



Towards conservation of *Magnolia* section *Talauma* in the Caribbean and Mesoamerica

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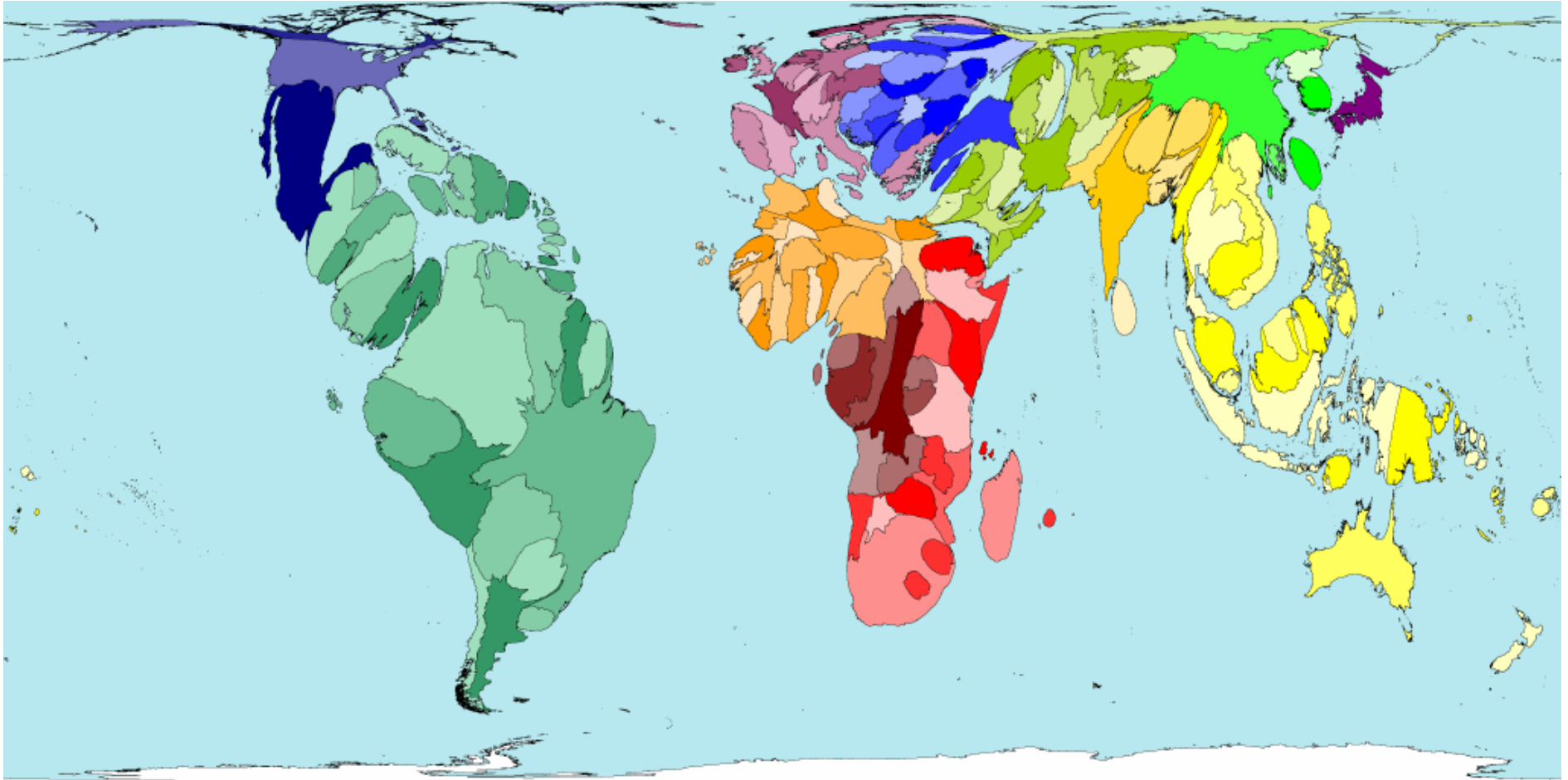
“We are the generation for whom the only message for
a tropical biologist is:

