

California-Nevada Amphibian Populations Task Force

January 7-8, 2016

UC Davis Conference Center Ballroom
550 Alumni Lane (Alumni Ln and Old Davis Rd)
Davis, CA 95616

AGENDA

- Chair:** Dave Bradford, Las Vegas, NV
- Meeting Coordinator:** Jef Jaeger, School of Life Sciences, University of Nevada, Las Vegas
- Meeting Committee:** Sharon Lawler, Department of Entomology and Nematology; and Brian Todd, Department of Wildlife, Fish, and Conservation Biology; University of California, Davis, CA
- Meeting Sponsor:** UC Davis Department of Entomology and Nematology
- Registration Support:** Amphibian and Reptile Conservancy

Wednesday, January 6, 2016

- 6:30-9:00 pm **No Host Meet-and-Greet**, Sudwerk Restaurant and Brewery, 2001 2nd Street, Davis, CA 95618

Thursday, January 7, 2016

- 7:45-8:30 am **Registration and Refreshments**
- 8:30-8:45 am **Introduction and Announcements.** Dave Bradford and Sharon Lawler

Special Sessions: *Rana sierra*, *Rana muscosa*, and *Anaxyrus canorus* Conservation in the Sierra Nevada (sessions on Thursday and Friday mornings)

Special Session 1 – *Anaxyrus canorus* (mostly)

Moderator: Cathy Brown, USDA Forest Service, Stanislaus National Forest, Sonora, CA

- 8:45-8:50 am **Introduction to Special Sessions.** Cathy Brown
- 8:50-9:15 am **Current Status of *Rana sierrae*, *Rana muscosa*, and *Anaxyrus canorus* Conservation.** Mountain Yellow-legged Frog and Yosemite Toad Working Teams (presenters: Steve Detwiler^{1*}, and Cathy Brown^{2*}). ¹US Fish and Wildlife Service, Sacramento, CA; ²USDA Forest Service, Stanislaus National Forest, Sonora, CA. (25 min)

- 9:15-9:40 am **Spatial Transferability of Yosemite Toad (*Anaxyrus canorus*) Habitat Models across National Park Lands in the Sierra Nevada.** Steven Lee^{1*}, Matthew Brooks¹, Robert Klinger¹, and Steven Ostoja². ¹U.S. Geological Survey, Western Ecological Research Center-Yosemite Field Station, Oakhurst, CA; ²United States Forest Service, Sierra National Forest, Clovis, CA. (25 min)
- 9:40-9:55 am **Yosemite Toad (*Anaxyrus canorus* [= *Bufo canorus*]) Breeding Occupancy of Meadows in Yosemite and Kings Canyon National Parks, CA.** Steven Ostoja. Sierra National Forest, Clovis, CA. (15 min)
- 9:55-10:30 am **Break** (35 min)
- 10:30-10:55 am **Yosemite Toad Ecology: Insights from Long-Term Monitoring on Abundances, Demography, Movement, Habitat Usage, and the Effects of Drought.** Cathy Brown^{1*}, Stephanie Barnes², Christina Liang³, Kathryn K. Wilkinson¹, Lucas R. Wilkinson¹ and Carolyn Hunsaker³. ¹USDA Forest Service, Stanislaus National Forest, Sonora, CA, cathybrown@fs.fed.us; ²USDA Forest Service, Sierra National Forest, Fresno, CA; ³USDA Forest Service, Pacific Southwest Research Station, Albany, CA. (25 min)
- 10:55-11:20 am **An Evaluation of Wet Meadow Hydrogeomorphology for Sensitive Amphibian Species Habitat.** Sarah Yarnell^{1*}, Karen Pope², and Cathy Brown³. ¹Center for Watershed Sciences, University of California Davis, Davis, CA; ²Pacific Southwest Research Station, US Forest Service, Arcata, CA; ³US Forest Service, Stanislaus National Forest, Sonora, CA. (25 min)
- 11:20-11:45 am **Intra-Annual Trends in Reproductive Rates & Breeding Habitat Use of the Yosemite Toad (*Anaxyrus canorus*) in Yosemite National Park: Evidence of Drought Related Regional Reproductive Failure.** Rob Grasso¹, Matt Brooks², Molly Thompson^{1*}, Ninette Daniele¹, and Steven Lee². ¹Yosemite National Park, Resources and Management Science Division, El Portal, CA; ²US Geological Survey, Yosemite Field Station, El Portal, CA. (25 min)
- 11:45-12:10 am **Historical Isolation and Future Adaptation: Using Evolutionary Genomics to Conserve the Yosemite Toad.** Paul A. Maier^{1,2,3*}, Amy G. Vandergast³, Steven M. Ostoja², Andres Aguilar⁴, and Andrew J. Bohonak¹. ¹San Diego State University, San Diego, CA; ²US Geological Survey, Oakhurst, CA; ³US Geological Survey, San Diego, CA; ⁴California State University Los Angeles, Los Angeles, CA. (25 min)
- 12:10-1:40 pm **Lunch** (90 min)

