



THE GLOBAL RANAVIRUS REPORTING SYSTEM

Dede Olson¹, Amanda Duffus², Matthew Gray³, Debra Miller^{3,4} and Megan Hines⁵

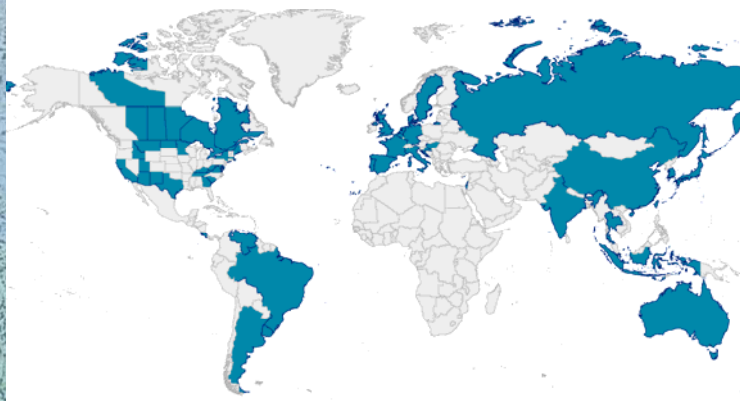
¹US Forest Service, PNW Research Station, Corvallis, OR, USA. ²Gordon State College, Barnesville, GA, USA. ³Center for Wildlife Health, University of Tennessee, Knoxville TN, USA. ⁴College of Veterinary Medicine, University of Tennessee, Knoxville, TN, USA. ⁵University of Wisconsin-Madison School of Veterinary Medicine, Madison, WI, USA



Why a Global Ranavirus Reporting System?

- Ranaviruses are **emerging pathogens** that affect **fish, reptiles, turtles and amphibians** on nearly a global scale (Figure 1; 1).
- There have been **countless** ranavirus-related die-off and disease events. (1).
- The disease caused by ranavirus infections can be quite severe (Figure 2).
- Mortality associated with ranavirus outbreaks can be >95%. (1)
- Ranaviruses are now considered as “**Notifiable Infections**” by the OIE (the World Organization for Animal Health). (2)
- The database www.bd-maps.net, which tracks the global distribution of *Batrachochytrium dendrobatidis* (*Bd*), has been an invaluable resource for scientists and natural resource managers. (3)
- We hope to provide a similar database that tracks the global distribution of ranaviruses to serve as an information portal to interface among scientists and managers.

Global Distribution of Ranaviruses



The dark-colored areas on this map represent the current known distribution of confirmed ranavirus infections in wild animals.

This map is likely far from complete. We hope that you will help us fill in the gaps.

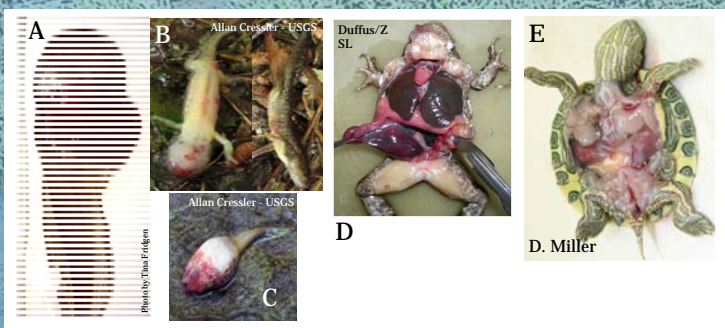


Figure 1. **A)** Wood Frog (*Lithobates sylvaticus*) tadpole with an abdominal hemorrhage caused by ranaviral disease. Photo: T. Fridgen. **B)** A Blue-spotted Salamander (*Ambystoma laterale*) larva with hemorrhage associated with ranaviral disease. Photo: A. Cresler. **C)** An American Bullfrog (*Lithobates catesbeianus*) tadpole with severe hemorrhages associated with ranaviral disease. Photo: A. Cresler. **D)** An adult Common Frog (*Rana temporaria*) with hemorrhages in the gastrointestinal tract caused by ranaviral disease. Photo: A. Duffus/ZSL. **E)** Juvenile Red-eared Slider (*Trachemys scripta elegans*) with abdominal edema and hemorrhages caused by ranavirus infection. Photo: D. Miller.

References:

- Miller, et al. (2011) *Viruses* 3:2351.
- OIE. Aquatic Animal Health Code 8.2 (2012).
- Olson, et al. (2013) *PLOS ONE* 8(2): e56802

How?

- The Global Ranavirus Reporting System will be located on the Wildlife Health Reporter (WHER) website at www.wher.org.
- The WHER website was originally developed by the Wildlife Data Integration Network (WDIN) and maintained by the University of Wisconsin – Madison School of Veterinary Medicine.
- WHER provides a database of animals with **observed infection/disease**, but also serves as an **alert system**.
- The basic structure of WHER will be modified to meet the needs of the Global Ranavirus Reporting System that will match the data management needs for the **collection, sharing, and notification** of cases of ranavirus infection and die-off events.
- The reporting system would also be linked to citizen reports in the public version of WHER to help identify locations that need further investigation.

What remains to be done?

- Finalizing the Global Ranavirus Reporting System website design with WHER
- Securing funding to implement WHER

Acknowledgements:

We would like to thank the scientists involved in the GRC for their helpful feedback on the original proposal and for their continued support in this endeavor. The Department of Biology, Gordon State College for funds in support of meeting attendance.

Who is building the system?

The following organizations have been working together to make this database a reality:

- Global Ranavirus Consortium (GRC)
- US Forest Service
- Southeast Partners in Amphibian and Reptile Conservation (SEPARC)
- Wildlife Health Event Reporter (WHER), University of Wisconsin