*Set aside your random research and devote your life to
activities that will bring the world to understand that
tropical nature is an integral part of human life.*

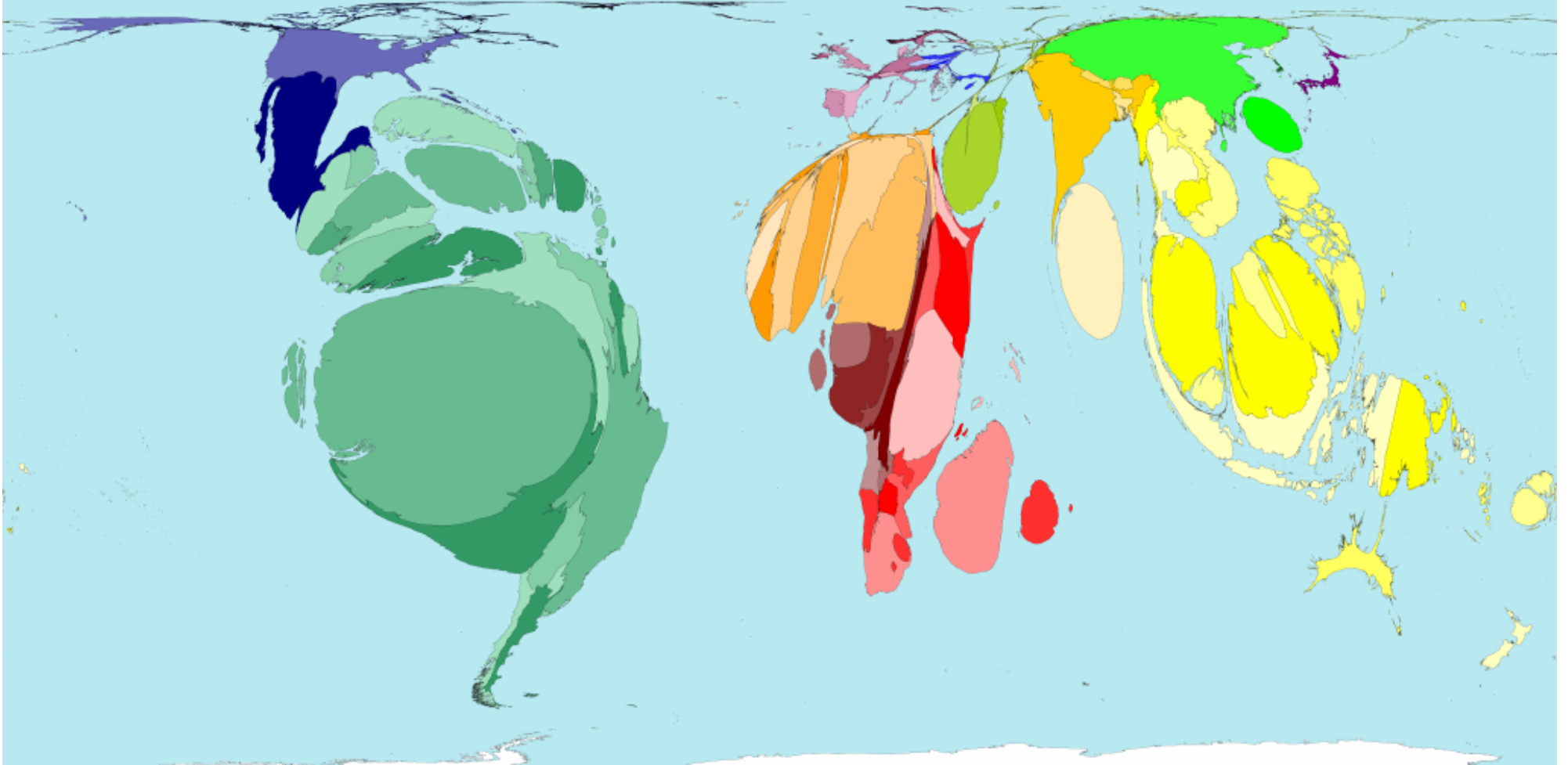
If our generation does not do it, it won't be there for the
next.”

