

## Cycad Crisis : How well can botanic gardens protect plants?

Twenty years ago, a terrible insect pest arrived on Guam; *Cycas micronesica* went from being a common canopy tree to a rare plant. Our expert Michael Calonje collected the last remaining seeds in 2007.

As those seeds grew at Montgomery, new seeds those cycads produced were sent back to Guam – “closing the loop” on ex situ conservation. With fadang plants established at Montgomery and elsewhere, it may be that our garden plants now hold diversity that no longer exists in the wild.

To test this idea, I journeyed to Guam to collect DNA specimens from throughout the island. With local experts, we retraced Michael’s route from 17 years ago. Many sites Michael collected fadang from now hold much fewer plants. In some places the cycads are completely eliminated.

Three comparisons can illustrate the crisis, and how to improve our work: First, comparing the 2007 and 2023 specimens will show what has been lost in the wild; comparing our garden plants to the 2007 specimens can show if we captured that diversity; finally, comparing the garden plants to the 2023 specimens can show if we hold any diversity now extinct in the wild.

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**Background:** A giant fadang plant growing near the southeast coast of Guam in a protected limestone canyon.