

Lifemapper on SAGE2

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PRAGMA37 San Diego

September 11-14, 2019

Project Overview

- ❑ A collaboration between myself and researchers at the University of Kansas
- ❑ **The goal:** make Lifemapper accessible from SAGE2



Lifemapper

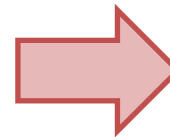
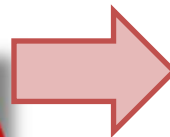
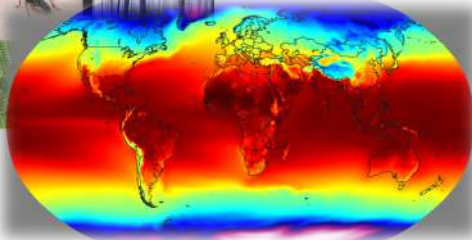
SAGE2TM

What is Lifemapper?

- Biodiversity modeling software
- Inputs:
 - Species occurrence data
 - Environmental data
- Outputs:
 - Potential habitats for species
 - Correlations between species occurrences
 - And more!



Lifemapper



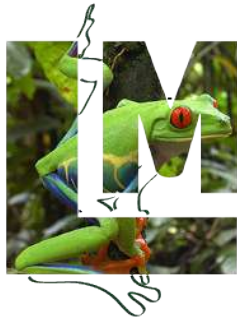
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BiotaPhy

- The *BiotaPhy* project:

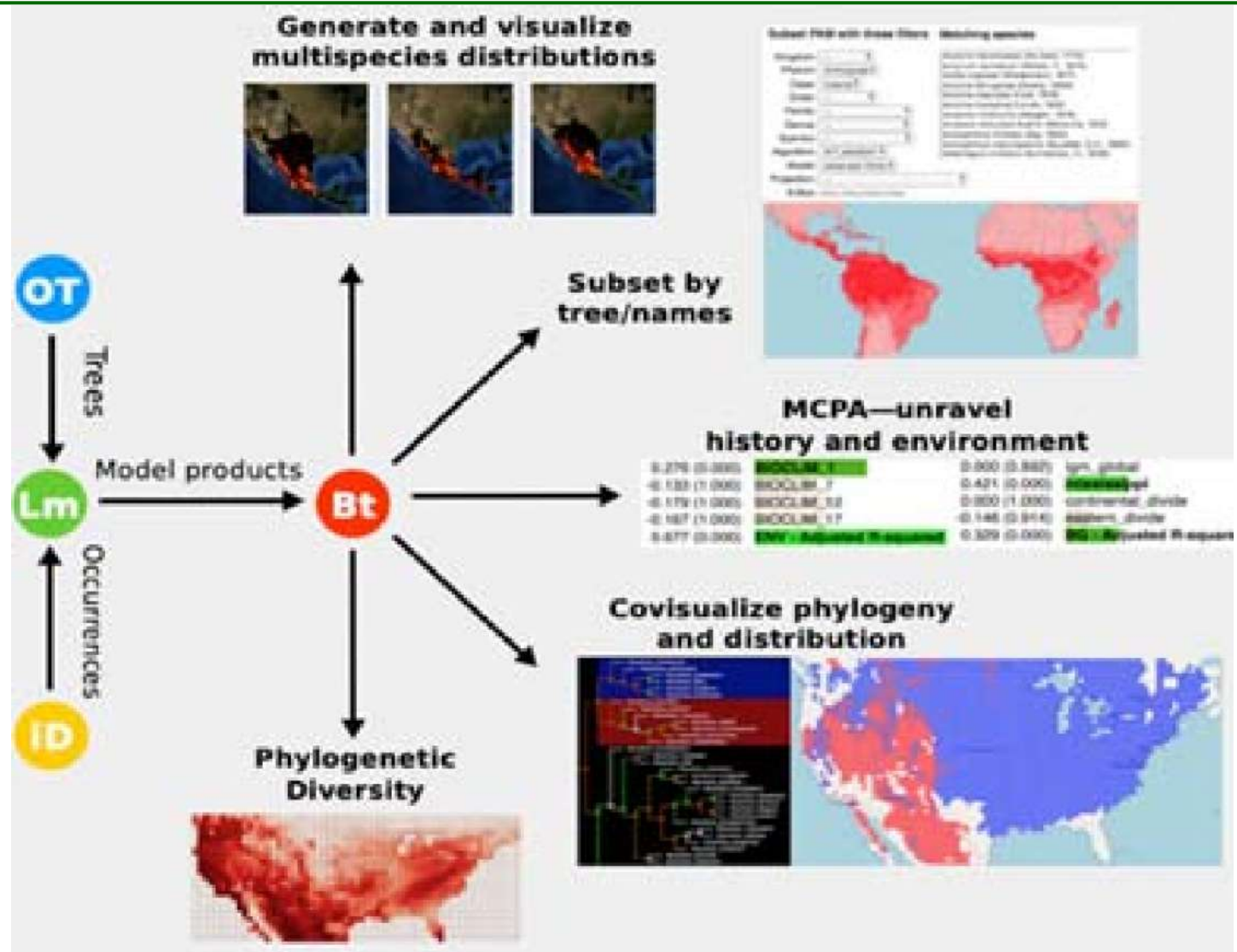
*Connect biodiversity projects
through workflows with
integrated data providers*



