Workflow for the calculation of phylogenetic indicators

Louise Antonia Hendrickx, Lissa Breugelmans, Maarten Trekels, Quentin Groom
Meise Botanic Garden, Belgium
louise.hendrickx@plantentuinmeise.be

BIODIVERSITY BUILDING BLOCKS FOR POLICY

Funded by the European Union
Project 101059592

What is Phylogenetic Diversity?

Phylogenetic diversity is a measure of biodiversity which takes evolution into account.
It is calculated as the sum of the lengths of the phylogenetic tree branches among a group of species.

Why Phylogenetic Diversity?

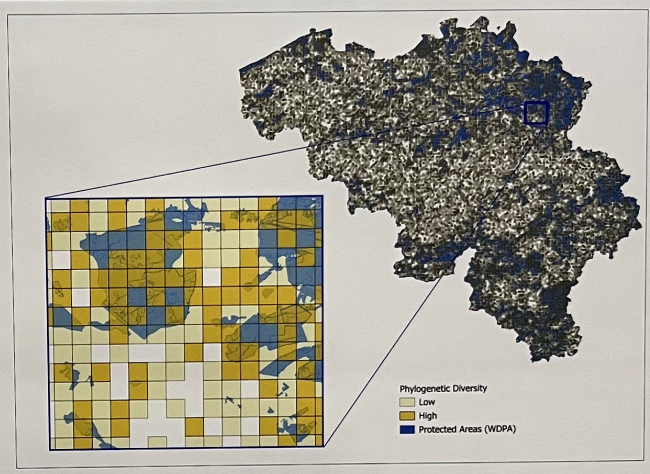
Phylogenetic diversity can be used in conservation planning to maximise a variety of features, which could be particularly useful in light of the changing environmental conditions.

Objectives

Objective 1:
Design an indicator
A metric that gives information about how well phylogenetic diversity is safeguarded by current protected areas for a certain higher taxonomic group

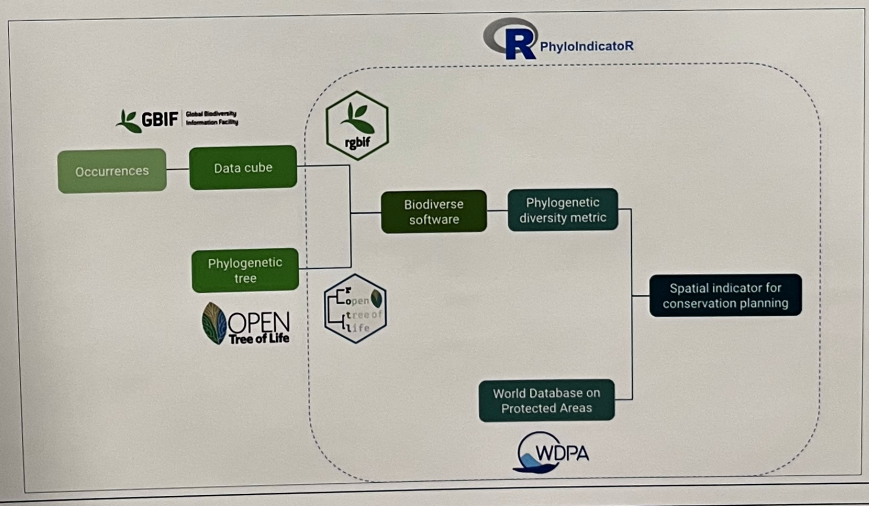
Objective 2:
Create a map
A map that shows an overlay of high phylogenetically diverse areas with protected areas

Objective 3:
Design a workflow
A workflow to rapidly calculate this overlap to identify potential directions for future expansion of protected areas



Simulation of overlap between protected areas and areas of low/high phylogenetic diversity in Belgium with a randomly generated dataset

The components of PhyloIndicatoR, an R notebook to produce a phylogenetic indicator for conservation planning using species occurrence data cubes and a published phylogenetic tree as input.



Questions - Give your opinion by putting colored sticky dots in the boxes

- **Have you ever considered using phylogenetic diversity?**
- **Where do you think phylogenetic diversity indicators are most useful?**
  - CONSERVATION POLICY
  - RESEARCH
- **For which of the following higher taxa would you want to know the PD score?**
  - MAMMALS
  - BIRDS
  - AMPHIBIANS
  - REPTILES
  - FISH

Phylogenetic diversity as an indicator within the B-Cubed project

- Standardising access to biodiversity data, empowering policymakers to address the impacts of biodiversity change.
- Improve the existing policy evidence base and contribute to better alert systems by providing fast access to pre-aggregated and modelled biodiversity data and standardised biodiversity indicators responsive to the addition of new data.