

# California-Nevada Amphibian Populations Task Force

January 9-10, 2020

San Diego Natural History Museum (The 'Nat')  
(Use North Entrance)  
1788 El Prado  
San Diego, CA 92101

## AGENDA

- Chair:** Dave Bradford, Las Vegas, NV
- Meeting Coordinator:** Jef Jaeger, School of Life Sciences, University of Nevada, Las Vegas
- Local Organizers:** Brad Hollingsworth, San Diego Natural History Museum  
Frank Santana, San Diego Natural History Museum  
Robert Fisher, USGS Western Ecology Research Center, San Diego
- Meeting Sponsor:** San Diego Natural History Museum
- Parent Organization:** Amphibian and Reptile Conservancy

### Wednesday, January 8, 2020

6:30-9:00 pm **Informal Non-hosted Meet-and-Greet:** Panama 66, 1450 El Prado, in Balboa Park.

### Thursday, January 9, 2020

- 7:45-8:30 am **Registration and Refreshments**
- 8:30-8:45 am **Introduction and Announcements:** Dave Bradford
- 8:45-8:55 am **Welcome to SDNHM:** Judy Gradwohl, CEO, San Diego Natural History Museum

### **Session 1**

- Moderator:** Bob Hansen, Herpetological Review, Clovis, CA.
- 8:55-9:15 am **Dam Removal: Mitigating Impacts and Monitoring the Population Response of Foothill Yellow-legged Frogs.** Sarah Kupferberg<sup>1\*</sup> and Patrick Higgins<sup>2</sup>.  
<sup>1</sup>Questa Engineering, Point Richmond, CA, skupferberg@gmail.com; <sup>2</sup>Eel River Recovery Project, Loleta, CA (20 min).

- 9:15-9:35 am **The Long and Winding Road Toward Recovering Endangered Mountain Yellow-legged Frogs in the Southern Sierra Nevada.** Danny M. Boiano\* and Adam M. Fuest. National Park Service, Sequoia and Kings Canyon National Parks, Three Rivers, CA, danny\_boiano@nps.gov (20 min).
- 9:35-9:55 am **Life History Variation of the Coastal Tailed Frog (*Ascaphus truei*) Across an Elevational Gradient in the Trinity Alps Wilderness, CA.** A. D. Macedo<sup>1,3\*</sup>, J. D. Demianew<sup>2,3</sup>, J. O. Reiss<sup>1,2</sup>, and J. M. Garwood<sup>3</sup>. <sup>1</sup>Department of Biological Sciences, Humboldt State University Arcata, CA, adm566@humboldt.edu; <sup>2</sup>Department of Wildlife, Humboldt State University Arcata, CA; <sup>3</sup>California Department of Fish and Wildlife, Arcata, CA (20 min).
- 9:55-10:30 am **Break** (35 min).
- 10:30-10:50 am **A New Road Crossing Structure for Small Animals: Case Study with the Yosemite Toad.** Cheryl S. Brehme<sup>1\*</sup>, Stephanie Barnes<sup>2\*</sup>, and Robert Fisher<sup>1</sup>. <sup>1</sup>U. S. Geological Survey, Western Ecological Research Center, San Diego, CA, cbrehme@usgs.gov; <sup>2</sup>District Fisheries, Sierra National Forest, U.S. Forest Service, Prather, CA (20 min).
- 10:50-11:10 am **California Red-Legged Frog (*Rana draytonii*) Pond Construction and Maintenance in Baja California, Mexico.** Anny Peralta-Garcia<sup>1\*</sup>, Jorge H. Valdez-Villavicencio<sup>1</sup>, Bradford D. Hollingsworth<sup>2</sup>, Frank E. Santana<sup>2</sup>, Jeff Alvarez<sup>3</sup>, and Jeffery Wilcox<sup>4</sup>. <sup>1</sup>Fauna del Noroeste, Ensenada, Baja California, Mexico, info@faunadelnoroeste.org; <sup>2</sup>San Diego Natural History Museum, San Diego, CA; <sup>3</sup>The Wildlife Project, Sacramento, CA; <sup>4</sup>Sonoma Mountain Preservation Foundation, Sonoma, CA (20 min).
- 11:10-11:45 am **Beyond an Annual Meeting: A Discussion about Engaging in Amphibian Conservation Outside of January.** Ryan Peek. Center for Watershed Sciences, University of California, Davis, CA (35 min).
- 11:45-1:35 pm **Lunch** (1 hour, 50 minutes)