Lifemapper



BiotaPhy



BiotaPhy's Online Interface

BiotaPhy Platform

Username
Password
Login

[sign up](#)

Search Species

Anonymous

New project name

taffy ✓

quercus ✓

hexalectris ✓

Bestbutterflytest ✓

Chen_Yanni ✓

Show more

Public

public_boom-2019.04.12 ✓

heuchera_global_10min ✓

BiotaPhy | New Project

SPECIES DATA

SDM ALGORITHMS

SDM LAYERS

TREE UPLOAD

HYPOTHESES

SUBMIT PROJECT

Data from iDigBio and Open Tree:

☐ List of species ☒ Taxonomic search ☐ Use GBIF data ☐ Upload CSV file of species points

Filter available species

Kingdom: ☒ Animalia
Phylum: ☒ Mollusca
Class: ☒ Cephalopoda
Order: ☒ Octopoda
Family: ☒ Octopodidae
Genus: ☒ Octopus

Matching species
(found 79)

Octopus alecto Berry, 1953
Octopus araneoides Iw. Taki, 1964
Octopus argus Krauss, 1848
Octopus australis Hoyle, 1885
Octopus balboai Voss, 1971
Octopus berenice Gray, 1849
Octopus berrima Stanks & Norman, 1992
Octopus bimaculatus Verrill, 1883
Octopus bimaculoides Pickford & McConnaughe
Octopus bocki Adam, 1941
Octopus boscii
Octopus brachiotomus Keable, S J & Norman
Octopus brevipes d'Orbigny, 1835
Octopus briareus Robson, 1929
Octopus californicus Berry, 1911
Octopus campbelli Smith, 1902
Octopus cephea Gray, 1849
Octopus chierchiai Jatta, 1889
Octopus conispadiceus Sasaki, 1917
Octopus cyanea Gray, 1849
Octopus diminutus Kaneko & Kubodera, 2008
Octopus exannolatus Norman
Octopus filiosus Howell, 1867
Octopus fitchi Berry, 1953

