

Long-held belief debunked: Cycad is not a 'Dinosaur Plant'

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Cycadophyta. Image: Wikipedia

(PhysOrg.com) -- The widely held belief today's cycads are 'dinosaur plants' and were around during dinosaur times has been categorically debunked in a breakthrough study of international significance.

Leader of the study, Dr Nathalie Nagalingum, Research Scientist at Sydney's Royal Botanic Garden said a [molecular clock](#) has revealed today's species are totally different from those growing in the [Jurassic period](#) which began 200 million years ago.

"We then looked at the extinction of [dinosaurs](#) 65.5 million years ago and found there was a gap of 55 million years between when dinosaurs were extinct and modern cycads started to diversify," Dr Nagalingum said.

"We can now say that living cycad species are not ancient or leftovers from dinosaur times. They evolved independently of dinosaurs only 10 million

years ago. The recent radiation of cycads radically changes our view of these emblematic living fossils."

Dr Nagalingum explained the finding was a result of her research at Harvard University and the University of California, Berkeley using a combination of fossils and [DNA sequences](#).

"We studied all 11 groups of cycads and two-thirds of the 300 species. The outcome showed that all cycads - regardless of where they were growing in the world - only began diversifying 10 million years ago," she said.

"It was amazing that all the cycad groups across the globe (in Australia, Africa, south-east Asia, and Central America) began to diversify at the same time. This indicated that a trigger may have been responsible. It seems that the trigger was a change in the climate, that is when global cooling began and when the world started having distinct seasons."

Dr Nagalingum said that, although cycads evolved recently, they are under threat from extinction.

"Today, cycads are listed as the most endangered plants and most likely victims of a mass extinction being caused by humans," she said.

"Cycads are very slow-growing plants so it's hard to predict whether [cycads](#) can survive, now that climate change is occurring at a much faster rate," Dr Nagalingum said.

The paper "Recent synchronous radiation of a living fossil" is available online in the journal *Science Express*.

Provided by Royal Botanic Garden, Sydney

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