## Session 2

- Moderator:** Cheryl S. Brehme, U.S. Geological Survey, Western Ecological Research Center, San Diego, CA.
- 1:35-1:55 pm **Annual Amphibian Update for California Red-legged Frog, American Bullfrog, Yosemite Toad, and the Sierra Nevada Yellow-legged Frog in Yosemite National Park.** Rob L. Grasso\* and Colleen Kamoroff. Resources Management and Science Division, Yosemite National Park, El Portal, CA, rob\_grasso@nps.gov (20 min).

- 1:55-2:15 pm **To Treat or Not to Treat: Disease Considerations for a California Red-legged Frog Conservation Introduction.** Andrea J. Adams<sup>1,2\*</sup>, Rob L. Grasso<sup>1</sup>, Jessie Bushell<sup>3</sup>, Andrea J. Jani<sup>4</sup>, and Mary H. Toothman<sup>5</sup>. <sup>1</sup>Resources Management and Science Division, Yosemite National Park, El Portal, CA, andreajoyadams@gmail.com; <sup>2</sup>Earth Research Institute, University of California, Santa Barbara, Santa Barbara, CA; <sup>3</sup>San Francisco Zoo, San Francisco, CA; <sup>4</sup>Department of Oceanography, University of Hawai'i at Manoa, Honolulu, HI; <sup>5</sup>Department of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara, CA (20 min).
- 2:15-2:35 pm **Chiricahua Leopard Frog Conservation in Arizona: Status and Challenges.** Audrey K. Owens<sup>1\*</sup>, Catherine L. Crawford<sup>2</sup>, and David H. Hall<sup>3</sup>. <sup>1</sup>Terrestrial Wildlife Branch, Arizona Game and Fish Department, Phoenix, AZ, aowens@azgfd.gov; <sup>2</sup>Arizona Ecological Services Office, U.S. Fish and Wildlife Service, Tucson, AZ; <sup>3</sup>School of Natural Resources and the Environment, University of Arizona, Tucson, AZ (20 min).
- 2:35-2:55 pm **Effects of Wildfire on a Lentic-breeding Amphibian Assemblage.** David G. Cook<sup>1\*</sup> and Marc P. Hayes<sup>2</sup>. <sup>1</sup>Santa Rosa, CA; <sup>2</sup>Science Division, Washington Department of Fish and Wildlife, Olympia, WA (20 min).
- 2:55-3:25 pm **Break** (30 min). Poster session during break.
- 3:25-3:45 pm **Research for Restoration and Recovery of a Protected Species: Results of Management Actions for the Southern Western Pond Turtle (*Emys pallida*) in San Diego.** Chris W. Brown<sup>1\*</sup>, Robert N. Fisher<sup>1</sup>, and Thomas C. Owens<sup>2</sup>. <sup>1</sup>San Diego Field Station – San Diego Office, USGS Western Ecological Research Center, San Diego, CA, cwbrown@usgs.gov; <sup>2</sup>San Diego Zoo Global (20 min).
- 3:45-4:05 pm **A Geospatial Tool to Estimate the Reproductive Value of Habitat for the California Tiger Salamander and its Implications for Mitigation Practices.** Rachel Henry<sup>1\*</sup>, Alexander Fremier<sup>2</sup>, and Christopher Searcy<sup>3</sup>. <sup>1</sup>Ventura Fish and Wildlife Office, U.S. Fish and Wildlife Service, Ventura, CA, rachel\_henry@fws.gov; <sup>2</sup>School of the Environment, Washington State University, Pullman, WA; <sup>3</sup>Department of Biology, University of Miami, Coral Gables, FL (20 min).
- 4:05-4:25 pm **Environmental Training in Captivity Impacts Morphology, Performance, and Post-release Success of Reintroduced Endangered Mountain Yellow-Legged Frogs (*Rana muscosa*).** Talisin T. Hammond\*, Leah E. Jacobs, Michelle J. Curtis, Bailey A. McCormick, Ronald R. Swaisgood, and Debra M. Shier. San Diego Zoo Institute for Conservation Research, Escondido, CA, thammond@sandiegozoo.org (20 min).

