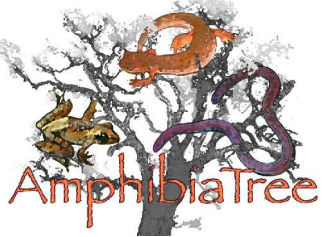


Amphibia Tree



Goals

Goals

Data

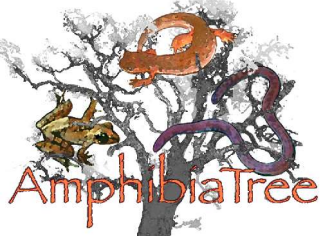
Products

Challenges

Responses

"The goal of AmphibiaTree is no less than a comprehensive tree of all amphibians.

···We envision not simply a skeletal branchwork, but also a tree heavy with foliage and inflorescence, rich in hue and texture."



Steering Committee

Goals

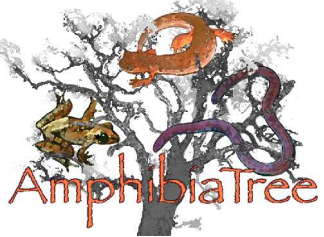
Data

Products

Challenges

Responses

- ❖ University of Texas, Austin
 - David Cannatella
 - David Hillis
- ❖ University of California, Berkeley
 - Marvalee Wake
 - David Wake
- ❖ Harvard University
 - Jim Hanken
- ❖ University of Kansas
 - Linda Trueb
 - Rafe Brown



Data and Analysis

Goals

Data

Products

Challenges

Responses

❖ Integration of Datasets

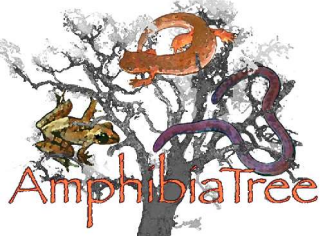
- Biodiversity, Genomics, Evolutionary Morphology, Paleontology, Development

❖ Computational Biology

- Tree Visualization
- Visualization of Morphology

❖ Genomic Analysis

- Secondary structure, gene order, etc.



Products

Goals

Data

Products

Challenges

Responses

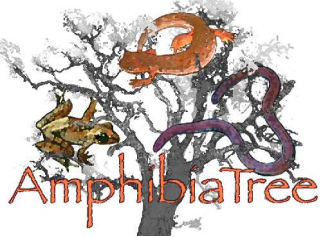
❖ Phylogenies

❖ Web Resources

- AmphibiaWeb (David Wake)
- Tree of Life (W. & D. Maddison)

❖ Human Resources

- Training of students through exchanges
- Community workshops



AmphibiaWeb

Goals

Data

Products

Challenges

Responses

AmphibiaWeb - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://elib.cs.berkeley.edu:8080/aw/newpage.html> Go

amphibiaweb

Search Database

Browse Database

Country Search

Amphibian Declines

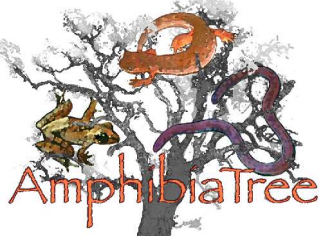
Site Map

About AmphibiaWeb

The current number of amphibian species: 5625 (May 22, 2004)

[AmphibiaWeb](#), a site inspired by global amphibian declines, is an online system that allows free access to information on amphibian biology and conservation.

[Related Projects](#)



AmphibiaWeb

Goals

Data

Products

Challenges

Responses

AmphibiaWeb - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address <http://elb.cs.berkeley.edu:8080/aw/declines/declines.html>

A m p h i b i a W e b

Worldwide Amphibian Declines: How big is the problem and what are the causes?

(April 26 2004)

Globally, over 200 amphibian species have experienced recent population declines, with reports of 32 species extinctions (Blaustein and Wake 1990, Alford and Richards 1999, Houlahan et al. 2000). Below, is a map showing all of the areas around the world where amphibian populations have either declined or species have gone extinct. In response to these recent declines, The [Global Amphibian Assessment \(GAA\)](#) was launched in 2000 with the aim of assessing all amphibians against the [IUCN Red List criteria](#). Once completed, the GAA will become the blueprint for amphibian conservation worldwide over the next decade and the results of the assessment will be made freely available on the Internet through the [IUCN Red List](#) and right here on AmphibiaWeb. In the mean time, AmphibiaWeb has compiled a list ([the AmphibiaWeb Watch List](#)) of extinct and threatened amphibian species from around the world.

