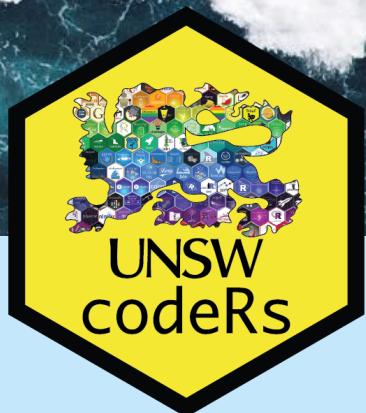


Phylogenetic Trees:

How to find them and make them pretty



Ben Walker, PhD Candidate – 7 Nov 2022

 @BenJJWalker
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Overview

Finding
Data

Making
Trees

► Find Data & Make Phylo Trees

► What am I addressing

► Why it's important

► What may be likely

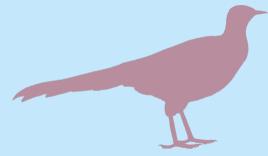
► How does this fit



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Overview

Finding
Data

Making
Trees

► Finding (Ecological) Data

► Online databases:

► Global Biodiversity
Information Facility
([GBIF](#))

► Encyclopedia
of Life ([EOL](#))

► Atlas of Living
Australia ([ALA](#))



Overview

Finding
Data

Making
Trees



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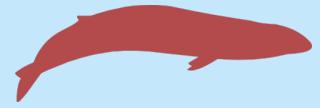
► Finding (Phylogenetic) Data

► Super Trees:

► Open Tree
of Life ([OToL](#))

► BEAST [v.1](#) & [v.2](#)

► Phylotastic ([r pkg](#))



Overview

Finding
Data

Making
Trees

► Overall Workflow:

► 1. Get Species List

► 2. Get Species Data

► 3. Use Species List to
get Induced Tree

► 4. Take Induced Tree
and Map Species Data



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Overview

Finding
Data

Making
Trees

► 1. Induced Tree Workflow:

► 1. Make Species List Object

► 2. Use List to search OToL online API

► 3. Get Induced tree with
Median Branch Lengths

► 4. Print Induced Tree
to Newick String



Overview

Finding
Data

Making
Trees

➡ 2. Pretty Tree Workflow:

