

# **A new critically endangered tree species depends on unique habitat found only on Kaua'i**

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Among the most striking characters of *Melicope stonei* are the ramiflorous inflorescences, meaning that the flowers spring directly from the branches below the leaves. Credit: Kenneth R. Wood

A new tree species, *Melicope stonei* (Rutaceae or citrus family), endemic to the Hawaiian island of Kaua'i, is already assessed as Critically Endangered according to IUCN criteria. The newly described *Melicope* is apparently restricted to unique old growth forest featuring a combination of tree species that are only found on Kaua'i.

The volcanic island of Kaua`i is the oldest of the high Hawaiian Islands featuring deeply eroded drainages, well-defined canyons, and stunning tall coastal seacliffs. It is also the most floristically rich of the Hawaiian islands with *Melicope stonei* becoming the 249th endemic plant species known from only Kaua`i and nowhere else on earth.

Numerous threats currently endanger the new species and its unique home, including habitat degradation by introduced pigs and deer, predation of seeds by rats, environmental events such as hurricanes, fire caused mostly by humans, and competition with invasive non-native plant species.

Representatives of the new tree species are around 5 to 12 m tall with trunks measuring up to 25 cm in diameter. Perhaps the most striking characters of *Melicope stonei* are the beautiful soft pubescence on the underside of its large leaves and its ramiflorous inflorescences, meaning that the flowers spring directly from the branches below the leaves.

Interestingly, the new species was first collected and documented as early as 1988. Since then 94 individuals have been mapped by local botanists in regions featuring unique high canopy mesic forest.



Home to the new species, the volcanic island of Kaua`i is the oldest of the high Hawaiian Islands featuring deeply eroded drainages, well-defined canyons, and stunning tall coastal seacliffs. Credit: Kenneth R. Wood

The [new species](#) has been officially described and named in the open access journal *PhytoKeys* only now. In their paper, the team of scientists from the National Tropical Botanical Garden and Smithsonian Institution (both USA), and the University of Göttingen, Germany, also raise concerns on the conservation status of this unique tree which is severely limited to a 1.5 km<sup>2</sup> area of occupancy on Kaua`i.

When interviewed, the authors make a strong case for increasing funding opportunities and enhancing a greater conservation ethic throughout

world communities. "Unfortunately, in Hawai'i alone there are 424 federally threatened and endangered plant taxa with very few research biologists and limited funding available to adequately monitor and protect them," explains the team of scientists. "We are hoping for a renaissance in the natural sciences whereby society values the perpetuation of [species](#) diversity with as much enthusiasm as perhaps sports and entertainment."

"With respect to previous research scientists, we are pleased to name *Melicope stonei* in honor of Benjamin Clemens Masterman Stone, British-American botanist who had contributed over 300 publications to science during his career along with many keen insights into Hawaiian *Melicope*."



Hard to capture on their own because they live among a unique combination of other tree species, representatives of the new tree species are around 5 to 12 m tall with trunks measuring up to 25 cm in diameter. Credit: Kenneth R. Wood

**More information:** Kenneth R. Wood et al. *Melicope stonei*, section *Pelea* (Rutaceae), a new species from Kaua'i, Hawaiian Islands: with notes on its distribution, ecology, conservation status, and phylogenetic placement, *PhytoKeys* (2017). [DOI: 10.3897/phytokeys.83.13442](https://doi.org/10.3897/phytokeys.83.13442)

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