

Araucaria araucana Monkey-puzzle tree



Araucaria araucana, Conguillio National Park, Chile. Photo: lautaroj CC BY 2.0 Wikimedia Commons and Flickr.

Distribution: Known to have existed 250 million years ago, the family spread over both Hemispheres but, with extinctions, about 70 million years ago it became a significant component of Gondwanan forests in the Southern Hemisphere. This species is a native of the foothills of the Andes and is found in central and southern Chile and western Argentina at elevations of 900 - 1000 m where there is seasonal snow. It is tolerant of salt so it sometimes occurs near the coast.

Description: (photos on page 2) This species is a tall evergreen conifer with a possible lifespan of 1,300 years. Its branches grow horizontally in groups emerging from single points on the trunk. The bark is very thick having adapted to fire in this volcanic region and is dark grey-brown with horizontal ridges. Its glossy, dark-green, rigid, leathery leaves have broad bases, are spirally arranged and densely cover the whole of each branch, where they remain for 10 - 15 years. The leaves are extremely sharp pointed and it has been suggested this was to deter herbivorous feeding dinosaurs.

As young trees, they are pyramidal in shape, but with maturity they lose their lower branches and their straight trunks can reach 40 m with a diameter of 2 m presenting an umbrella crown. The male and female flowers are usually found on separate trees. The male catkins often appear in clusters 6-10 cm long and can be seen after they have shed their pollen. The female cones are globular, maturing after 2-3 years to dark brown and measuring 8-15 cm long and 6-10 cm wide. The cones contain 120-200 seeds and when they are mature the cones fall to pieces. The seeds measure 2 cm long and 1 cm thick. Their dispersal had been a mystery until recently when scientists placed tiny trackers in hundreds of seeds to follow them and discovered that rodents were the main collectors between 3 pm and 9 pm to bury them in burrows.

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Right Middle: *Araucaria araucana*: Rigid broad-based leaves. Photo: Marco Almbauer, Wikipedia CC0 1.0 Public domain
Right Bottom: *Araucaria bidwillii*: Leaves with narrow base (for comparison). Photo: Tree-species Flickr CC BY 2.0

Top: *Araucaria araucana*: Left: Male pollen cones, Photo: C T Johansson CC BY-SA 3.0 Wikimedia commons. Right: Female cone, Photo: AnRo0002 CC0 1.0 Public domain, Wikimedia Commons
Left: *Araucaria araucana*: Top: Seed 30 - 50 mm long. Are these sprouting? Photo: Carlos Teixidor Cadenas, CC BY-SA 4.0, Wikimedia Commons. Bottom: Seed after roasting. Photo: Bsea CC BY-SA 3.0, Wikimedia Commons



Araucaria araucana forest, Parque Nacional Conguillio, Photo: Eduardo Schmeda CC BY 2.0 flickr

Food Source: The nutritious seeds (80% carbohydrate and 9% protein) have been a staple and important part of the diet and culture of the indigenous people of this cross border region. The maturity of the seeds regularly commences in autumn when other food sources are scarce. At this time, these people moved into the *Araucaria* forests and stayed for some weeks for the harvest. The seeds are eaten raw, roasted or ground and fermented into muday, a kind of beer. Families have exclusive and inherited rights to selected trees and the harvests are a time of feasting with religious and fertility ceremonies. When some of the seeds could not be eaten immediately, they were stored in pits made in wet mud near streams. Their importance to these people is emphasised by their placement together with riding equipment in the tombs of their dead. *A. araucana* is one of the three species of the genus with large seeds - the others are *A. angustifolia* of Southern Brazil and *A. bidwillii* in Queensland.

Name: The trees were introduced into England by Archibald Menzies, plant collector and surgeon on Captain George Vancouver's journey around the globe in 1795. The story goes how, at a dinner with the governor of Chile, Menzies was served some of these seeds and pocketed a few. These he germinated on board ship and had several healthy plants on return to England. One of these was a great attraction at Kew Gardens for the 100 years of its life.

After this conifer was discovered by botanists, Molina named it *Pinus araucana* in 1782. The species name *araucana* is derived from the name, Araucanians, given to the local indigenous people by outsiders. This group of trees were given a new genus name *Araucaria* by Jussieu and, in 1873, Koch named this species *Araucaria araucana*. Later the family came to be named Araucariaceae.

The origin of its common name "monkey puzzle tree" is British. A landowner with a garden in Cornwall was showing off his rare acquisition to friends when one remarked how "it would puzzle a monkey to climb" and the name remained. The tree became a craze and when the price dropped, for a time they were as common as television aerials on the landscape.