4:25-4:45 pm **Population Genomics of California Amphibians and How it Informs Conservation.** H. Bradley Shaffer\*, Erin Toffelmier, Evan McCartney-Melstad, and Kevin Neal. Department of Ecology and Evolutionary Biology and La Kretz Center for California Conservation Science, UCLA, Los Angeles, CA, brad.shaffer@ucla.edu (20 min).

4:45-5:05 pm **The Mystery of Whitewater Canyon: A Tale of Survival for the Declining California Red-legged Frog *Rana draytonii* in Southern and Baja California.** Jonathan Q. Richmond\*, Dustin A. Wood, Adam R. Backlin, Elizabeth A. Gallegos, Anny Perralta-García, Jorge H. Valdez-Villavicencio, and Robert N. Fisher. U.S. Geological Survey, Western Ecological Research Center, San Diego, CA (20 min).

### AN EVENING AT ‘The NAT’

5:30-9:00 pm Finger food (e.g., sandwiches, wraps, salad), beverages, and no-host bar. Food and a complementary beverage are included with registration. The 2<sup>nd</sup> floor of the museum will be open for exploration.

7:00 pm Invited Presentation:

### **Herpetological Case Studies to Encourage Biologists: The Art of Staying Positive in Our Current World**

**Kim Gray, Ph.D.**  
Curator of Herpetology and Ichthyology  
San Diego Zoo Global

**Friday, January 10, 2020**

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

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

### **Session 3**

**Moderator:** David Cook, Sonoma County Water Agency, Santa Rosa, CA.

8:35-8:55 am **Environmental DNA (eDNA) Sampling as a Method to Detect Rare or Elusive Aquatic Herpetofauna: Two Case Studies.** Rob Schell<sup>1\*</sup>, Patricia Valcarcel<sup>1</sup>, and Cheryl Dean<sup>2</sup>. <sup>1</sup>WRA, Inc., San Rafael, CA, schell@wra-ca.com; <sup>2</sup>GeniDaqs, West Sacramento, CA (20 min).