General Session 1

Moderator: Brian Todd, Department of Wildlife, Fish, and Conservation Biology, University of California Davis

- 1:40-2:05 pm **Ecology of the California Red-legged Frog (*Rana draytonii*) in Coastal Dune Systems.** Patrick M. Kleeman^{1*} and Brian J. Halstead². ¹U.S. Geological Survey, Western Ecological Research Center, Point Reyes Field Station, Point Reyes, CA; ²U.S. Geological Survey, Western Ecological Research Center, Dixon Field Station, Dixon, CA. (25 min)

- 2:05-2:30 pm **An Open Population Approach to Estimating Breeding Female Amphibian Abundance from Replicated Egg Mass Counts.** Brian J. Halstead^{1*}, Patrick M. Kleeman², And Gary M. Fellers². ¹U.S. Geological Survey, Western Ecological Research Center, Dixon Field Station, Dixon, CA; ²U.S. Geological Survey, Western Ecological Research Center, Point Reyes Field Station, Point Reyes, CA. (25 min)
- 2:30-2:55 pm **Eradication of Invasive American Bullfrogs (*Lithobates catesbeianus*) in Yosemite Valley and the Planned Establishment of a Core California Red-legged Frog (*Rana draytonii*) Population.** Rob Grasso, Yosemite National Park, Resources and Management Science Division, El Portal, CA. (25 min)
- 2:55-3:20 pm **Predicting *Batrachochytrium dendrobatidis* Infection in Foothill Yellow-Legged Frogs (*Rana boylei*) in the Alameda Creek Watershed.** Andrea J. Adams^{1*}, Sarah J. Kupferberg², Steve Bobzien³, Marcia Grefsrud⁴, Mark Q. Wilber¹, Vance Vredenburg⁵, and Cheryl J. Briggs¹. ¹Department of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara, CA; ²Department of Integrative Biology, University of California, Berkeley, CA; ³East Bay Regional Park District, Oakland, CA; ⁴California Department of Fish and Wildlife, Bay Delta Region, Napa, CA; ⁵San Francisco State University, San Francisco, CA. (25 min)
- 3:20-3:50 pm **Break** (30 min)
- 3:50-4:15 pm **Giant Gartersnakes (*Thamnophis gigas*) Selectively Forage on Native Anurans, Despite High Abundance of Introduced Prey.** Julia S. M. Eersan.^{1*}, Brian J. Halstead², Erica L. Wildy², Michael L. Casazza², and Glenn D. Wylie². ¹California State University, East Bay, Hayward, CA; ²U.S. Geological Survey, Western Ecological Research Center, Dixon, CA. (25 min)
- 4:15-4:40 pm **Reduced Survival of California Red-legged Frog Larvae from Populations Co-occurring with Introduced Bullfrogs.** Rachel Anderson^{1*}, and Sharon Lawler². ¹Graduate Ecology Group and ²Department of Entomology and Nematology, University of California Davis, Davis, CA. (25 min)
- 4:40-5:05 pm **Modifying Canopy Shading in the Riparian Zone During Timber Harvest: Preliminary Results from Coastal Giant Salamander (*Dicamptodon tenebrosus*) Monitoring.** David A. Dimitrie, Green Diamond Resource Company, Korbelt, CA. David A. Dimitrie^{1*}, Ryan M. Bourque¹, Matt R. House¹, and Lowell V. Diller². ¹Green Diamond Resource Company, Korbelt, CA; ²Lowell Diller Environmental Consulting, McKinleyville, CA. (25 min)
- 5:05-5:10 pm **Announcements**

BANQUET

at the

UC Davis Conference Center Ballroom
(same place as meeting room)
550 Alumni Lane (Alumni Ln and Old Davis Rd)
Davis, CA 95616

Dinner is included with registration. A no-host bar will be available.

