

# Towards a worldwide inventory of all plants

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Plant checklists for geographic regions like the island of Tenerife form the basis of the GIFT database. Here 630 native plant species occur from dry coastal scrublands up to the alpine vegetation of Mount Teide. Around 120 of the species only occur on this particular island and more than 300 species are restricted to the Canary Islands. Credit: Ptarick Wiegelt

Declining biodiversity due to man-made habitat destruction and climate

change means that information about plant diversity and its distribution across the planet is now crucial for biodiversity conservation. With the Global Inventory of Floras and Traits (GIFT), a team of researchers from the Department of Biodiversity, Macroecology and Biogeography at the University of Göttingen has taken an important step forward in documenting and understanding global plant diversity. The results appear in the *Journal of Biogeography*.

It has been over 200 years since Alexander von Humboldt started investigating the striking differences in plant diversity, and for a long time, research has been limited by data availability. In recent times, the sheer number of known species and the multiple complex facets of biodiversity such as species richness, functional plant characteristics and relatedness have collectively overwhelmed efforts to bring all this data together. The researchers had to collect and standardise huge amounts of information from hundreds of published checklists and numerous unpublished regional inventories.

For the first time, GIFT collates information about the plant species composition in nearly 2,900 regions, including islands and protected areas. The data already covers about 79 percent of the global land surface and includes 80 percent (over 315,000 species) of all plant species known to science. The GIFT database links plant species to their geographic distribution, structural characteristics and to modern reconstructions of their evolutionary relationships, as well as to geographic, climatic and socio-economic characteristics of the regions.

"GIFT allows researchers, for the first time, to analyse near complete patterns of global plant diversity and regional species composition along with past and present effects," says Head of Department, Professor Holger Kreft. "Given the recent warnings about the devastating impact of humans on nature, for instance by the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), and

an increasing public awareness about [climate change](#) and its consequences, the publication of GIFT is a vital contribution to the field," says Dr. Patrick Weigelt, lead author. "We envision data from GIFT to serve as a baseline to assess changes in [plant diversity](#) due to climate change, habitat alteration or introduced invasive species from a local right up to a global scale."

**More information:** Patrick Weigelt et al, GIFT – A Global Inventory of Floras and Traits for macroecology and biogeography, *Journal of Biogeography* (2019). [DOI: 10.1111/jbi.13623](https://doi.org/10.1111/jbi.13623)

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