- 8:55-9:15 am **An Update on the Center for Biological Diversity's Work to Protect Amphibians in California and Nevada.** Jenny Loda. Center for Biological Diversity, Oakland, CA, [jloda@biologicaldiversity.org](mailto:jloda@biologicaldiversity.org) (20 min).
- 9:15-9:35 am **Second Generation Camera Trap (HALT-2) with Innovative Methods for Monitoring Amphibians, Reptiles and Large Invertebrates.** Michael T. Hobbs<sup>1\*</sup> and Cheryl S. Brehme<sup>2</sup>. <sup>1</sup>Wildlife Ecologist, Technologist, San Jose, CA, [mhobbs2928@gmail.com](mailto:mhobbs2928@gmail.com); <sup>2</sup>U.S. Geological Survey, Western Ecological Research Center, San Diego, CA (20 min).
- 9:35-9:55 am **How Do We Determine When a Cryptic Species is Extirpated versus Not Detectible? The Case of the Desert Slender Salamander (*Batrachoseps aridus*).** Robert N. Fisher<sup>1\*</sup>, Todd Esque<sup>2</sup>, Adam R. Backlin<sup>3</sup>, and Elizabeth A. Gallegos<sup>3</sup>. <sup>1</sup>San Diego Field Station – San Diego Office, USGS Western Ecological Research Center, San Diego, CA, [rfisher@usgs.gov](mailto:rfisher@usgs.gov); <sup>2</sup>Henderson Field Station, USGS Western Ecological Research Center, Henderson, NV; <sup>3</sup>Santa Ana Substation, USGS Western Ecological Research Center, Santa Ana, CA (20 min).
- 9:55-10:25 am **Break** (30 min)
- 10:25-10:45 am **An Empirical Comparison of the Efficiency of Time-to-Detection Occupancy Methods to Double-observer and Metapopulation Designs.** Brian J. Halstead<sup>1</sup>, Jonathan P. Rose<sup>2</sup>, and Patrick M. Kleeman<sup>3\*</sup>. <sup>1</sup>U.S. Geological Survey, Western Ecological Research Center, Dixon Field Station, Dixon, CA; <sup>2</sup>U.S. Geological Survey, Western Ecological Research Center, Santa Cruz Field Station, Santa Cruz, CA; <sup>3</sup>U.S. Geological Survey, Western Ecological Research Center, Point Reyes Field Station, Point Reyes Station, CA (20 min).
- 10:45-11:05 am **A Fungus Among Us: A Novel Threat to Western Pond Turtles.** Jessie B. Bushell<sup>1\*</sup> and Katherine H. Haman<sup>2</sup>. <sup>1</sup>San Francisco Zoo, San Francisco, CA; <sup>2</sup>Washington Department of Fish and Wildlife, Olympia, WA (20 min).
- 11:05-11:25 am **What is the Best Available Science? Conservation Status of the Inyo Mountains Salamander, *Batrachoseps campi*.** Adam G. Clause<sup>1\*</sup>, Christopher J. Norment<sup>2</sup>, Nicholas G. Buckmaster<sup>3</sup>, Erin Nordin<sup>4</sup>, and Robert W. Hansen<sup>5</sup>. <sup>1</sup>Natural History Museum of Los Angeles County, Los Angeles, CA, [adamclause@gmail.com](mailto:adamclause@gmail.com); <sup>2</sup>The College at Brockport, State University of New York, Brockport, NY; <sup>3</sup>California Department of Fish and Wildlife, Bishop, CA; <sup>4</sup>Los Angeles Department of Water & Power, Bishop, CA; <sup>5</sup>Museum of Vertebrate Zoology, Berkeley, CA (20 min).
- 11:25-11:45 am **Status of the Relictual Slender Salamander (*Batrachoseps relictus*): One of California's Rarest Amphibians.** Robert W. Hansen. Museum of Vertebrate Zoology, University of California, Berkeley, Berkeley, CA (20 min).

11:45-1:35 pm **Lunch** (1hour, 50 minutes)

#### Session 4

**Moderator:** Jeny Loda, Center for Biological Diversity, Oakland, CA.

1:35-1:55 pm **Rediscovery and Status of the Santa Lucia Salamander *Batrachoseps minor*.** Samuel S. Sweet. Department of Ecology, Evolution, and Marine Biology, University of California, Santa Barbara, CA (20 min).

1:55-2:15 pm **Resurveys for Foothill Yellow-legged Frog, *Rana boylei*, in the Southern Diablo Range.** Michael F. Westphal\* and Emmeleia Nix. US Bureau of Land Management, Marina, CA; mwestpha@blm.gov (20 min).

2:15-2:35 pm **Slender Salamanders Are Not All the Same: Ecological and Morphological Evolution in *Batrachoseps*.** Christopher J. Evelyn. Earth Research Institute & EEM Biology, University of California Santa Barbara, Santa Barbara, CA (20 min).