6:30-7:00 pm **Guests Arrive**

7:00-9:30 pm **Dinner and Presentation:**

**Amphibians at the Forefront of the Sixth Mass Extinction:
Crisis Biology in Action**

by

Vance T. Vredenburg

Associate Professor of Biology
San Francisco State University
San Francisco, California

Friday, January 8, 2016

7:45-8:30 am **Registration and Refreshments**

8:30-8:35 am **Announcements.** Dave Bradford

Special Sessions: *Rana sierra*, *Rana muscosa*, and *Anaxyrus canorus* Conservation in the Sierra Nevada (continued)

Special Session 2 – *Rana sierrae* and *Rana muscosa*

Moderator: Cathy Brown, USDA Forest Service, Stanislaus National Forest, Sonora, CA

8:35-9:00 am **Population Genetic Structure of the Endangered Sierra Nevada Yellow-legged Frog (*Rana sierrae*) in Yosemite National Park based on Multi-locus Nuclear Markers.** Thomas J. Poorten¹, Roland A. Knapp^{2*}, and Erica Bree Rosenblum¹. ¹Department of Environmental Science, Policy, and Management, University of California, Berkeley, CA; ²Sierra Nevada Aquatic Research Laboratory, Mammoth Lakes, CA. (25 min)

9:00-9:25 am **The Ecology of the Sierra Nevada Yellow-legged Frog (*Rana sierrae*) on the Lassen and Plumas National Forests.** Brendan Kavanagh^{1*}, Cathy Brown², and Sarah Yarnell¹. ¹Center for Watershed Sciences, University of California, Davis, CA; ²Stanislaus National Forest, USDA Forest Service, Sonora, CA. (25 min)

9:25-9:50 am **Disease Intervention and Captive-Rearing of Mountain Yellow-legged Frog Populations in Sequoia and Kings Canyon National Parks.** Roland A. Knapp¹, Thomas C. Smith², Daniel M. Boiano³, Isaac C. Chellman^{3*}, Victor Alm⁴, and Jessie Bushell⁵. ¹Sierra Nevada Aquatic Research Laboratory, University of California, Mammoth Lakes, CA; ²University of California, Santa Barbara, CA; ³Sequoia and Kings Canyon National Parks, National Park Service, Three Rivers, CA; ⁴Oakland Zoo, Oakland, CA; ⁵San Francisco Zoo, San Francisco, CA. (25 min)

9:50-10:25 am **Break** (35 min)

General Session 2

Moderator: Roland Knapp, Sierra Nevada Aquatic Research Laboratory, University of California, Mammoth Lakes, CA

10:25-10:50 am **A Novel Conceptual Model Predicts Disease Risk in Amphibians.** Brian D. Todd^{*}, A. Justin Nowakowski, Evan A. Eskew, and Jonathan P. Rose. Department of Wildlife, Fish, and Conservation Biology, University of California, Davis, Davis, CA. (25 min)

10:50-11:15 am **An Overview of Recent Foothill Yellow-Legged Frog (*Rana boylei*) Research in Northern California.** Clara A. Wheeler^{*} and Hartwell H. Welsh, Jr. (25 min)

- 11:15-11:40 am **The Effect of Climate and Habitat Use Patterns on Chytrid Infection Dynamics in Remnant Cascade Frog (*Rana cascadae*) Populations.** Karen L. Pope^{1*}, Jonah Piovia-Scott², Monty D. Larson³, and Garth Hodgson¹. ¹US Forest Service, Pacific Southwest Research Station, Arcata, CA; ²School of Biological Sciences, Washington State University, Vancouver, WA; ³California Department of Fish and Wildlife, Northern Region, Timberland Conservation Planning, Eureka, CA. (25 min)
- 11:40-12:05 pm **Translocation of California Red-legged Frog to Restored Critical Habitat, Solano County: Methods, Challenges, and Preliminary Results.** Rob Schell, WRA, Inc., 2169 East Francisco Blvd. Suite G., San Rafael, CA 94901. (25 min)
- 12:05-1:35 pm **Lunch** (90 min)