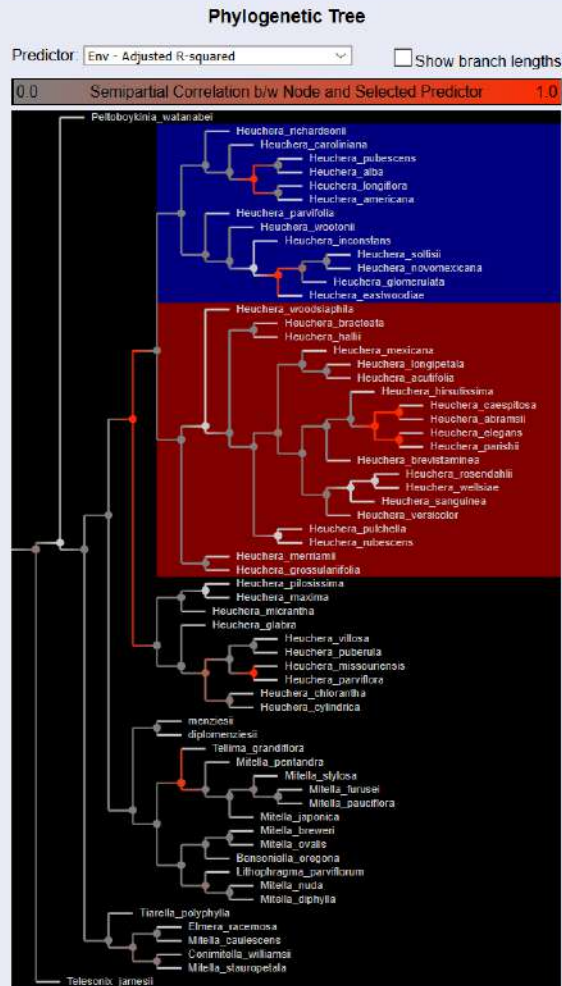
MATCH

Selected species

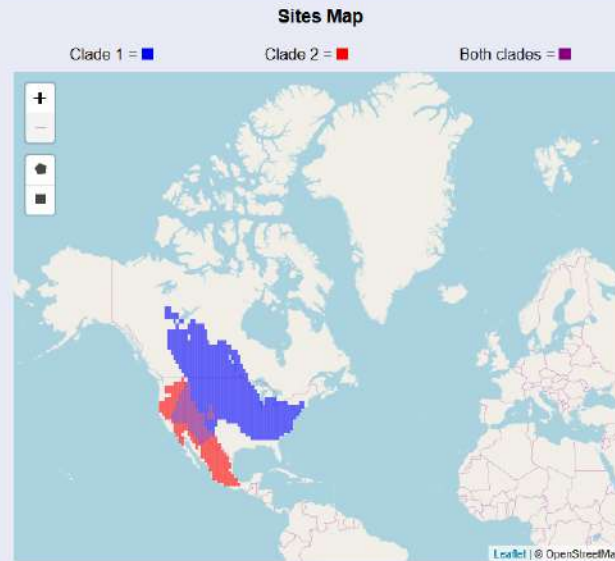
(occurrence points from iDigBio)

Octopus alecto Berry, 1953
Octopus araneoides Iw. Taki, 1964
Octopus argus Krauss, 1848
Octopus australis Hoyle, 1885
Octopus balboai Voss, 1971
Octopus berenice Gray, 1849
Octopus berrima Stanks & Norman, 1992
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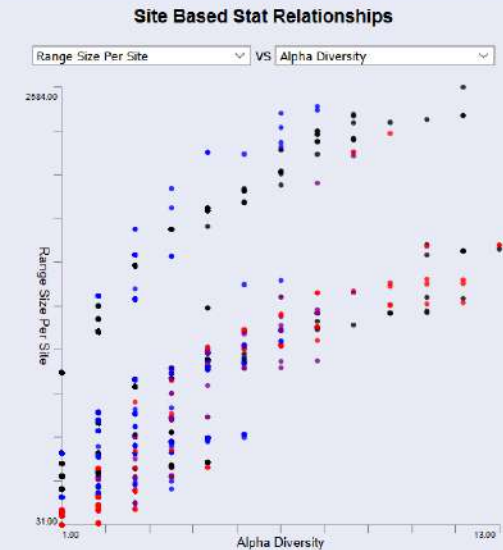
BiotaPhy's Offline Interface



Node color indicates correlation between sister clades and the selected predictor. Selecting a node highlights aggregated presence of species of one clade in blue and the other in red. Sites where species of both sides are present are purple.



The map shows sites where the selected species are present. Use the select by bounding box or by polygon tools to highlight in the tree which species are present at those selected sites.