Dan Janzen, 1986

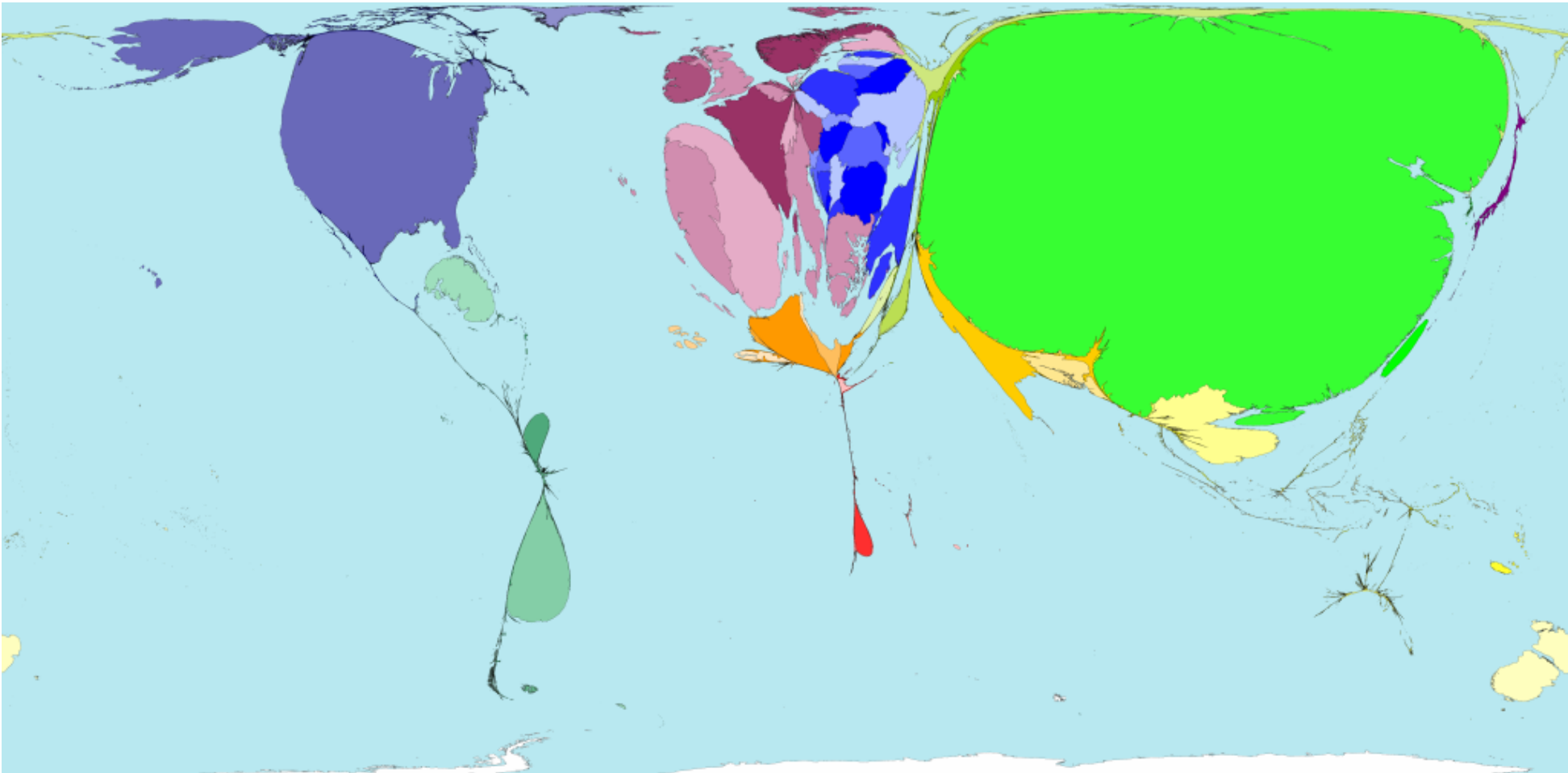
Native plant species



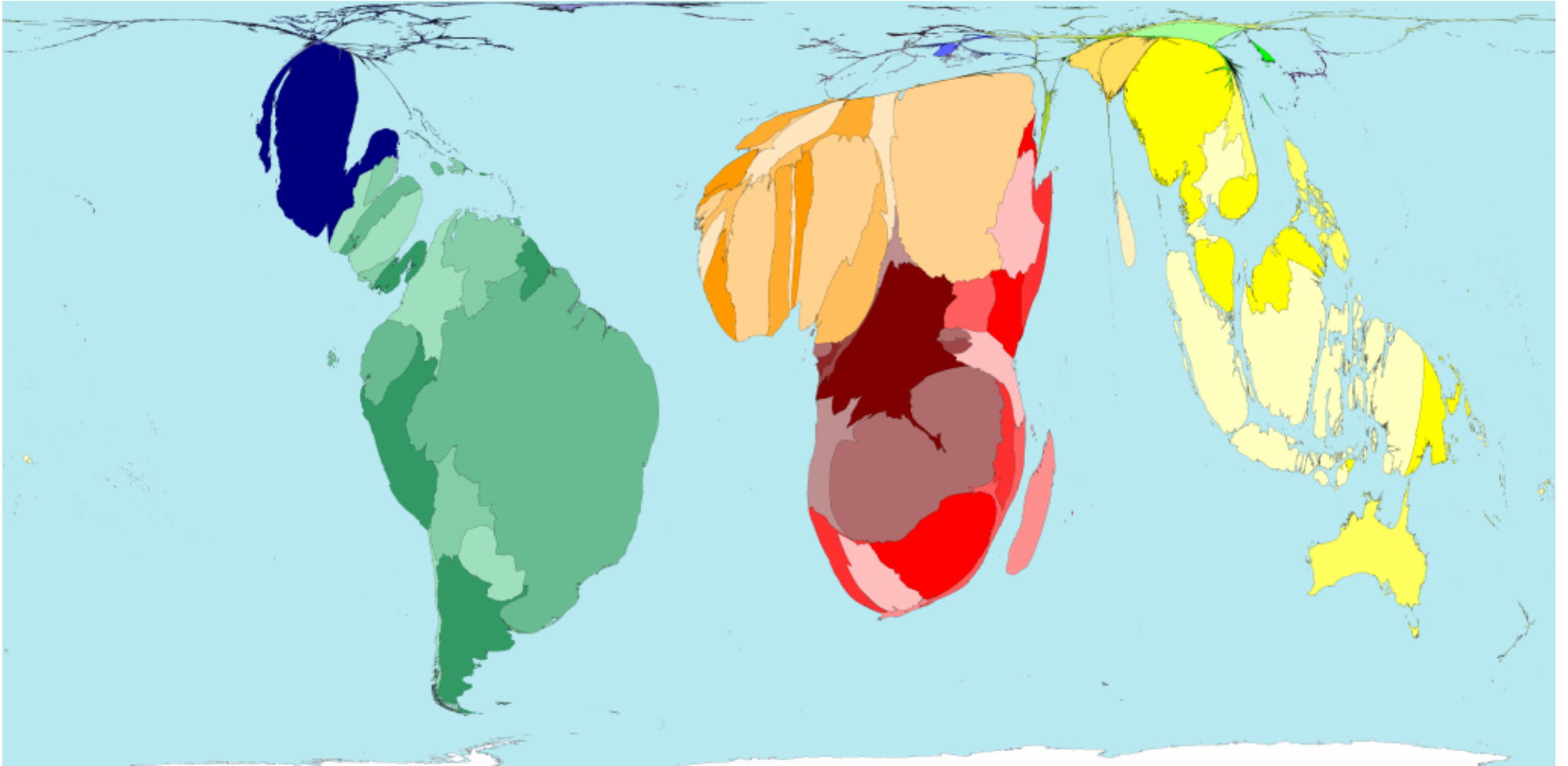
Plants at risk



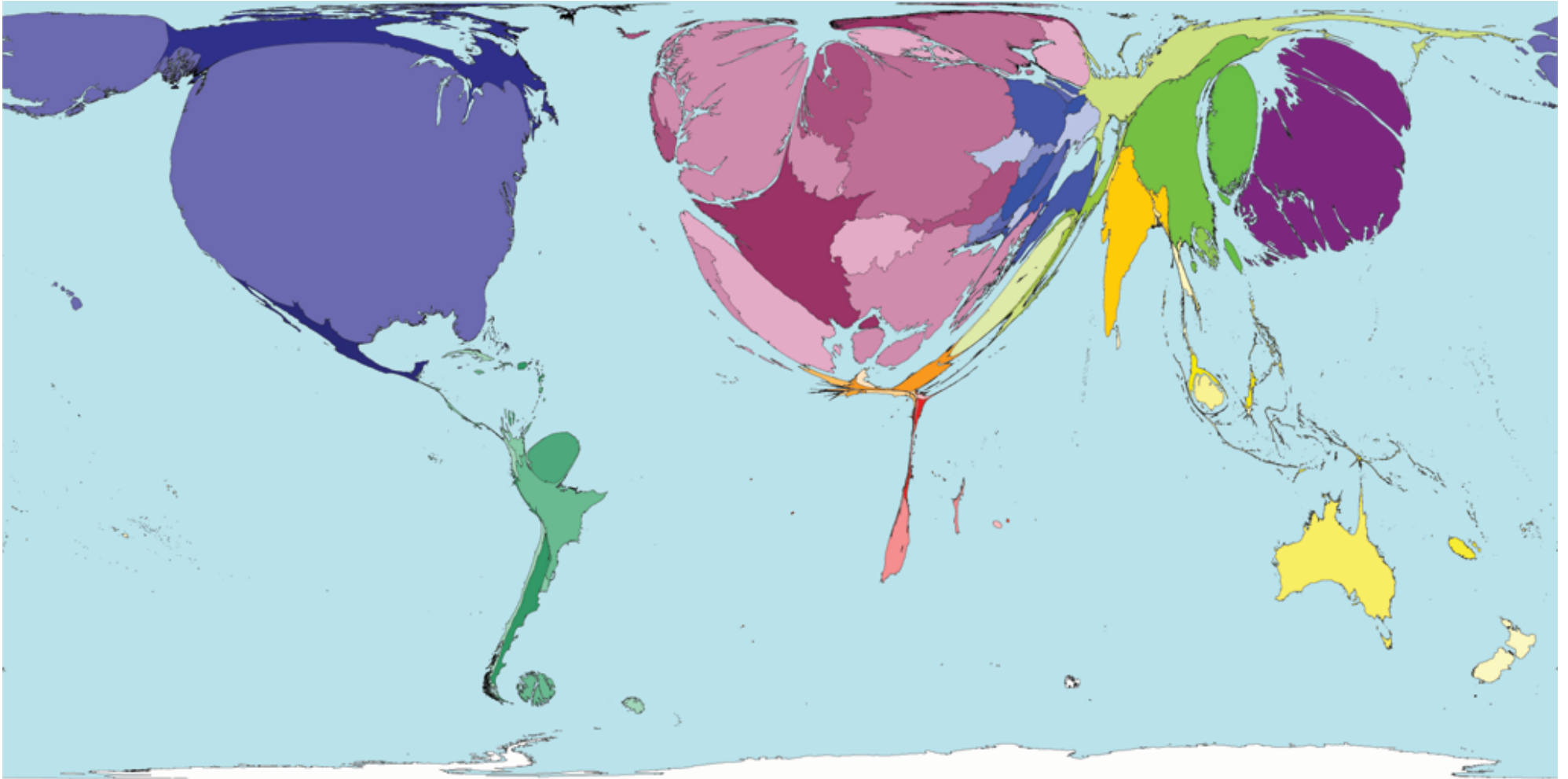
Forest growth



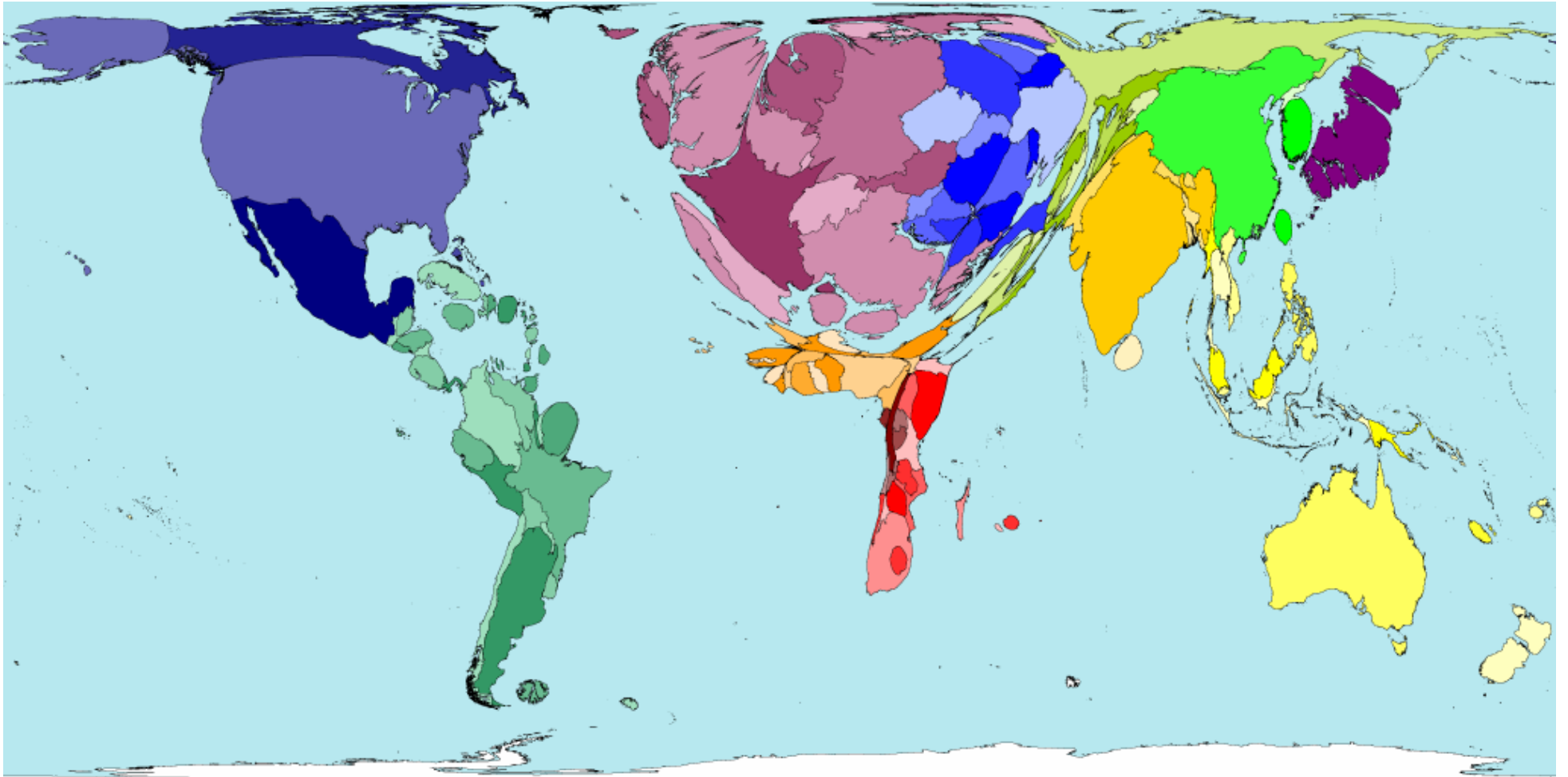
Forest loss



Scientific research



Botanical Gardens



Context

- 20 % of all plant species worldwide are threatened with extinction
- Focus on threatened plant species, i.e. the Magnolias of the Caribbean and Mesoamerica, most of which are highly endemic and Vulnerable, Endangered or Critically Endangered
- Nearly all these species are currently absent from *ex situ* collections anywhere in the world, and most of them are also not included in any *in situ* conservation actions
