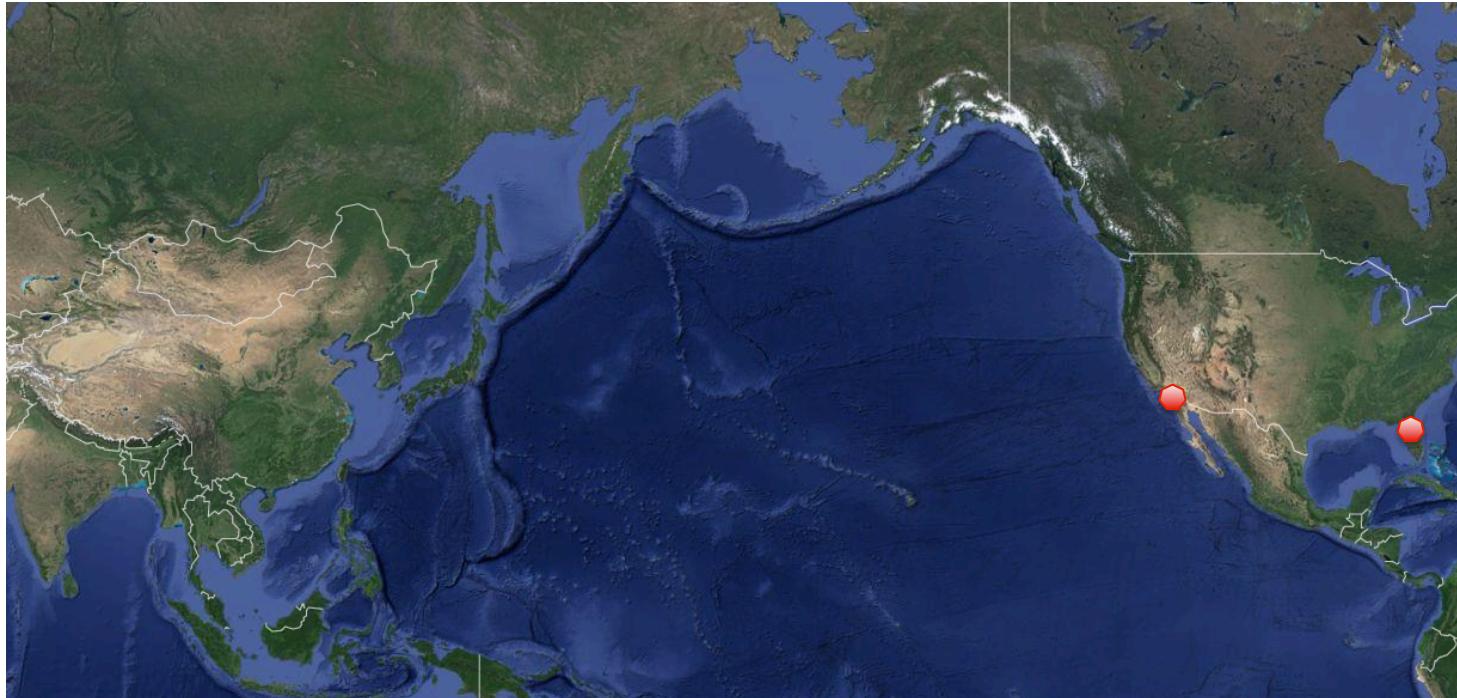


Distributing Lifemapper across the PRAGMA Infrastructure

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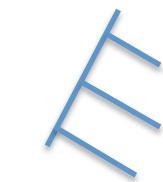


The goals

1. Increase scalability, availability and flexibility of Lifemapper software.
2. Run Lifemapper on PRAGMA testbed with enabled access to private satellite data.
3. Increase usability of PRAGMA infrastructure as a framework for deployment of scientific applications and data resources.