General Session 3

Moderator: Sharon Lawler, Department of Entomology and Nematology, University of California Davis

- 1:35-2:00 pm **Ecological Consequences of Disease-driven Decline of Mountain Yellow-legged Frogs (*Rana muscosa* and *R. sierrae*).** Thomas C. Smith^{1*}, Roland A. Knapp², and Cheryl J. Briggs¹. ¹Department of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara, Santa Barbara, CA; ²Sierra Nevada Aquatic Research Laboratory, University of California, Mammoth Lakes, CA. (25 min)
- 2:00-2:25 pm **Effects of Season on Ability to Detect Coastal Tailed Frogs (*Ascaphus Truei*) Using an eDNA Approach.** Lauren M. Smith*, and Sharyn Marks. Department of Biological Sciences, Humboldt State University, Arcata, CA. (25 min)
- 2:25-2:50 pm **Jump Back to the Santa Monica Mountains: Project Update for the California Red-legged Frog (*Rana draytonii*) Translocation.** Kathleen S. Delaney^{1*}, Mark Mendelsohn^{1,2}, and Seth P. D. Riley¹. ¹National Park Service, Santa Monica Mountains National Recreation Area, Thousand Oaks, CA; ²Mountains Restoration Trust, Calabasas, CA. (25 min)
- 2:50-3:05 pm **Using the Endangered Species Act to Protect Rare Amphibians and Reptiles in California and Nevada.** Jenny Loda^{1*}, and Collette Adkins². ¹Center for Biological Diversity, Oakland, CA; ²Center for Biological Diversity, Minneapolis, MN. (15 min)
- 3:05-3:30 pm **Break** (25 min)
- 3:30-3:55 pm **Invasive Species Removal Increases Threatened California Red-Legged Frog Abundance and Recruitment: Insights into Post-Invasion Restoration.** Richard Kim^{1,2*}, Brian J. Halstead², Eric J. Routman¹, Michael L. Casazza², and Julie Andersen³. ¹Department of Biology, San Francisco State University, San Francisco, CA; ²U.S. Geological Survey, Western Ecological Research Center, Dixon Field Station, Dixon, CA; ³Midpeninsula Regional Open Space District, Los Altos, CA. (25 min)

- 3:55-4:20 pm **Assessing the Relict Leopard Frog to Inform the Upcoming ESA Listing Decision.** Jef R. Jaeger^{1*}, Rebeca Rivera¹, Michael Burroughs², Jon C. Sjoberg³, Ross D. Haley⁴, and Michael J. Sredl⁵. ¹School of Life Sciences, University of Nevada, Las Vegas, NV; ²U.S. Fish and Wildlife Service, Las Vegas, NV; ³Fisheries Division, Nevada Department of Wildlife, Reno, NV; ⁴National Park Service, Lake Mead National Recreation Area, Boulder City, NV; ⁵Arizona Game and Fish Department, Phoenix, AZ. (25 min)
- 4:20-4:45 pm **A Questionable Role for Amphibian Chytrid Fungus in the Decline of the Relict Leopard Frog.** Jef R. Jaeger¹, Rebeca Rivera¹, Anthony Waddle^{1*}, D. Tyler Harrison¹, Silas Ellison², Matthew J. Forrest³, Vance T. Vredenburg², and Frank van Breukelen¹. ¹School of Life Sciences, University of Nevada, Las Vegas, NV; ²Department of Biology, San Francisco State University, San Francisco, CA; ³Scripps Institution of Oceanography, La Jolla, CA. (25 min)
- 4:45-4:55 pm **Announcements, Discussion of Future Meeting Venues, and Closing Remarks.** Dave Bradford

