

Cycads for Central Florida

Cycads are an ancient group of plants often referred to as “living fossils”. They descended from and closely resemble plants that date back to the early Triassic Period in the Earth’s fossil record. Cycads first appeared approximately 250 million years ago and were one of the most numerous types of plants during the Cretaceous Period. Thus, they grew amongst the dinosaurs and were a food source to many of the herbivores.

Cycads belong to the order Cycadales. This order is divided into three families; Cycadaceae, Stangeriaceae, and Zamiaceae. These three families contain 11 genera of cycads and approximately 300 different species. Cycads are also classified as Gymnosperms. They resemble and are often called palms but have no relation to the palms. They are cone bearing and produce naked seeds. They are most closely related to conifers (pines, junipers, etc.) and Ginkgos. They are also related to ferns, which bear spores. Ferns are the evolutionary predecessors to cycads. Cycads are the most primitive of the Gymnosperms (and seed bearing plants) living today.

In the past cycads figured more predominately in the plant kingdom than they do today. In the past they had a much wider geographical range, which was probably due to the Earth having a warmer and wetter climate. Cycads today are limited to subtropical and tropical regions but cycad fossils have been found in Antarctica, Greenland, England, and Alaska. Many modern cycads have a small or limited distribution range. Also, a majority of today’s cycads are threatened or endangered because of habitat destruction and poaching. It is sad to

think that these plants have survived for millions of years only to be on the brink of being wiped out within decades.

When adding a cycad to the landscape, choose a species appropriate for the location. Some need sun while others prefer shade. Some can get quite large and others are low growing. Plant a cycad in the ground at the same level as it was in the pot. Most cycads prefer a well-drained soil and do not require anything to be added to the soil. Water it in well once it is planted. You can

fertilize a cycad 3 to 4 times a year. Use a good general garden fertilizer (like a 6-6-6 or 8-8-8) or a palm fertilizer.

Cycads do not have many problems in the landscape other than the rapidly spreading Asian Cycad Scale (see sidebar article). A common problem seen on King Sagoes (*Cycas revoluta*) is a manganese deficiency. This is evident when a new flush of leaves grows. The leaves appear to be distorted and often have a “burnt” or “scorched” appearance. This can be corrected by adding extra manganese



Lepidozamia peroffskyana

when fertilizing. Do not add it by itself; apply it along with the regular fertilizer so you do not throw the other nutrients out of balance. This will not green up the affected leaves but will help ensure the next flush contains healthy and lush leaves.

Cycads are sexed plants and individuals bear either male or female cones. In order to produce fertile seed, a plant of each sex is needed. In the wild, cycads are pollinated usually by wind or insects. In cultivation, most cycads need to be pollinated by hand.

Cycads make great landscape items for the Central Florida landscape. Below are some of the cycads that will grow well in Central Florida.

The genus *Bowenia* contains two species suitable for Central Florida. They are both native to rainforests in northeastern Australia. They are small cycads whose stems remain underground. They need shade and moist soil. They have bipinnate leaves with the leaflets occurring on the top portions of the wiry petioles and can be easily mistaken for large ferns. *Bowenia serrulata* has small, soft serrations along the edges of the leaflets while those of *Bowenia spectabilis* are smooth.

The genus *Ceratozamia* contains several species that are not commonly grown here but are well suited and should be planted more. They are native from Mexico into Central America. *Ceratozamia hildae* is often called the Bamboo-leaf Cycad. It has attractive upright leaves that are bright green in color. *Ceratozamia mexicana* has large, leathery leaves that are dark green. It is a stemless plant. *Ceratozamia robusta* is similar but grows on a trunk that can reach 4-6 feet high. *Ceratozamia kuesteriana* is a smaller plant growing 3-4 feet in height. The dark green leaves are a dark maroon color when they first appear. *Ceratozamia*s look best with at least afternoon shade.

The genus *Cycas* contains a couple of cycads that are common in Central Florida. *Cycas revolute*, the King Sago, is the most widely grown cycad in the world and the most common in Florida.

