

# Paraná Pine, *Araucaria angustifolia*: An Ancient-Looking Conifer for Modern Landscapes<sup>1</sup>

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## Introduction

Paraná pine is a primitive-looking conifer valued for its unusual horizontal branching, interesting triangular-shaped needles, and neat, symmetrical form. The primitive appearance of this evergreen tree results from its resemblance to and relationship with an ancient group of *Araucaria*-related conifers that dominated forests more than 145 million years ago.

Not a true pine, this dark green tree has a narrow, pyramidal shape when young (Figure 1). Paraná pine is considered fast-growing; a tree planted at Gardens of the Big Bend in Quincy, Florida, reached a height of 30 feet and a width of 14 feet in eight years.

Paraná pine reaches a mature size of 60 to 115 feet after 50 to 90 years or more in forests of southern Brazil. As it approaches maturity, the lower branches gradually die and the tree develops a dramatic dome shaped crown that somewhat resembles a candelabra due to upward pointing branch tips. Paraná pine is considered a large, long-lived tree. Fully mature trees may be 140 to 250 years of age, have heights up to 160 feet, and have trunk diameters exceeding three feet (Figure 2).



Figure 1. Paraná pine has a narrow, pyramidal form when young.



Figure 2. Close-up of the rough bark of Paraná pine.

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## Description and Ecology

This evergreen conifer has distinctive sharp-pointed, tough, scale-like needles (Figure 3). The dark green needles are triangular in shape and about 1 to 2.5 inches long. Needles persist for up to 15 years and cover all plant parts on young trees. Needles are gradually shed from the trunk and major branches and tend to be tufted at outer ends of stiff, horizontally held branches. The stiff, sharp needles make the tree and branches difficult to handle, while also acting as a deterrent to deer feeding and other animal predation as well as to foot traffic.



Figure 3. The triangular shaped needles of Paraná pine are stiff and extremely sharp.

Paraná pine is usually dioecious, meaning male and female flowers are borne on separate plants. Pollen cones are oblong, up to seven inches long and about one inch wide at the time of pollen release. Wind carries pollen to female plants bearing seed cones. Young female trees begin to set seed between 12 and 15 years of age. After pollination, seed cones mature about 18 to 36 months later, usually in fall.

The large seed cones are brown, globe shaped, 7 to 10 inches in diameter, and are usually found in the upper canopy of trees. Each cone holds about 100 to 150 two-inch nut-like, narrowly winged seeds (Figure 4). Cones fall when mature and break apart, dispersing seeds that germinate soon thereafter. Seeds are eaten by mammals and birds, further dispersing seeds.



Figure 4. Seeds of Paraná pine are about two inches long.

## Native Habitat and Uses

This tree once covered vast areas of subtropical forests in southern Brazil and neighboring portions of Argentina and Paraguay. Native Americans gathered cones to harvest the seeds for food. European settlers recognized Paraná pine as an important timber tree and it was logged extensively through the 20<sup>th</sup> century. Paraná pine now is one of the rarest trees in Brazil and is considered critically endangered due to a declining population caused by habitat loss and exploitation. In recognition of the past importance of Paraná pine, this tree is the symbol for the Brazilian State of Paraná.

The seeds, locally called pinhões, are still a prized food in Brazil. The seeds are similar to large pine nuts and are eaten after roasting or cooking in salt water.

## Other Names and Related Species

Other common English names for Paraná pine are Brazilian pine and candelabra tree. Common Portuguese names for *Araucaria angustifolia* are pinheiro-do-Paraná, pinheiro, araucária, pinho, pinho Brasileiro, pinheiro Brasileiro, pinheiro são José, pinheiro macaco, pinheiro caiova, pinheiro das missões, curi, and curiúva. Common Spanish names are pino blanco and pino de Misiones.

Despite the common names, Paraná pine is not a pine (*Pinus* spp.) and instead is related to the Monkey-puzzle tree (*Araucaria araucana*, <http://edis.ifas.ufl.edu/st081>), Bunya-bunya tree (*Araucaria bidwillii*, <http://edis.ifas.ufl.edu/st082>), and the Norfolk Island pine (*Araucaria heterophylla*, <http://edis.ifas.ufl.edu/st083>), commonly encountered in south Florida.



Paraná pine is sometimes confused with China fir (*Cunninghamia lanceolata*, <http://edis.ifas.ufl.edu/st220>), another large conifer commonly encountered in old landscapes along the Gulf Coast and north Florida. China fir differs in having linear needles, bright green coloring, and a broader, irregular pyramidal form.

## Culture

Paraná pine prefers well-drained, slightly acidic soil in sun or light shade. It grows best in a mild, warm temperate climate typical of USDA Cold Hardiness Zones 7–9, and can tolerate occasional severe freezes. Paraná pine transplants well—a four-year-old tree at Gardens of the Big Bend (Quincy, FL) was moved by tree-spade and subsequent growth continued at the same rate as before moving. Pests and diseases have not been reported.

## Propagation

Paraná pine is typically propagated by seeds, which must be fresh because they are viable for only about six weeks. U.S.-grown trees are becoming large enough to produce cones, but supplies are limited and not available commercially. Thus freshly harvested seeds should be ordered from Brazil and planted soon after being received. Seeds germinate easily within three months of sowing (Figure 5). Propagation by cuttings has not been reported for Paraná pine, but other species of *Araucaria* may be propagated from terminal shoot cuttings.



Figure 5. Although perishable, fresh seeds will germinate within three months of sowing.

## Garden Uses

As a “living fossil,” Paraná pine is prized for its unusual appearance, horizontal branching, and dark green color. This evergreen conifer grows too large for most residential situations. Paraná pine is best used as an accent or

conversation piece in arboreta, botanic gardens, parks, campuses, golf courses, and other large-scale landscapes. *Araucaria angustifolia* (Paraná pine) has not yet been evaluated using the UF/IFAS Assessment of Non-Native Plants in Florida’s Natural Areas (<http://plants.ifas.ufl.edu/assessment/>). Without this assessment, the temporary conclusion is that *A. angustifolia* is not a problem species at this time and may be recommended.

## References

- Bittencourt, J. V. M. 2007. “*Araucaria angustifolia*—Its Geography and Ecology.” Geographical Paper No. 180. Reading, UK: Department of Geography/SHES, University of Reading.
- Cox, T. and J. M. Ruter. 2013. “Landscaping with Conifers and Ginkgo for the Southeast.” Gainesville, FL: University Press of Florida.
- Earle, C. J. *The Gymnosperm Database*. [http://www.conifers.org/ar/Araucaria\\_angustifolia.php](http://www.conifers.org/ar/Araucaria_angustifolia.php). Accessed 21 October 2014.
- Sebbenn, A. M., A. de A. S. Pontinha, E. G., and P. Y. Kageyama. 2002. “*Ex situ* conservation of *Araucaria angustifolia* (Bert.) O. Ktze. in Sao Paulo State, Brazil.” Forest Genetic Resources No. 30: 14-17. Rome: FAO. <http://www.fao.org/docrep/005/y4341e/Y4341E05.htm>. Accessed 22 October 2014.
- Thomas, P. 2013. “*Araucaria angustifolia*.” The IUCN Red List of Threatened Species. Version 2014.2. <http://www.iucnredlist.org/details/32975/0>. Accessed 21 October 2014.