Saturday, January 9, 2016

- 8:30-1:00 pm **Field Trip to the UC Davis Quail Ridge Reserve.**
- Trip will be guided by Dr. Brian Todd of UC Davis. Quail Ridge Reserve is a peninsula on the edge of the Coast Range that juts into Berryessa Reservoir about 30 minutes west of the UC Davis campus. Several amphibian species are commonly found there, including: Western Toads, Pacific Chorus Frogs, California Newts, Slender Salamanders, and Ensatinas. Sharp-tailed Snakes are occasionally found in January as well as other reptiles, and there is a chance of seeing amphibians less common to the area. Attendees will need to sign a standard liability waiver to participate in the field trip.
- Some Details:
1. All participants will need to sign a liability waiver AHEAD of the trip.
 2. We'll leave Davis at 8:30 am and arrive at Quail Ridge at 9:00 am. We will need people to carpool due to limited parking space at the reserve.
 3. We can plan to leave Quail Ridge at 12:30 pm to return to Davis at 1:00 pm.
 4. Participants should be prepared for a strenuous uphill hike after the leisurely downhill one. We will walk a route and check cover boards and also inspect a full breeding pond that may have newts and possibly *Pseudacris* in it.
 5. Participants should dress in layers. It is forecast to be quite cold but the hike will likely make you sweat and warm up.
 6. The field station at Quail Ridge is currently under renovation, so restrooms will be portapot toilets.
 7. People should bring snacks. We will pass through the small town of Winters, so on the return trip you could stop at Subway if you want a quick sandwich.
 8. Driving directions will be provided. Some may choose to meet at Quail Ridge at 9:00 am rather than meeting in Davis.

POSTERS

All Day, Thursday and Friday

The Sierra Madre Yellow-legged Frog (*Rana muscosa*), Moving Forward. Adam R. Backlin^{1*}, Elizabeth A. Gallegos¹, and Robert N. Fisher². ¹U.S. Geological Survey, Western Ecological Research Center, Santa Ana, CA; ²U.S. Geological Survey, Western Ecological Research Center, San Diego, CA.

Using Genetic Tools to Investigate Distribution and Connectivity of Two Sierra Nevada Amphibians, *Rana sierrae* and *Rana boylei*. Mallory E. Bedwell and Caren S. Goldberg. School of the Environment, Washington State University, Pullman, WA.

Foothill Yellow-legged Frog and Local Gravel Mining: Creative Coexistence. Emily C. Eppinger^{1*}, Bernadette Bezy¹, and Jeff Hansen². ¹Stantec Consulting Services Inc., Nevada City, CA; ²Hansen Bros. Enterprises, Grass Valley, CA.

An Issue of Life or Death: The Use of Environmental DNA to Detect Viable Individuals in Wilderness Restoration and Management. Colleen Kamoroff*, and Caren S. Goldberg. School of the Environment, Washington State University, Pullman, WA.

Coastal Tailed Frog (*Ascaphus truei*) Nest Sites and Microhabitat Associations in the Redwood Timberlands of Northern California. Matt R. Kluber*, Ryan M. Bourque, and David A. Dimitrie. Green Diamond Resource Co., Korb, CA.

Assessing the Need for Endangered Species Act Protection of the Foothill Yellow-Legged Frog (*Rana boylei*): What Do Breeding Censuses Indicate? Ryan Peek¹ and Sarah Kupferberg². ¹Center for Watershed Sciences, University of California, Davis, CA; ²Questa Engineering, Point Richmond, CA.

Lexicon of Love: Vocalizations in Multiple Populations of *Rana boylei*. Courtney Silver, Department of Biological Sciences, California State University, Chico, CA.

Environmental DNA Sampling as an Alternative to Traditional Sampling Methods to Determine Occupancy of Stream-associated Amphibians in Headwater Streams. Hart H. Welsh Jr.¹, Adam K. Cummings^{1*}, Caren S. Goldberg². ¹US Forest Service, Pacific Southwest Research Station, Arcata, CA; ²School of the Environment, Washington State University, Pullman, WA.

Getting Them Past the Bottleneck: Report on Two Salamander Rescue Rearing Pilot Projects. Mike Westphal^{1*}, Diane Kodama², and Christopher Caris². ¹US Bureau of Land Management, Central Coast Field Office, Hollister, CA; ²US Fish and Wildlife Service, Aptos, CA.

Feral *Xenopus laevis*: A Source or Sink for Bd? Emily A. Wilson^{1*}, Tom L. Dudley², and Cherie J. Briggs¹. ¹Department of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara, CA; ²Marine Science Institute, University of California, Santa Barbara, CA.

* Indicates presenter in multi-authored talks or posters