Goals

"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

- 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

- Integration of Datasets
  - Biodiversity, Genomics, Evolutionary Morphology, Paleontology, Development

- Computational Biology
  - Tree Visualization
  - Visualization of Morphology

- Genomic Analysis
  - Secondary structure, gene order, etc.
Products

- 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, 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

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 1999, Alford and Richards 1999, Heithaus 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 meantime, AmphibiaWeb has compiled a list (the AmphibiaWeb Watch List) of extinct and threatened amphibian species from around the world.

Distribution of Global Amphibian Declines

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

Tree of Life

- 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

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

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

- 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

- 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.