Lifemapper

- ecological niche modeling
- multi-species range and diversity analysis
- visualization



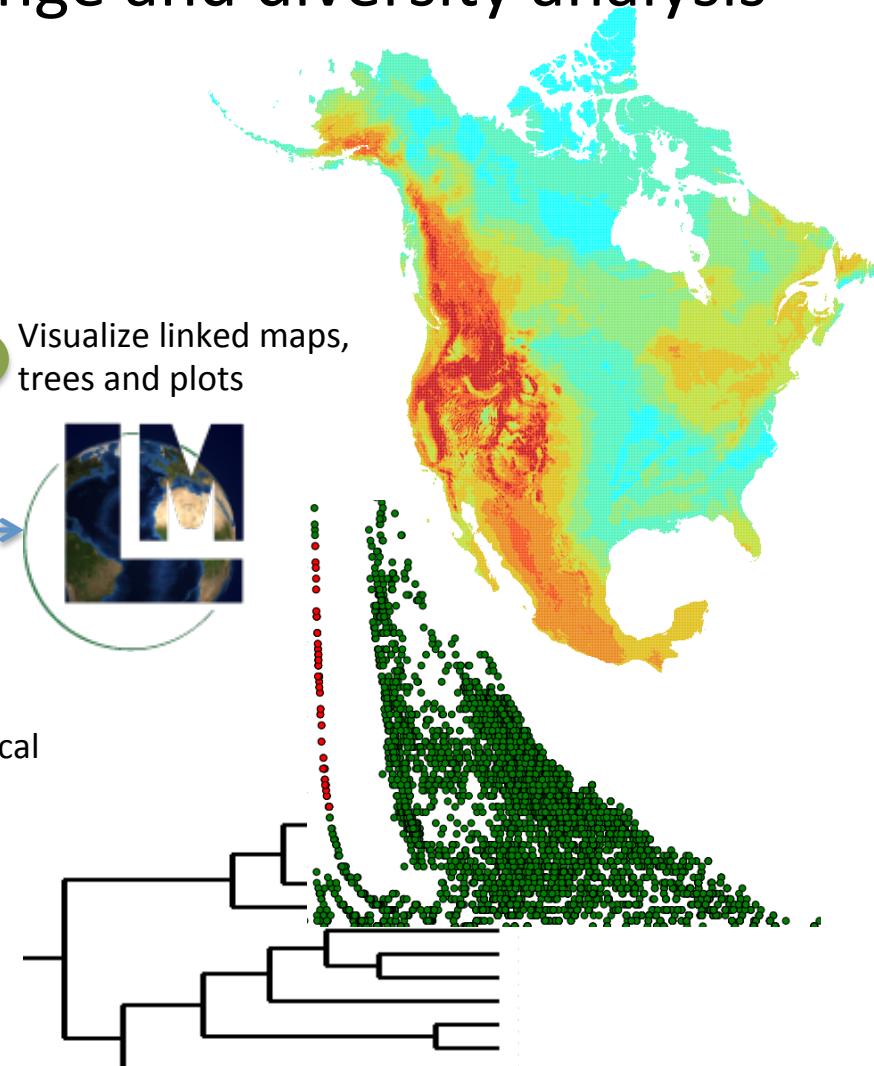
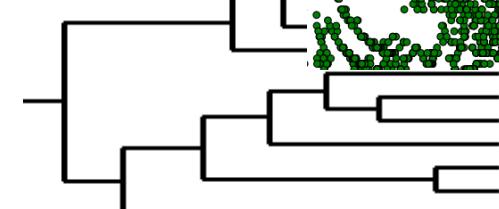
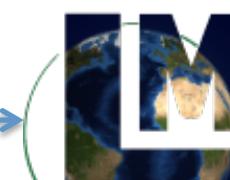
1 Select clade