2:35-2:55 pm **Twenty Years of Mark-recapture Monitoring of the Amargosa Toad.** Kevin Guadalupe<sup>1\*</sup>, Brandon Senger<sup>1</sup>, Ron Kegerries<sup>2</sup>, Ron Rogers<sup>2</sup>, Brandon Albrecht<sup>2</sup>, and Jef Jaeger<sup>3</sup>. <sup>1</sup>Nevada Department of Wildlife, Las Vegas, NV, kguadalupe@ndow.org; <sup>2</sup>BIO-WEST, Logan, UT; <sup>3</sup>University of Nevada Las Vegas, Las Vegas, NV (20 min).

2:55-3:20 pm **Break** (25 min)

3:20-3:40 pm **Department of Defense Partners in Amphibian and Reptile Conservation (DoD PARC) Summary and Updates.** Robert E. Lovich<sup>1\*</sup> and Chris Petersen<sup>2</sup>. <sup>1</sup>Naval Facilities Engineering Command Southwest, US Navy, San Diego, CA; <sup>2</sup>Naval Facilities Engineering Command Atlantic, US Navy, Norfolk, VA (20 min).

3:40-4:00 pm **Evaluating Reintroductions of Sierra Nevada Yellow-legged Frogs (*Rana sierrae*) to Streams.** Cathy Brown<sup>1\*</sup>, Neil Keung<sup>2</sup>, Colin Dillingham<sup>3</sup>, Sarah Mussulman<sup>4</sup>, Jessie Bushell<sup>5</sup>, Rahel Sollmann<sup>6</sup>, Justin Nowakowski<sup>6</sup>, Sarah Yarnell<sup>2</sup>, Brian D. Todd<sup>6</sup>, and Sharon P. Lawler<sup>7</sup>. <sup>1</sup>Stanislaus National Forest, USDA Forest Service, Sonora, CA, cathy.brown@ usda.gov; <sup>2</sup>Center for Watershed Sciences, University of California, Davis, CA; <sup>3</sup>Plumas National Forest, USDA Forest Service, Quincy, CA; <sup>4</sup>California Department of Fish and Wildlife, Rancho Cordova, CA; <sup>5</sup>San Francisco Zoological Society, San Francisco, CA; <sup>6</sup>Wildlife, Fish, and Conservation Biology, University of California, Davis, CA; <sup>7</sup>Department of Entomology and Nematology, University of California, Davis, CA (20 min).

- 4:00-4:20 pm **The Co-Occurrence of an At-risk Reptile (*Thamnophis sirtalis*) and an Invasive Amphibian (*Lithobates catesbeianus*) in the South Coast Bioregion: Stranger Danger or Binging on Bullfrogs?** Edward L. Ervin<sup>1\*</sup> and Clark R. Mahrtdt<sup>2</sup>. <sup>1</sup>Merkel & Associates, Inc., San Diego, CA, eervin@merkelinc.com; <sup>2</sup>San Diego Natural History Museum, San Diego, CA (20 min).
- 4:20-4:40 pm **Synthesis of 20 Years of Southern California Stream Survey Data into a Macrofaunal Index of Biotic Integrity for Identifying Management Options Across Watersheds.** Robert N. Fisher<sup>1\*</sup>, Adam Backlin<sup>2</sup>, Cheryl Brehme<sup>1</sup>, Christopher Brown<sup>1</sup>, Denise Clark<sup>1</sup>, Katy Delaney<sup>3</sup>, Elizabeth Gallegos<sup>2</sup>, Stacy Hathaway<sup>1</sup>, Tritia Matsuda<sup>1</sup>, Jordyn Mulder<sup>1</sup>, Bob Packard<sup>4</sup>, Emily Perkins<sup>1</sup>, Carlton Rochester<sup>1</sup>, Jeff Tracey<sup>1</sup>, and Elise Watson<sup>1</sup> (authors alphabetic except presenter). <sup>1</sup>U.S. Geological Survey, Western Ecological Research Center, San Diego, CA, rfisher@usgs.gov; <sup>2</sup>U.S. Geological Survey, Western Ecological Research Center, Santa Ana, CA; <sup>3</sup>Santa Monica Mountains NRA, National Park Service, Thousand Oaks, CA; <sup>4</sup>Western Riverside County MSHCP, Biological Monitoring Program, Riverside, CA (20 min).
- 4:40-4:45 pm **Announcements and Closing Remarks.** Dave Bradford.