➡ 1. Make Species Data Object

➡ 2. Read in Induced Tree

➡ 3. Use Fast Ancestral State
Reconstruction on Species Data

➡ 4. Make the colours Pretty
and Print Tree to PNG



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PHYLO TREES



Overview

Finding Data

Making Trees

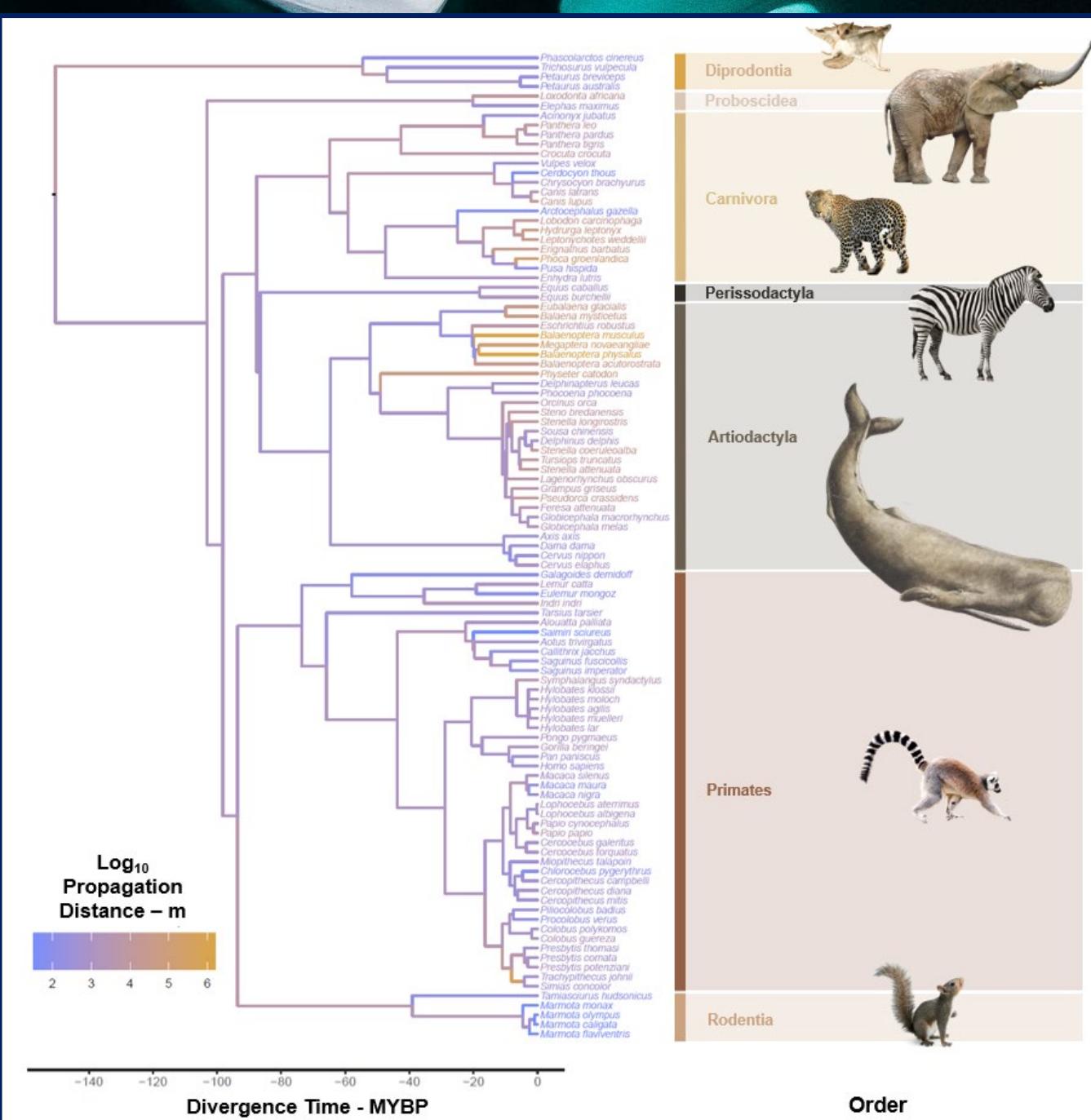
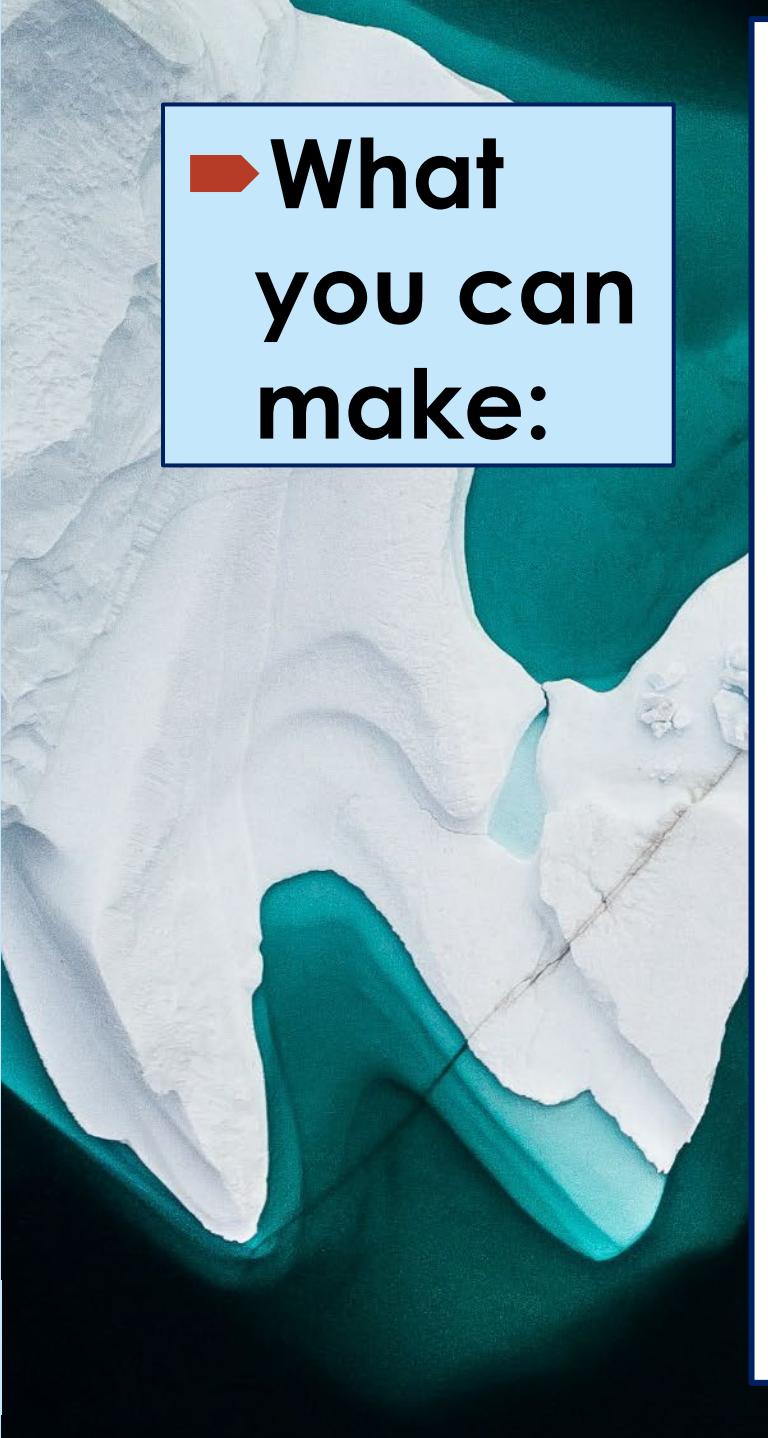