species data

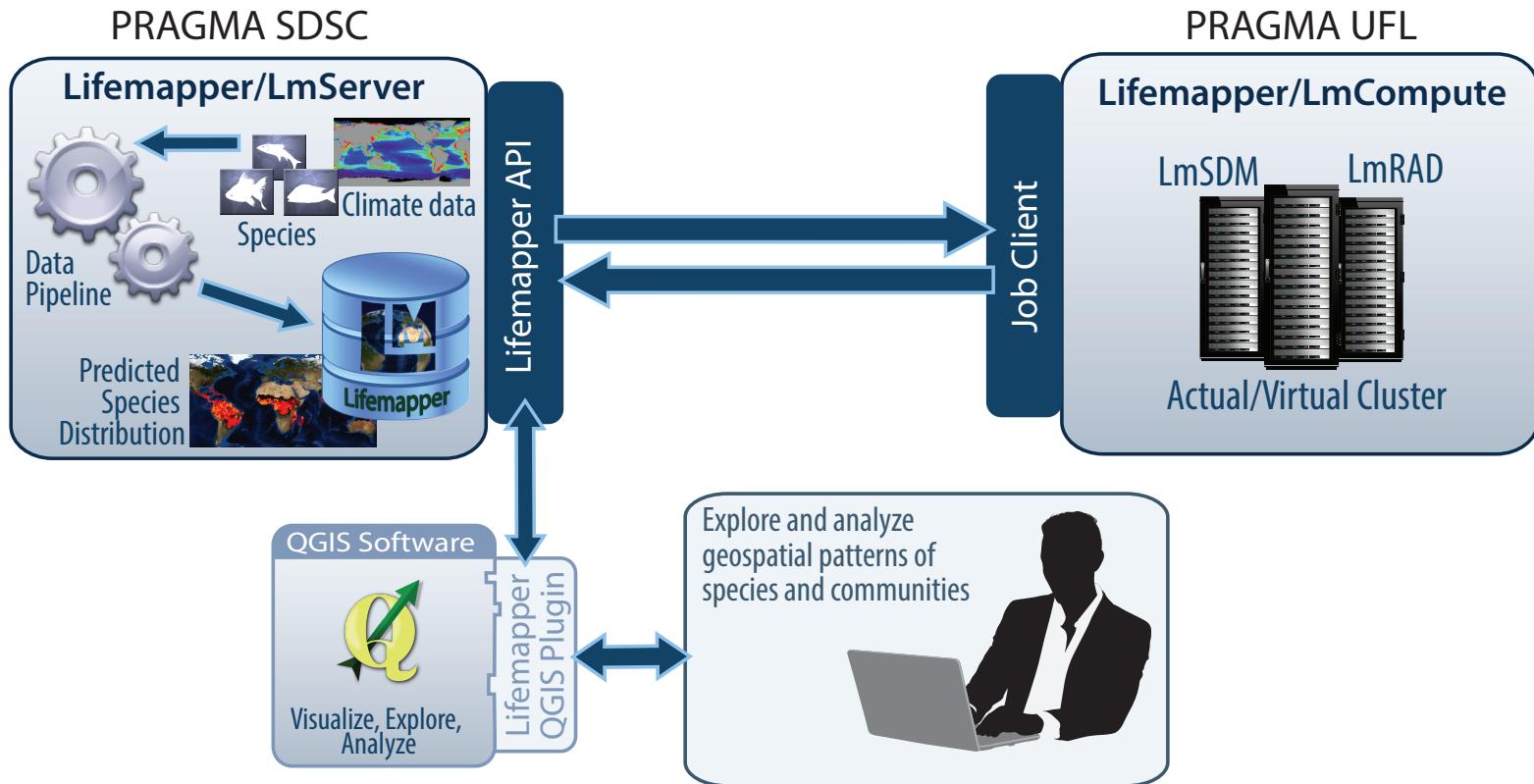
- 2 trees
- analyze multi-species data:
- measure macro-ecological shifts over time
 - quantify and qualify biodiversity