### **Saturday Field Trip, January 11, 2019 (Optional)**

Join us for a trip to explore two very distinct ecosystems that support varied amphibian species. We will start with a vernal pool habitat utilized by a number of amphibian species for reproduction. We will discuss our thoughts on upland needs for these species with local land managers on site and possibly see many species of reptiles also. Next, we will head north and to a higher elevation woodland forest to look for plethodontid lungless salamanders along one of the few true perennial creeks in San Diego. A vehicle will be required to access the field sites and we will provide limited seating for people willing to carpool. Participants interested in a short day can join for the first part and if you are in for the entire day, please bring a lunch and plan for an approximately eight-hour day. More details will be provided at the meeting. Below is the approximate schedule. These are not sites visited on previous APTF trips to San Diego.

- 8:30-11:30 am **Local Vernal Pool Habitat in Coastal Sage Scrub/Chaparral.**
- 11:30-4:30 pm **Montane Woodland Habitat and Chaparral.**

## POSTERS (alphabetical by author)

### All Day, Thursday and Friday

**Effects of Fence Opacity on Movement of California Tiger Salamanders Toward an Underpass System in Stanford, CA.** Cheryl S. Brehme<sup>1\*</sup>, Jeff A. Tracey<sup>1</sup>, Brittany Idrizaj<sup>1</sup>, Michael Hobbs<sup>2</sup>, Alan Launer<sup>3</sup>, and Robert N. Fisher<sup>1</sup>. <sup>1</sup>Western Ecological Research Center, U.S. Geological Survey, San Diego, CA, cbrehme@usgs.gov; <sup>2</sup>Wildlife Ecologist, Technologist, San Jose, CA; <sup>3</sup>Associate Director, Conservation Planning, Stanford Conservation Program, Stanford University, Stanford, CA.

**Translocating Sierra Nevada Yellow-legged Frogs (*Rana sierrae*) to Establish a New Population in the Upper Rubicon River Watershed of Desolation Wilderness, California.** Isaac C. Chellman\*, Mitch T. Lockhart, and Sarah Mussulman. California Department of Fish and Wildlife, North-Central Region, Rancho Cordova, CA, isaac.chellman@wildlife.ca.gov.

**Increasing Survey Efficiency and Detection Rates of an Endangered Amphibian.** Michelle J. Curtis<sup>1\*</sup>, Talisin T. Hammond<sup>1</sup>, Leah E. Jacobs<sup>1</sup>, Natalie E. Calatayud<sup>1</sup>, Candace L. Williams<sup>1</sup>, Abbey E. Wilson<sup>2</sup>, Ronald R. Swaisgood<sup>1</sup>, and Debra M. Shier<sup>1</sup>. <sup>1</sup>San Diego Zoo Institute for Conservation Research, Escondido, CA, mcurtis@sandiegozoo.org; <sup>2</sup>University of Saskatchewan, Saskatoon, SK, Canada.

**A Summary and Current Status of the Arroyo Toad (*Anaxyrus californicus*), Twenty Years After the Recovery Plan.** Cynthia J. Hitchcock<sup>1\*</sup>, Elizabeth A. Gallegos<sup>1\*</sup>, Adam R. Backlin<sup>1\*</sup>, and Robert N. Fisher<sup>2</sup> *in collaboration with:* Russell Barabe, Peter Bloom, Kimberly Boss, Cheryl S. Brehme, Christopher W. Brown, Denise Clark, Kevin Cooper, Elizabeth Clark, Julie Donnell, Edward Ervin, Peter Famolaro, Kim Guillian, Jaquelyn Hancock, Nicholas Hess, Robert Hess, Steven Howard, Valerie Hubbartt, Patrick Lieske, Tritia Matsuda, Kathy Meyer, Kamarul Muri, Barry Nerhus, Jeff Norland, Brock Ortega, Robert Packard, Samuel Stewart, Samuel Sweet, Jeffrey Wells, Kirsten Winter, and Brian Zitt. <sup>1</sup>U.S. Geological Survey, Western Ecological Research Center, Santa Ana, CA, chitchcock@usgs.gov; <sup>2</sup>U.S. Geological Survey, Western Ecological Research Center, San Diego, CA.