It is a slow growing plant from southern Japan. The Queen Sago, *Cycas rumphii*, is commonly seen in the warmer areas of Central Florida. It is from southeastern Asia and was incorrectly labeled as *Cycas*

Asian Cycad Scale

Asian Cycad Scale (*Aulacaspis yasumatsui*) is a serious pest that has begun seriously infecting King Sagos (*Cycas revolute*) and Queen Sagos (*Cycas rumphii*) in Central Florida. This pest is originally from Thailand and made its way into south Florida in 1996. It has since spread north and become a major nuisance in Central Florida in the last few years.



Asian Cycad Scale is very detrimental to cycads in the *Cycas* genus. Unfortunately these are some of the most common plants in local landscapes. It can completely infest a cycad within months and if not controlled, can kill the plant after just one year. Asian Cycad Scale reproduces very rapidly and can quickly blanket a cycad in a snowy white covering. Heavily infected leaves begin showing yellowish-brown spots eventually turning totally brown and dying. Before controls were discovered to control this pest, Asian Cycad Scale ran rampant in south Florida and thousands of old King and Queen Sagos disappeared from the landscapes. This scale is unusual as it feeds on all parts of the plant including cones and even roots. Freezing temperatures will kill the insect but many will survive underground and quickly spread back up the plant when the weather warms.

Control of the Asian Cycad Scale requires strict vigilance and perseverance. A multi-pronged solution includes using horticultural oil sprays on the above ground portions of the plant and a systemic (either in spray or granule form) insecticide. Systemics are an insecticide that does not kill the insect on contact. It is absorbed by the plant and is ingested by the insect when it feeds on the treated plant. Systemics are applied as a root drench. Systemics that are recommended include those with the active ingredients acephate, dimethoate, and disyston.

The best plan for control is to first wash the foliage and stem of the cycad using a high-pressure hose nozzle. This will help dislodge and knock off some of the insects. If the plant has a thick head of fronds, removing 1/2 - 3/4 of the lower foliage before spraying can help. If the plants are severely infected and the leaves are in poor shape, totally defoliate the plant. After the plant dries, spray using the horticultural oil. Spray the plant well including the trunk. You can spray using oil every other week but make sure to spray at least once a month for good control. Try not to spray oil during the midday as the plant can show burn damage. Use the systemics sparingly, once every 2-3 months but make sure a systemic is used for the best overall results. As always, follow directions on the label of the insecticide when mixing spray.



Asian Cycad Scale is spread very easily by the wind so landscapes that do not treat it can easily reinfest others. Natural predators of this scale (including parasitic beetles and wasps) have begun to be released in parts of Florida with good results but it will take some time before sizable populations of beneficials begin to control this scale.

circinalis for many years in cultivation. *Cycas taitungensis*, the Prince or Emperor Sago is beginning to be seen in some landscapes. It looks very similar to *Cycas revoluta* but is much faster growing. It is native to Taiwan and has been misidentified as *Cycas taiwaniana*. Unfortunately, all of the *Cycas* are very susceptible to the Asian Scale and it is not recommended to plant any in the landscape unless you are willing to keep up with the maintenance needed to control the pest.

Dioon contains several cycads well suited to Central Florida. *Dioon edule*, the Chestnut Cycad, is a great plant for our landscapes. It is slow growing and is slightly smaller in size than the King Sago. The trunk can eventually reach 3-5 feet tall. The fronds are a light green and stiff. This cycad likes full sun and is very drought tolerant. This is a good replacement for King Sagos in our landscapes. *Dioon spinulosum* is a larger growing species. It needs a partially shaded location and can grow 5 to 10 feet tall. Both are native to Mexico.