3

Visualize linked maps,
trees and plots



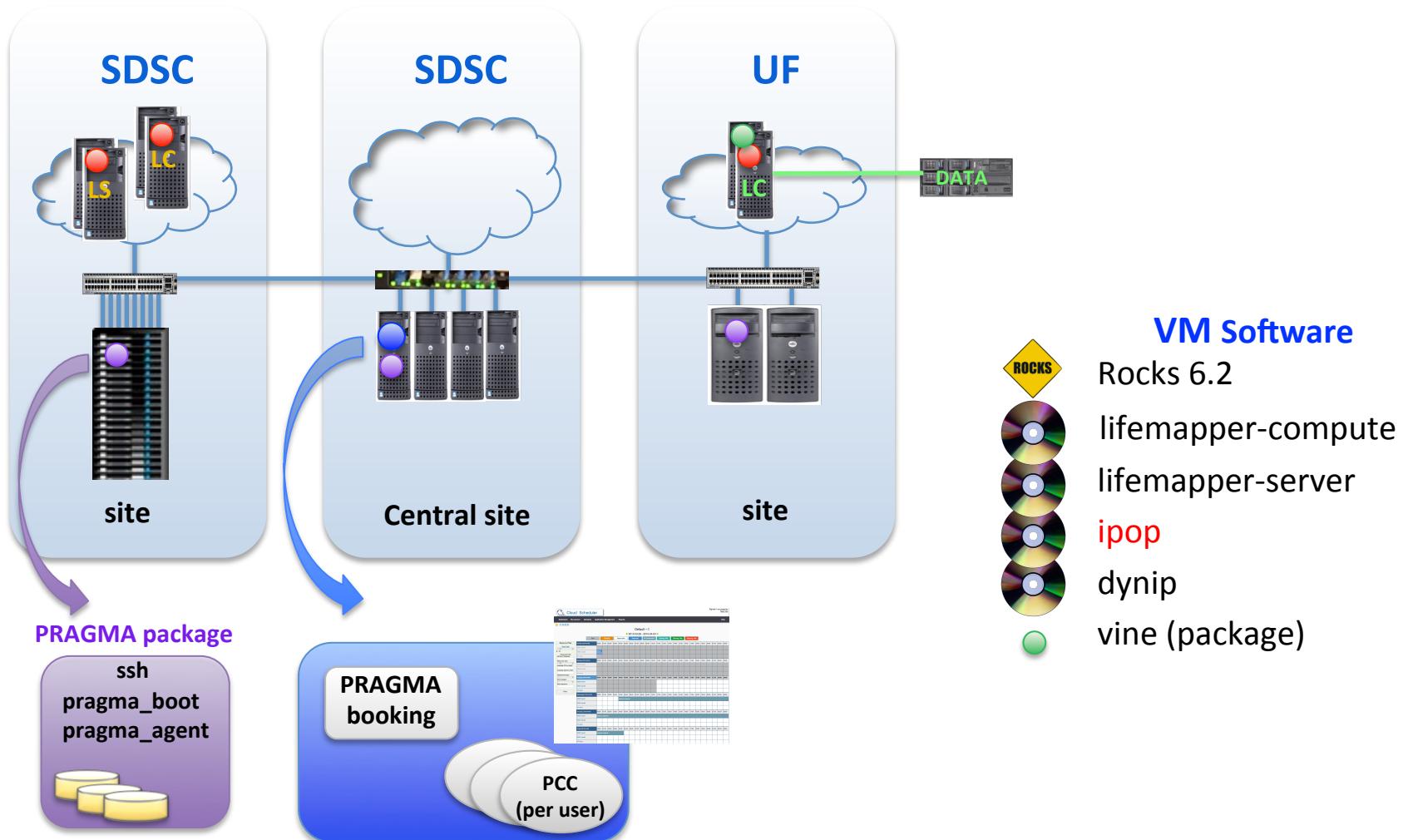
Lifemapper on