- Few of them have been studied from a molecular point of view
- The Caribbean, with approximately 13 native *Magnolia* species, and Mesoamerica, with about 55 species, are two important diversity hotspots of the genus
- Efficient *in situ* and *ex situ* conservation management plans can be based on the results of genetic studies, which may serve as a basis for a better focused selection of individuals and populations with high remaining genetic diversity

Aims

- **General aim:** Trace the evolutionary and biogeographic history of the Caribbean and Mesoamerican *Magnolia* species, and apply conservation genetic studies on a selection of these species to inform and undertake specific conservation actions.
- Ascertain the evolutionary history of the Caribbean and Mesoamerican *Magnolia* species, including all Caribbean species and a representative selection of Mesoamerican species, focusing on section *Talauma*.
- Confirm the mono- or paraphyly of *Magnolia* section *Talauma* and present an updated classification for this group, based on molecular data.
- Elucidate the biogeographic history of this same sampling, focusing on the spatio-temporal origin of *Magnolia* section *Talauma* and its subsequent colonization and radiation in a context of orogenetic and climatic events.
- Unravel the population genetics of a selection of Caribbean and Mesoamerican species in their entire distribution range, including genetic diversity, genetic structure and ongoing genetic processes.
- Assess the *in situ* and *ex situ* conservation needs of the studied *Magnolia* species, and present recommendations based on the results of the molecular research.
- Collaborate with local people and stakeholders in order to effectively conserve these species on the long-term.

Caribbean



Mexico

SPECIES	DISTRIBUTION	CONSERVATION STATUS
<i>M. decastroi</i>	Oaxaca	EN
<i>M. jaliscana</i>	Jalisco	EN
<i>M. lacandonica</i>	Chiapas	EN
<i>M. lopezobradorii</i>	Veracruz	DD (EN)
<i>M. macrocarpa</i>	Oaxaca	DD
<i>M. mexicana</i>	Oaxaca, Puebla, Veracruz	VU
<i>M. ofeliae</i>	Jalisco	EN
<i>M. perezfarrerae</i>	Chiapas	EN
<i>M. sinacacolinii</i>	Veracruz	DD (EN)
<i>M. wendtii</i>	Veracruz	CR

Costa Rica & Panama

SPECIES	DISTRIBUTION	CONSERVATION STATUS
<i>M. allenii</i>	Costa Rica, Panama	EN
<i>M. chiriquiensis</i>	Panama	DD
<i>M. costaricensis</i>	Costa Rica	VU
<i>M. gloriensis</i>	Costa Rica, Panama	DD
<i>M. guanacastensis</i>	Costa Rica	EN
<i>M. inbioana</i>	Costa Rica	EN
<i>M. morii</i>	Panama	EN
<i>M. multinervia</i>	Costa Rica	NT
<i>M. panamensis</i>	Panama	LC
<i>M. poasana</i>	Costa Rica	NT
<i>M. sambuensis</i>	Colombia, Panama	NT
<i>M. savegreensis</i>	Costa Rica	DD
<i>M. sororum</i>	Costa Rica, Panama	VU
<i>M. talamancana</i>	Costa Rica	NT
<i>M. wetterii</i>	Costa Rica	EN

How can YOU help?

Do you have access to wild populations you would like to include in our analysis?

➔ Send us leaves in silica gel and gather as much population information as possible





Thanks!

More info?
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