Conservation status: In 1913 the status of the tree was changed to Endangered by the IUCN (International Union for Conservation of Nature). This was due to the destruction of habitat for timber production, agriculture and grazing in spite of the species being declared a Protected Monument and the national tree of Chile.

The National Arboretum in Canberra has included a forest of *Araucaria araucana* trees among its 100 forests of rare, endangered and symbolic trees planted in 2013. Each forest covers about 2 hectares and *A. araucana* is in forest No.12. Other members of the genus represented are *A. angustifolia* (No. 23) and *A. bidwillii* (No. 71).

Araucaria araucana is a tree with Gondwanan heritage which gave its name not only to the genus but also the family of plants. It has outlasted the dinosaurs. Can it survive the plans of man?



Araucaria araucana
 Volcan Llaima,
 Conguillio National
 Park, Chile,
 Photo: William S.
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Araucaria araucana

Common Names: Monkey Puzzle Tree, Chile Pine

Conservation Status: Endangered

Family: Araucariaceae - 3 genera with 41 species: 21 Agathis, 19 Araucaria and 1 Wollemia.

References:

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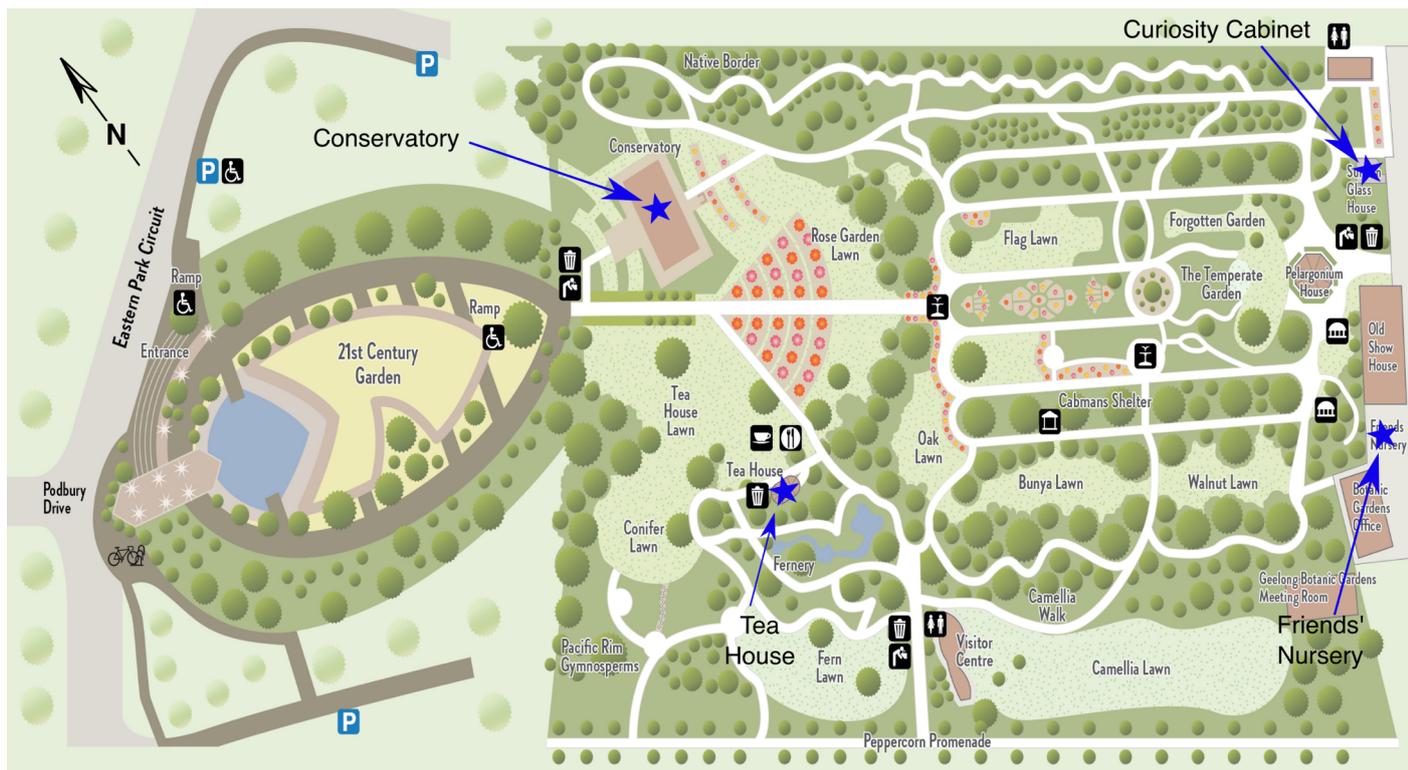
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