PRAGMA Testbed



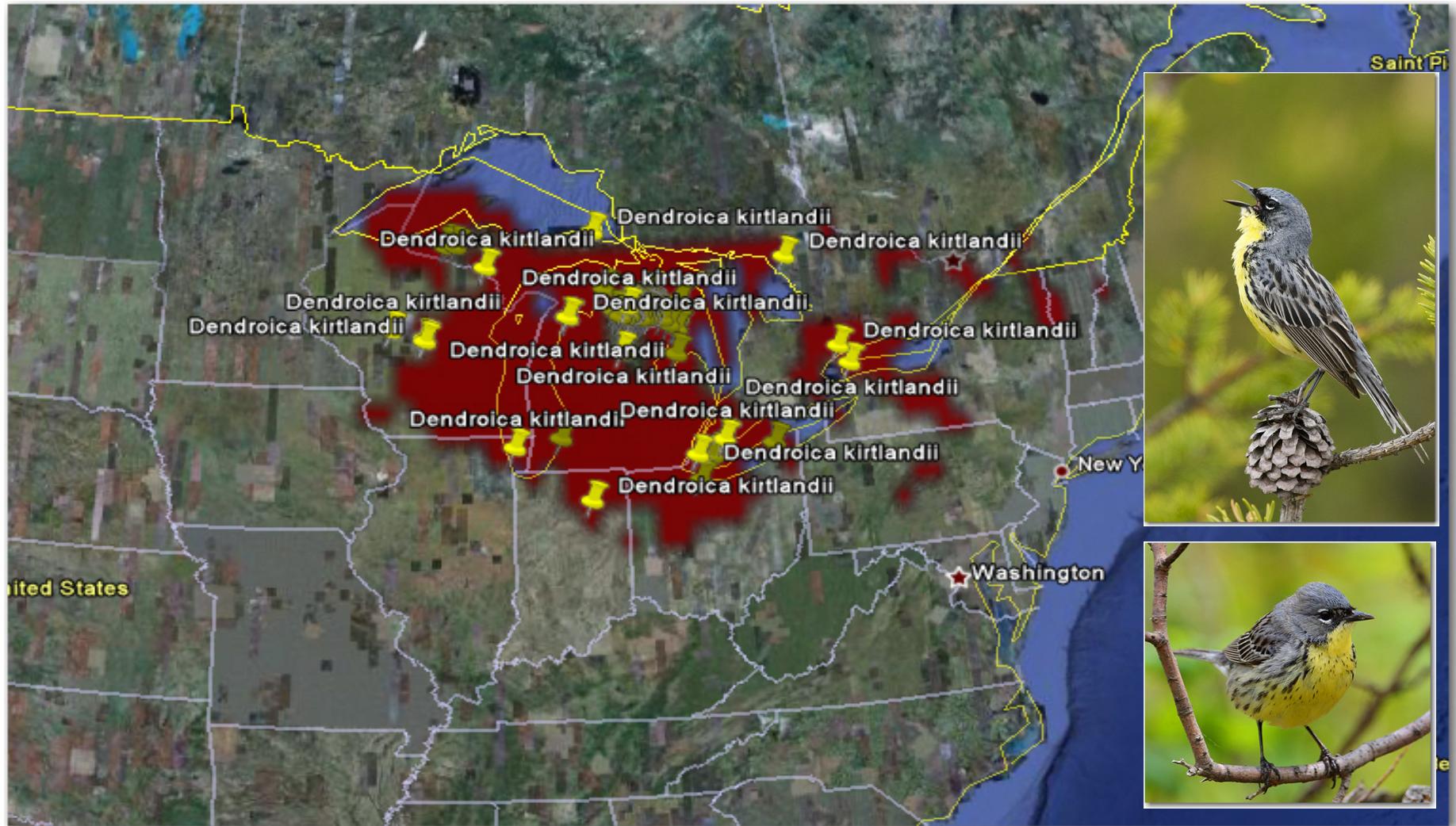
The infrastructure needed to make it work



