

## Conservation status assessments of species-rich tropical taxa in the face of data availability limitations: Insights from Sulawesi *Begonia*

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Species conservation assessments using the criteria outlined by *The International Union for the Conservation of Nature Red List* can be compromised by limited data availability. Species-rich tropical plant taxa with numerous microendemics are often particularly problematic. *Begonia*, a megadiverse, pantropical genus (> 2100 species) of herbs and soft-wooded shrubs, is a prominent example. This study focusses on the *Begonia* flora of the Indonesian island of Sulawesi, comprised of 65 species mainly found in rainforest habitats, to better understand conservation challenges posed by species-rich tropical taxa. Sixty-two species are Sulawesi endemics, including 20 species restricted to limestone karst landscapes. Forty-eight species are represented by fewer than 10 herbarium collections. Here, we outline and discuss an approach that, despite these data limitations, allows meaningful conservation assessments by integrating analyses of occurrences, data primarily based on remote sensing approaches, including forest landscape integrity, forest cover loss, and land cover, as well as extent of suitable habitat estimation. Our integrative approach allowed complete assessments of 62 of the 65 Sulawesi *Begonia* species, decreasing the number of species that were not assessed or previously considered Data Deficient from 17 to three. The results indicate marked increases in the level of extinction threat for 19 species, and a large percentage of species were assessed in the threatened categories Vulnerable (6 species), Endangered (24 species) and Critically Endangered (27 species). Five species were assessed as Least Concern. Most Sulawesi *Begonia* species are found in primary and secondary forest habitats, and our findings are in line with the dramatic forest cover loss associated with changes in land use in Sulawesi over the last 50 years. Conservation action, including extension of the protected area network in Sulawesi with emphasis on areas of old-growth forest and limestone karst landscapes, and strengthening of *ex-situ* living collections of botanical gardens, is recommended.