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➡ What
you can
make:



PHYLO TREES



Overview

Finding Data

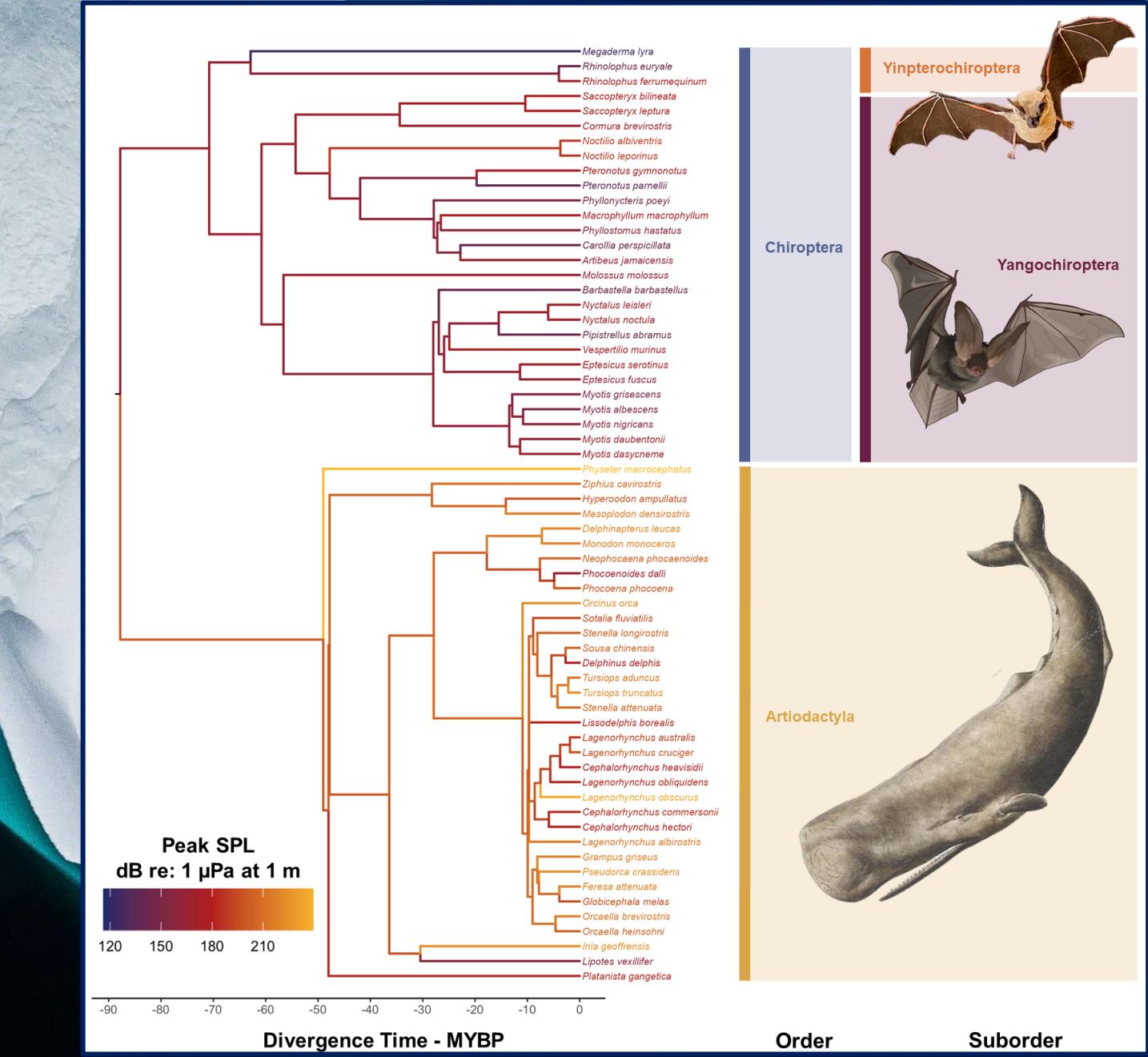
Making Trees



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➡ What you can make:

PHYLO TREES



Overview

Finding
Data

**Making
Trees**



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An aerial photograph of a beach where light blue ocean waves are crashing onto a sandy shore. The sand has darker, reddish-brown streaks where water has receded. A large, semi-transparent white rectangular box is positioned in the upper right area of the image. Inside this box, there is a dark blue horizontal bar at the top containing a red arrow pointing to the right, followed by the word "Questions?" in a large, bold, black sans-serif font.

► Questions?