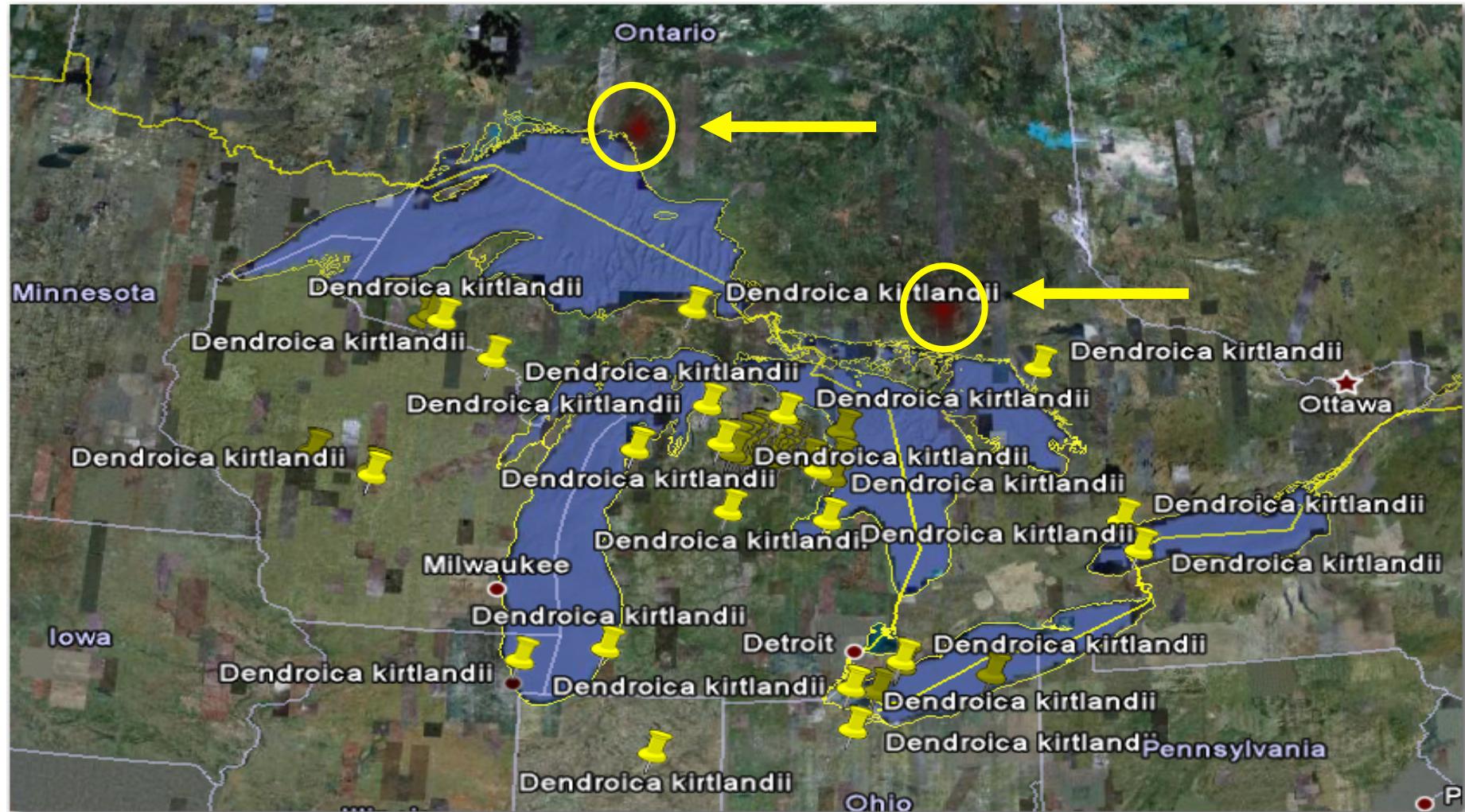
Integral components



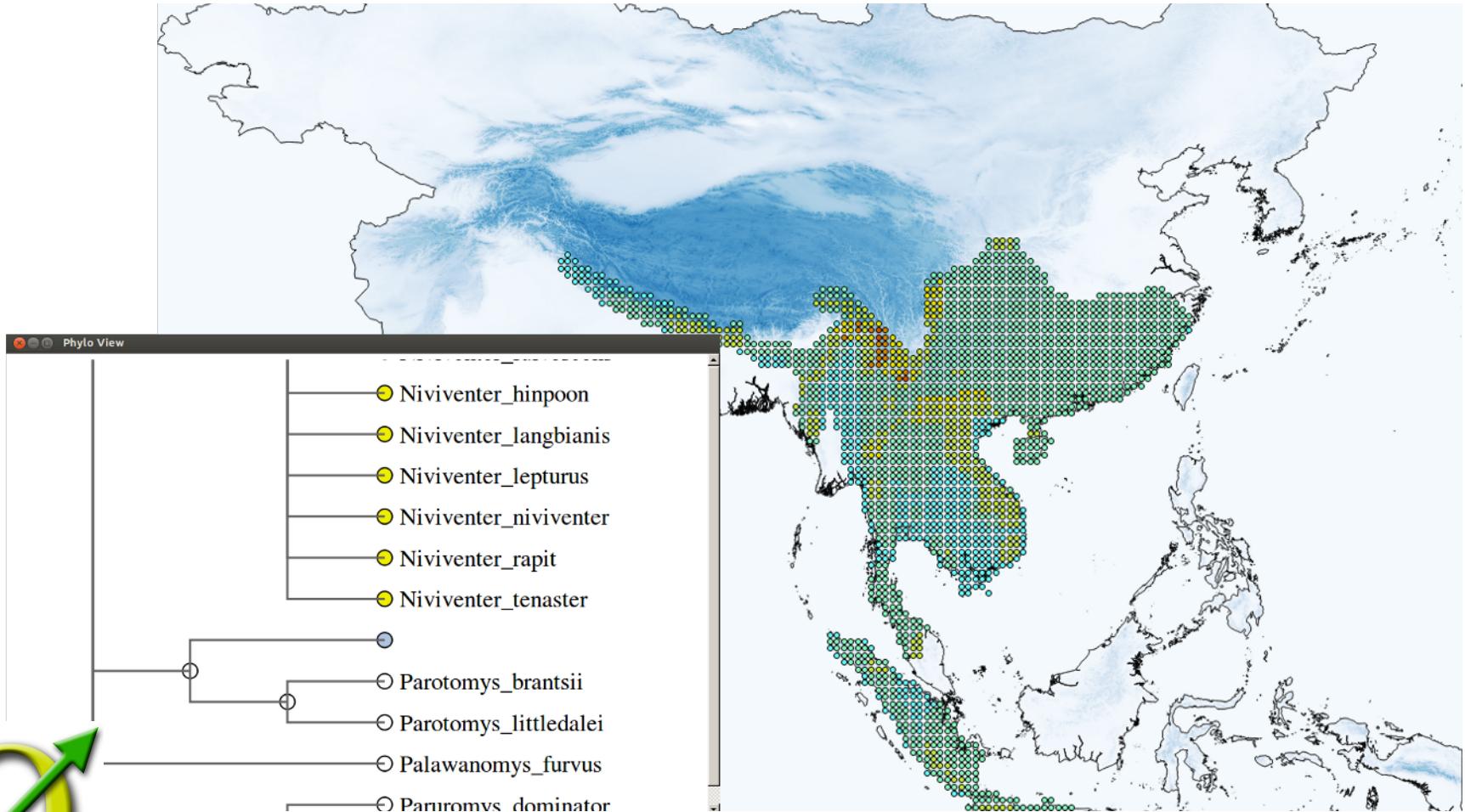
Kirtland's Warbler Range



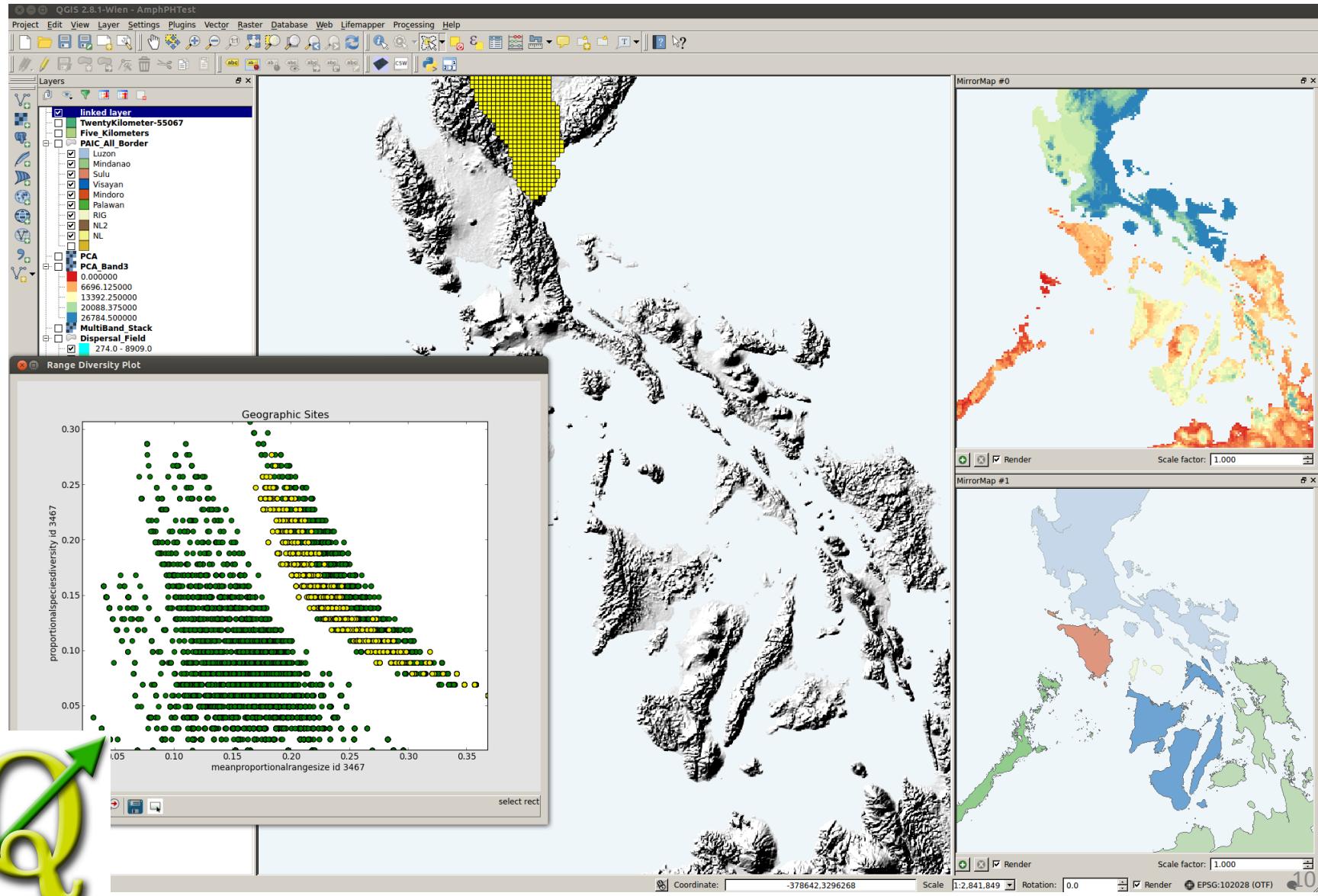
Kirtland's Warbler Future



Lifemapper Integrates Phylogenetic Trees



The PAICs of the Philippines



Challenges

- Identify memory leaks
- Improve clunky data population process
- Improve process to deal with complexity of software stack
- Strengthen overlay network for accessing specialized data
 - Timeouts of mounted filesystem
 - Try iPOP and ViNe

Next steps

- To accommodate new scenarios and datasets
 - Further Lifemapper code modularization for custom data
 - Formalize requirements for fully described data (researcher, iDigBio, etc)
 - Modify process to configure on reservation with PRAGMA scheduler
- For Mt. Kinabalu species and satellite data
 - Enable multi-species pattern analyses
 - Set up pipeline between Indonesia and other sites (ex: UFL with restricted satellite data)
- Laptop installation of both components in single VC using mounted data



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PRAGMA

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Lifemapper

USGS BISON G14AC00285

US NSF BIO/ABI 0851290

Rocks

US NSF OCI-1032778

US NSF OCI-0721623

iDigBio

US NSF EF-1115210

