

The Establishment of a Global Ranavirus Reporting System

By Amanda Duffus and Dede Olson

Amphibian declines on a global scale can no longer be pushed aside, nor can the causes behind them. Concerted efforts are now being made in a variety of different ways to understand the root causes of these declines, what their effects are, and how they interact. An area which has received much attention is infectious diseases, specifically emerging infections and the disease that they cause.

Currently, there are two major infections recognized to affect amphibian populations with potentially a global impact. Both *Batrachochytrium dendrobatids* (*Bd*), also known as the amphibian chytrid fungus, and ranavirus infections have been listed as notifiable infections/diseases of amphibians by the Office International des Epizooties (OIE, World Animal Health Organization).

Although ranavirus infections in amphibians have been known since the 1960s, infections were not associated with disease or death. It is not until relatively recently (~20 – 25 years) that ranaviruses began to emerge in wild and captive populations of amphibians resulting in large scale morbidity and mortality events in both anurans and urodeles of all life history stages. Since then, ranavirus detections have not only increased in geographic scope, but also relative to the number of species that are known to be affected. While this has potentially severe ramifications for amphibian populations, there has been relatively little coordination between researchers who are scattered around the globe to investigate the issues collectively.

The first major infectious disease to receive a great deal of worldwide attention has been *Batrachochytrium dendrobatids* (*Bd*). In 2007, a web database was established in cooperation with Imperial College, London and the US Forest Service to track the global distribution of *Bd*. This site has been a successful endeavor, with over 52,000 entries contributed by many different researchers around the globe (www.bd-maps.net) and has proved to be an invaluable resource for many different user groups.



Image provided by Jesse Brunner

We now hope to do a similar collaborative effort to document ranaviruses, which are also emerging infections in amphibians on a global scale. Currently, there is no centralized data base that monitors the distribution of ranaviruses, or collects other relevant information to infections and mortality events associated with the virus. The US Forest Service in partnership with Imperial College and Partners in Amphibian and Reptile Conservation (PARC) is hoping to develop such a reporting system and informational website. Our goal is to provide an informative, yet user friendly site. Now, we seek input from researchers, policymakers, and other potential users for their insights.

To streamline the process we are seeking responses to the following questions:

1. What capabilities would you like to see in a ranavirus reporting website/database?
2. How/if you would use the website/database?
3. What types of data would you like to see included, please indicate if they are necessary and/or useful in your view.
4. What are your concerns about the data that you provide and what possible pitfalls can you foresee?

Notes:

- To avoid potential misuse of this site, the release of data on sensitive species will be addressed.
- Although ranaviruses affect several other taxonomic groups, our current focus during the development of this reporting system will be on amphibians; we will discuss expansion of it to other taxa at a later time.

- Since there are many different types and strains of ranaviruses that are known to infect amphibians (and other taxonomic groups), molecular data will be incorporated into the data base to address viral phylogeny issues.

In order for this process to be completed in a timely manner, we ask that your replies be concise, constructive and returned to Dr. Amanda Duffus (aduffus@gdn.edu) or by post (address below) by June 24th, 2011, so that responses can be compiled and used by the Advisory Panel. The Advisory Panel consists of individuals from US Forest Service, Imperial College, PARC and other internationally recognized ranavirus experts.

This summer, the First International Symposium on Ranaviruses is being held during the Joint Meeting of Ichthyologists and Herpetologists (July 8, Minneapolis, MN, USA). This is the first time that an international gathering of ranavirus experts, who work on many different taxa, will be discussing the threat that this group of pathogens pose to the animals that they infect. The list of presenters at the symposium is truly international, containing speakers from 3 different continents, all recognized to be leading experts in their fields.

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