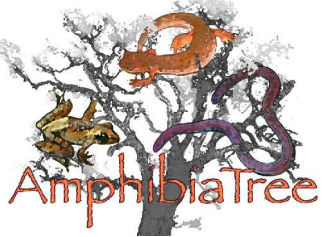
Distribution of Global Amphibian Declines

California Floristic Province: 2, 23
Mediterranean Basin: 3, 11
California: 10
Mesoamerica: 13, 3
Caribbean: 10, 2
Choco: 6, 18
Tropical Andes: 2
Central Chile: 3, 5
Atlantic Forest: 11, 6
Guinean Forests of West Africa: 4
Succulent Karoo: 11
Cape Floristic Province: 6
Caucasus: 3, 11
Mountains of South-Central China: 2
Indo-Burma: 2
Western Ghats & Sri Lanka: 3
Sundaland: 6
Madagascar & Indian Ocean Islands: 11
Philippines: 7, 17
Malacca: 1
Polynesia & Micronesia: 1
New Caledonia: 1
Southwest Australia: 23, 18
New Zealand: 1

● = Extinct, Missing or Critically Endangered
● = Additional Threatened (Endangered or Vulnerable)

Source: IUCN 2000, AmphibiaWeb, Hero J.-M. & L. Shoo, 2003. Chapter 7 in Amphibian Conservation, Smithsonian Press.
Background biodiversity hotspots map from Myers et al., 2000. Nature 403:853-858 c/o Conservation International.
Prepared by J.-M. Hero, April 2002.

Home
Search the Database
About Amphibians
Declines
Species Numbers
Amphibian Facts
Glossary
Amphibians in the News
Researchers
About AmphibiaWeb
Links
Discussion Board
Site Map



Tree of Life

Goals

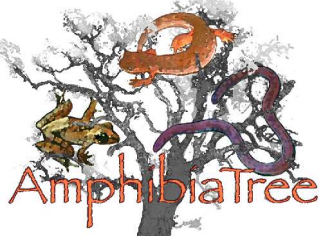
Data

Products

Challenges

Responses

- ❖ Adopt a data portal approach to web sites, in which the relevant data and information are queried from diverse databases (e.g., Tree of Life, AmphibiaWeb, and HerpNET) and displayed to fill the specific needs of the user.
- ❖ Use the Tree of Life database (www.tol.org) as the repository for new information about amphibian phylogeny.



Challenges

Goals

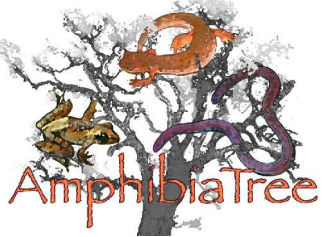
Data

Products

Challenges

~~Responses~~

- ❖ A sense of ownership of individual taxonomic groups
- ❖ Community perception about the concentration of resources
- ❖ Isolation of individual researchers from the larger community.



Responses

Goals

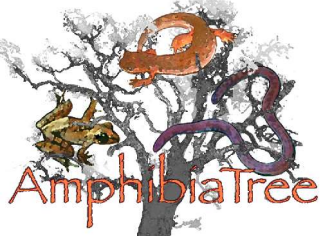
Data

Products

Challenges

Responses

- ❖ Community Workshops: Offer opportunities for training, exchange of ideas, and connection-building.
- ❖ Cooperation and Collaboration: Share resources and expertise.
- ❖ Open Source Phylogeny: Encourage an approach that promotes integrative data collection rather than a focus on one taxon.



Community Workshops

Goals

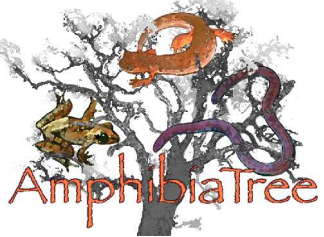
Data

Products

Challenges

Responses

- ❖ Norman, OK May 2004
- ❖ Austin, TX Dec 2004
 - Advanced Phylogenetics
 - Morphological Analysis
- ❖ Tampa, FL June 2005
- ❖ Stellenbosch July 2005



Cooperation and Collaboration

Goals

Data

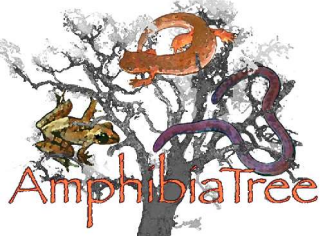
Products

Challenges

Responses

❖ Example: Sequence Give-Away

- Researchers can collect sequence data at no cost if they are willing to sample genes and taxa in a way that promotes a robust phylogeny.
- Data are co-owned, but the researcher has the first right of publication.
- Co-authorship is not expected, and consultation about analysis is available.



Open Source Software

Goals

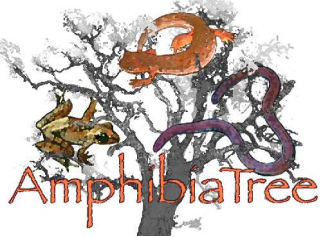
Data

Products

Challenges

Responses

- ❖ Open Source software is free in the sense of "liberated" rather than "costs nothing."
- ❖ All aspects of the software development and deployment are open to improvement.
- ❖ Open Source overturns intellectual property constraints. Intellectual "property" is something to be distributed rather than guarded.