Encephalartos is a large genus of cycads native to the southern half of Africa. *Encephalartos ferox* is one of the most attractive. It has dark green fronds with sharply armed leaflets that resemble holly leaves. The female cones are often a bright scarlet color and contrast nicely with the dark green foliage. It can grow a small trunk 3-6 feet tall. *Encephalartos gratus* is a large cycad with leaves 4-6 feet long and a trunk that can grow 4-6 feet tall. Both of these prefer a partially shaded location. *Encephalartos horridus* and *trispinosus* are similar species. Both are spiny and silvery blue in color. They



Stangeria eriopus

only grow a few feet tall and need a hot, sunny location. They are also very drought and cold tolerant.

One of the best cycads for Central Florida is *Lepidozamia peroffskyana*. This underutilized cycad is native to north-eastern Australia and can reach 10-15 feet tall. It has very graceful leaves that are a glossy green and grow 5-10 feet long. These leaves are soft and unarmed, making it one of the more “friendly” cycads for the home landscape. It will grow in sun or shade but looks best with afternoon shade in Florida. This cycad produces the largest cones of all cycads species. Female cones can often weigh over 25 pounds.

Macrozamia contains over 30 species native to Australia. *Macrozamia communis* is a small cycad only growing 3-5 feet tall and has dark green, feathery leaves. It grows best with part shade. *Macrozamia moorei* is a large growing species with bluish-green leaves. It needs full sun, is very drought tolerant and is slow growing. It eventually can reach about 10 feet tall with a robust trunk.

Stangeria is from South Africa and only has one species, *eriopus*. It is an attractive, low growing, trunkless cycad

only growing 1-3 feet tall. The dark green leaves are fern-like. It needs a shady location in the garden.

The genus *Zamia* contains the only cycad native to Florida, *Zamia floridana* or *Coontie*. It has had a confusing taxonomic past and is been known as *Zamia integrifolia*, *Zamia pumila*, *Zamia silvicola*, and *Zamia umbrosa*. *Coontie* is a trunkless cycad only growing 1-2 feet tall but it has many forms. Some have narrow leaflets, very wide leaflets, curly leaflets or even spiraled leaflets. One form can grow 4-6 feet tall. *Coontie* will grow in sun or shade and is very drought tolerant. It makes an excellent groundcover. Another common *Zamia* is the Cardboard Cycad, *Zamia maritima*. It was formerly known as *Zamia fufuracea*. It is native to eastern Mexico and has thick leaflets that feel like cardboard. It will grow in sun or shade and is also very drought tolerant. Another species is *Zamia vazquezi*. This cycad is native to rainforests in southern Mexico and needs a shady location. It is small, only growing 1-2 feet tall. It very closely resembles a Holly Fern (*Cyrtomium falcatum*). It has been misidentified as *Zamia fischeri* in the past.

FOR MORE INFORMATION ON CYCADS

On the Internet:

The Cycad Society:
www.cycad.org

Palm and Cycad Societies of Florida:
www.plantapalm.com

Central Florida Palm and Cycad Society:
<http://www.plantapalm.com/centralfl/default.asp>

The Cycad Pages:
<http://plantnet.rbgsyd.gov.au/PlantNet/cycad/index.html>

Books:

Cycads of the World, by David L. Jones, 2002, New Holland Publishers Pty Ltd.

The Cycads, by Loran M. Whitelock, 2002, Timber Press, Inc.



Encephalartos ferox, closeup

Here at Leu Gardens, our cycad collection can be found next to the Palm Garden. We are currently growing over 70 species of cycads. Amongst the cycads are other primitive plants including horsetails, *Araucarias* (a primitive family of conifers), Ginkgo, Metasequoia, Magnolia, ferns and tree ferns that helps give the area a prehistoric feel.

Sources for some of the rarer cycads are limited. Several of the more common species can easily be found at local nurseries and garden centers. For some of the rarer and more unusual varieties, a good source are

plant sales held at botanic gardens such as the Leu Gardens Spring Plant Sale. Another source is through the Central

Florida Palm and Cycad Society. Plants are often sold at local meetings.

– Eric Schmidt



Dioon edule