



McChesney, Gerry <gerry\_mcchesney@fws.gov>

## salamander study budget estimate

1 message

Vance Vredenburg <vancevredenburg@gmail.com>  
To: "McChesney, Gerry" <gerry\_mcchesney@fws.gov>

Tue, Jan 19, 2016 at 11:42 PM

Hi Gerry,

Sorry I've been so slow to get you an estimated budget. One thing that has recently changed is the new USFWS announcement about the ban on salamander trade (see message copied below).!

I'm not sure how familiar you are with this. I've been pretty involved in that my lab published a paper in Science in August showing some pretty scary predictions of what could happen if a new salamander pathogen (another chytrid fungus, this one called *Batrachochytrium salamandrivorans*) invaded the US (Yap, T., M. Koo, R.F. Ambrose, D.B. Wake and V.T. Vredenburg, 2015. Averting a biodiversity crisis. 2015. Science. Vol. 349 no. 6247 pp. 481-482 DOI: 10.1126/science.aab1052 ).

The new rule means that we will need a USFWS permit to ship salamanders from California to Colorado (it covers 201 species including about 55 native species).

For my other research projects, I am planning on submitting a permit application to FWS. I hope to get some help from you or others in the service on this.

I am very, very supportive of the rule. The writing is actually very good and all of the points are backed up by good science. I'm actually thrilled about it.!

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Here is my estimate for a budget to collect, test and ship the salamanders to Colorado.

Salamander collection in California

Estimated number of salamanders:

Arboreal salamander (*Anides lugubris*): up to 30

Ensatina salamander (*Ensatina eschscholzii xanthoptica*): 70-90 (we can adjust as needed)

Total estimated budget: \$5000

Estimated costs of labor, supplies, and travel (mostly time to capture salamanders) = \$2600

Estimated cost of disease diagnostics: \$20 per sample X 120 = \$2400

Methods: Vredenburg and assistants will collect animals, determine their infection status, house and feed them until a batch of at least 30 animals are ready. The animals will be mailed to Colorado via Fed EX for further study. Each animal will be captured by hand, placed in a small container with a lid, and will be housed without contact with other animals to ensure that the infection status of each animal will be known before the exposure experiment begins. Each animal will be tested for chytrid pathogens (*Batrachochytrium dendrobatidis* and *Batrachochytrium salamandrivorans*) in the Vredenburg Lab using a standard qPCR assay ((Boyle, et al., *Dis. Aquat. Organ.* **60**, 141-148 (2004); M. Blooi et al., *J. Clin. Microbiol.* **51**, 4173 (2013)). The Vredenburg lab routinely runs these tests on wild caught and captive amphibians to determine infection status.

**From:** Jewell, Susan [[susan\\_jewell@fws.gov](mailto:susan_jewell@fws.gov)]

**Sent:** Tuesday, January 12, 2016 10:11 AM

**To:** Susan Jewell

**Subject:** The Service is publishing a rule to list salamanders for Bsal

Good morning!

I would like to inform you of an important action by the U.S. Fish and Wildlife Service to help prevent a deadly

fungus from killing native salamanders. The Service is publishing an interim rule in the Federal Register tomorrow to list 201 salamander species as injurious wildlife under the Lacey Act. The fungus *Batrachochytrium salamandrivorans*, also known as Bsal or salamander chytrid, is carried on the skin of various salamander species. Bsal has caused major die-offs of salamanders in Europe and poses an imminent threat to U.S. native salamander populations. The fungus is not yet known to be found in the United States, and to help ensure it remains that way, the Service is publishing an interim rule that will take effect on January 28, 2016. At that time, the importation and interstate transportation of the listed species will be prohibited. The rule also opens a 60-day public comment period (please see the rule in the Federal Register for instructions on how to submit a public comment).

A pre-publication version of the interim rule is available today for public inspection at <https://www.federalregister.gov/articles/2016/01/13/2016-00452/injurious-wildlife-species-listing-salamanders-due-to-risk-of-salamander-chytrid-fungus>. Additional information including the news release, interim rule, draft economic analysis and regulatory flexibility analysis, and other materials are also available at <http://www.fws.gov/injuriouswildlife/salamanders.html>. Our webpage will link to the Federal Register document tomorrow when the interim rule is officially published.

Thank you for your time and concern in helping to prevent Bsal from impacting salamanders and the ecosystems they support in our nation. Please let me know if you have any questions.

Regards,  
Su

Susan Jewell, Injurious Wildlife Listing Coordinator  
U.S Fish and Wildlife Service  
MS: FAC  
5275 Leesburg Pike  
Falls Church, VA 22041-3803  
office 703-358-2416  
cell 703-402-7138  
fax 703-358-2487  
[susan\\_jewell@fws.gov](mailto:susan_jewell@fws.gov)

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Vance T. Vredenburg  
Associate Professor  
Department of Biology  
San Francisco State University  
1600 Holloway Ave.  
San Francisco, CA 94132, USA

Phone: 415-338-7296  
Email: [vancev@sfsu.edu](mailto:vancev@sfsu.edu)  
Office: HH754  
<http://biology.sfsu.edu/people/vance-vredenburg>  
<http://www.vredenburglab.com>