Open Source Phylogeny

Goals

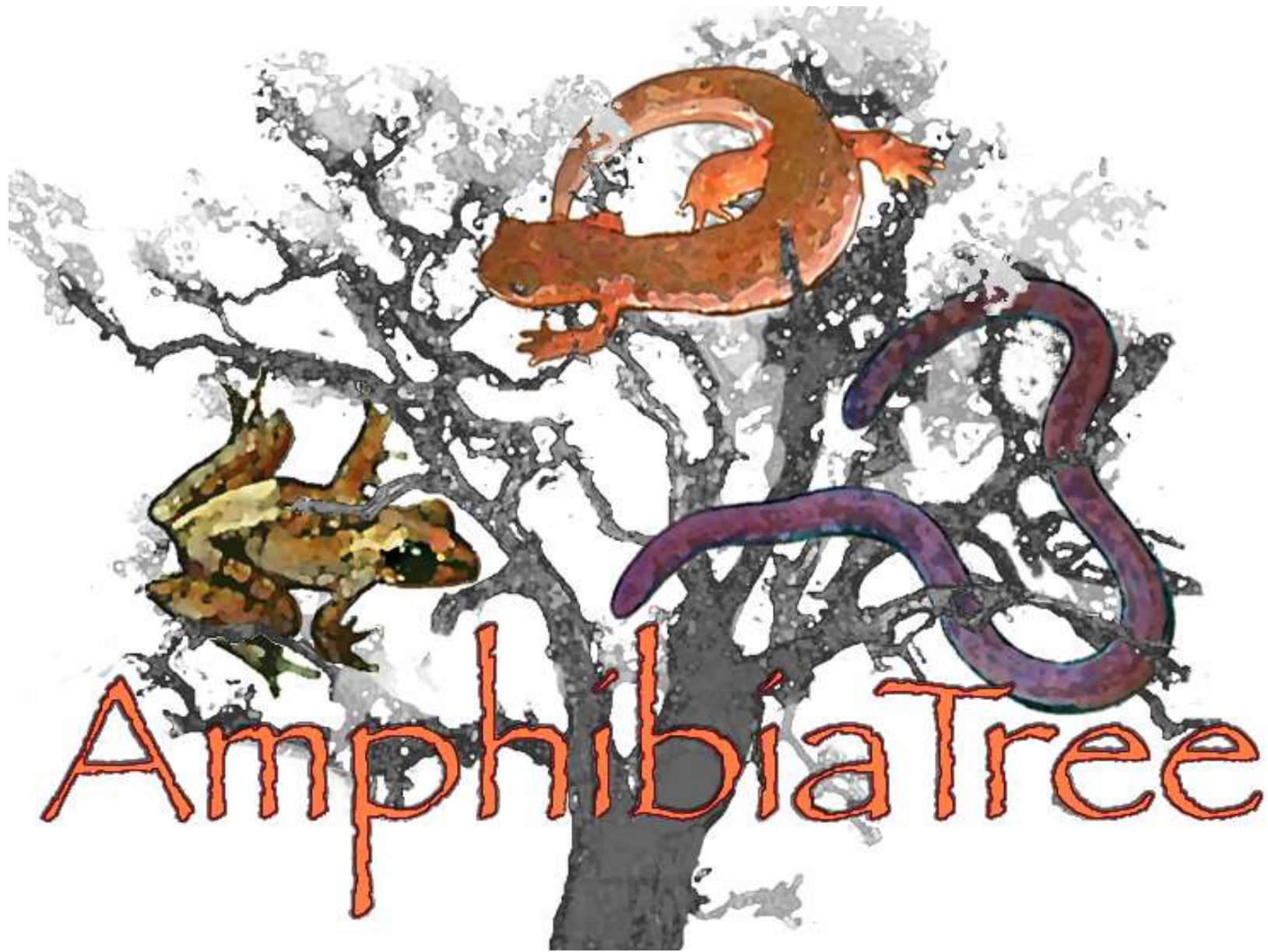
Data

Products

Challenges

Responses

- ❖ A phylogeny is akin to an operating system or software application. It should be a powerful tool for promoting comparative biology.
- ❖ Our phylogenies will be better if contributions (data and theory) are welcomed from all contributors, instead of a self-selected group.
- ❖ A taxon is not "owned" by a single research group. That is, the Tree of Amphibia should not be simply a compilation of smaller trees produced by individual groups.
- ❖ Rather, the goal (a robust phylogeny) is best realized by collaborative integration and synthesis of diverse datasets.



Amphibia Tree