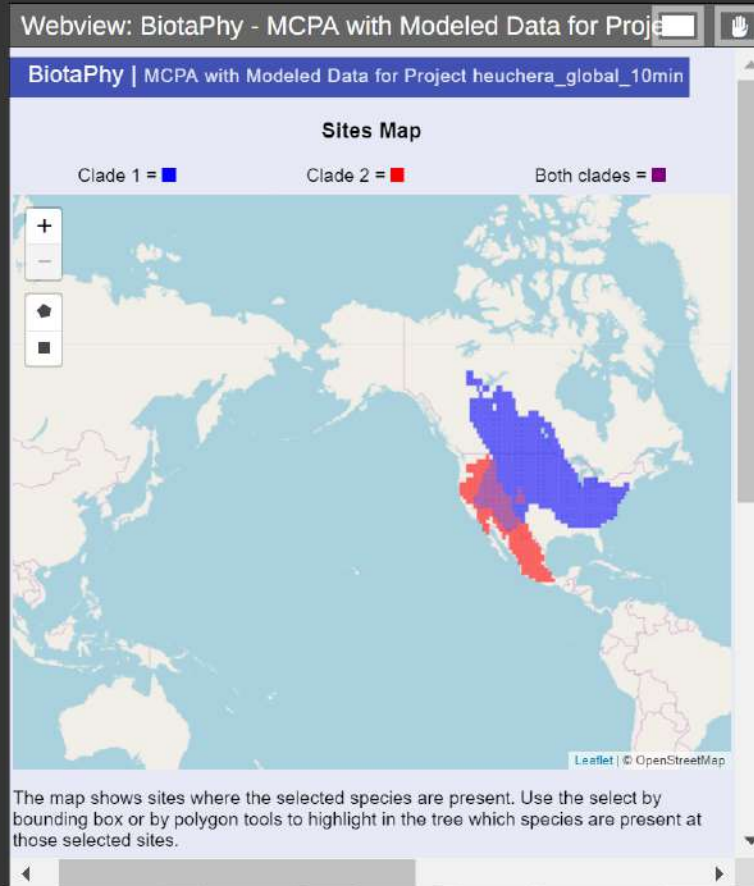
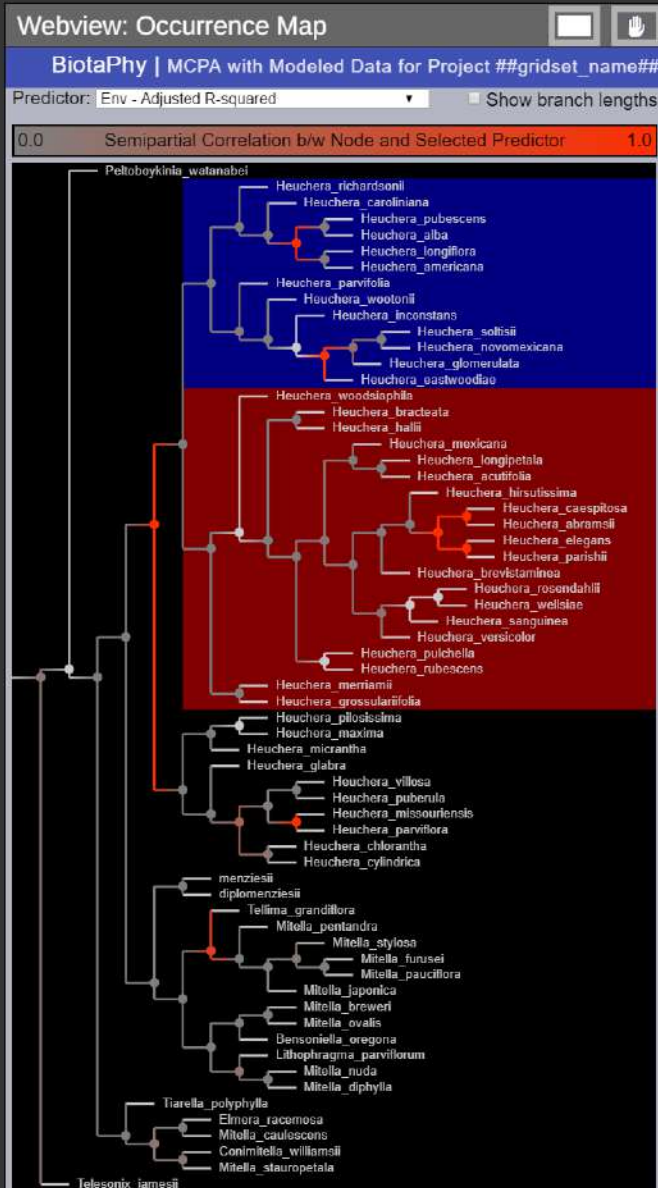


The scatter plot shows relationships between site based statistics; each dot represents a single site. If sites in the map are highlighted, the corresponding sites are highlighted in the same color in the scatter plot. You can brush sites in the plot by clicking and dragging to create a selection box. Doing so will highlight the selected points as well as those sites on the map and the species present at those sites in the tree. Use the two drop down boxes to select the metrics to use for the X and Y axes.

Lifemapper on SAGE2

10:35 am

localhost:9292



Lifemapper on SAGE2

□ The vision for this app:

- Allow users to easily share visualized Lifemapper results with each other
- Facilitate side-by-side visual comparison between different packages
- Make Lifemapper more accessible



Future Work

- ❑ Port the BiotaPhy online interface into SAGE2
 - Requires communication with Lifemapper
- ❑ Cross-package features
 - Visualize data from multiple packages on one map
 - Allow users to submit multiple packages back to Lifemapper for correlation analyses
 - Then provide visualizations for these new results

Thank you!

This work is funded in part by grants (NSF ACI 1550126 and NSF ACI 1234983)
from the National Science Foundation.