cultivation, on account of its high tolerance to frost and drought, its good soil adaptability, and its rapid juvenile growth. *Cupressus arizonica* is

planted as a timber tree in Italy and other parts of southern Europe. It is planted in at least 96 botanical gardens around the world.

In its native range, *Cupressus arizonica* is found on “dry, sterile rocky mountain slopes and canyon walls”. Found in pinyon-juniper woodlands, ponderosa pine,



western hardwoods, and chaparral. It is a common but scattered component of

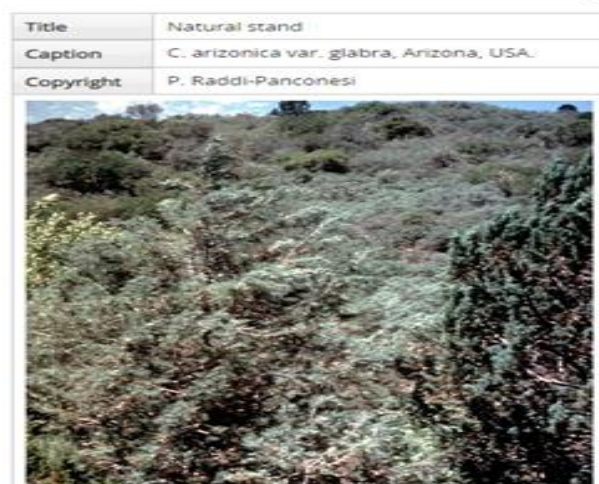
canyon riparian associations, but is also found in mixed stands at higher elevations.

## Genetics

There is genetic variation among the varieties of *Cupressus arizonica* and considerable variation within populations of *Cupressus arizonica*. The species has been sequenced by BOLD Systems.

## Reproductive Biology

Plants reproduce exclusively by seed. Each cone contains 48-112 seeds. Cones mature in autumn of the second season. Cones persist on the tree until they





are opened by fire or desiccation. Seeds remain viable in the closed cones but germinate once released and exposed to moisture. Seeds require bare soil to germinate. Plants are propagated by seed or grafting. Seeds require cold moist stratification for at least 1 month.

#### Physiology and Phenology

Cones emerge in spring and pollen is shed October to March. Trees can withstand cold to  $-17.7^{\circ}\text{C}$ .

#### Longevity

Trees may begin to reproduce by age 14 and can live to be over 500 years old.

#### Population Size and Structure

Can form solid stands that exclude understory species in its native range. Stands may often begin as even-aged pioneer stands, but become more mixed and open with age.

#### Associations

Seeds are eaten by rodents, including the Chiricahua fox squirrel, *Sciurus nayaritensis chiricahuae*. Plant communities in which *Cupressus arizonica* is commonly found are listed by.

#### Environmental Requirements

*Cupressus arizonica* has a wide range of tolerance for soil types from acidic to alkaline, but prefers well-drained soils. Plants usually grow in full sun, but saplings can tolerate shade. Requires a minimum of 250-300 mm of rain annually, but in its native range normally occurs where the

mean annual precipitation is around 400-600 mm and bimodally distributed. Will grow more quickly in better soils and with more rainfall. Hardy in zones 7-9. Grows at elevations of 1000-1500 m in the United States and to 2200 m in Mexico.

Juniper blight (*Diaporthe juniperivora* or *Kabatina juniperi*) can be a problem in cool, humid areas. Seeds are consumed by rodents. Cypress canker, *Seiridium cardinale*, can attack this species. Several insects feed on seeds and other plant parts.

There are 17-19 *Cupressus* species. *Cupressus arizonica* has monomorphic scale leaves covered with white resin, branchlets arranged 3-dimensionally instead of in one plane, a point (umbo) in the centre of the female cone scales, and thin rather than thick seeds.

In general, *Cupressus arizonica* has monomorphic scale leaves covered with white resin, branches arranged in 3 dimensions instead of one plane, points in the center of female cone scales, and thinner than thick seeds. The plant is decorative both in winter and summer. Often used in areas where evergreen cypress does not grow. Arizona cypresses are winter hardy and frost tolerant. Breeding this plant and preventing its extinction in nature is one of the urgent problems.

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