**Identifying Individual California Tiger Salamanders (*Ambystoma californiense*) (CTS) Using Pattern Recognition Software.** Brianna C. Jones<sup>1\*</sup> and James S. Jones<sup>2</sup>. <sup>1</sup>University of Nevada Reno, Reno, NV, wildamarok@gmail.com; <sup>2</sup>East Bay Municipal Utility District, Lodi, CA.

**Salvage and Translocation of Endangered Santa Cruz Long-toed Salamander (*Ambystoma macrodactylum croceum*) Larvae.** Terris Kasteen<sup>1</sup>, Mark L. Allaback<sup>2\*</sup>, Kelli Camara<sup>3</sup>, Chris Caris<sup>4</sup>, David M. Laabs<sup>2</sup>, and Chad Mitcham<sup>5</sup>. <sup>1</sup>California Department of Fish and Wildlife, Yountville, CA; <sup>2</sup>Biosearch Environmental Consulting, Santa Cruz, CA; <sup>3</sup>Resource Conservation District of Santa Cruz County, Capitola, CA; <sup>4</sup>Ellicott Slough National Wildlife Refuge, Watsonville, CA; <sup>5</sup>United States Fish and Wildlife Service, Ventura, CA.

**Arroyo Toad Population Status in the Southern Orange County Subregion Habitat Reserve.** Kamarul Muri\* and Brock Ortega. Dudek, Encinitas, CA.

**Conservation Challenges in Recovery of Imperiled Flatwoods Salamanders.** Susan C. Walls.  
U.S. Geological Survey, Wetland and Aquatic Research Center, Gainesville, FL.

**Mitigation Ponds Offer Drought Resiliency for Western Spadefoot (*Spea hammondi*) Populations.** Monique N. Wong<sup>1\*</sup>, Katherine L. Baumberger<sup>1</sup>, Elizabeth A. Gallegos<sup>1</sup>, Adam R. Backlin<sup>1</sup>, Cynthia J. Hitchcock<sup>1</sup>, and Robert N. Fisher<sup>2</sup>. <sup>1</sup>U.S. Geological Survey, Western Ecological Research Center, Santa Ana, CA, mwong@usgs.gov; <sup>2</sup>U.S. Geological Survey, Western Ecological Research Center, San Diego, CA.

\* Indicates presenter in multi-authored presentation



**Gary Fellers in his natural habitat in 2005**  
(Photographed by Mark Crosses)

The Planning Committee dedicates this meeting to the memory of Gary M. Fellers (1948–2019). Gary spent most of his career as a federal biologist based at Point Reyes National Seashore, first working for the National Park Service, which later became the National Biological Survey and then the U.S. Geological Survey after a reorganization within the Department of the Interior (same office, he just hung new signs outside his door with each change). Gary was instrumental in shedding light on issues associated with amphibian population declines in California through his research and his active participation in the amphibian conservation community. In 1992, he launched the California-Nevada Workgroup of the international Declining Amphibian Population Task Force, which he chaired for 10 years. This workgroup was the antecedent of the group meeting here today. Gary also helped form the USGS Amphibian Research and Monitoring Initiative, whose members have produced more than 600 publications nationwide. Gary's deep interest in nature extended beyond amphibians to studies of bats, ants, mountain beavers, butterflies, lizards, foxes and birds. His legacy in science will be valued for years to come. Gary will be remembered for his sharp intellect, wry sense of humor, and his incisive, probing questions that made more than one speaker sweat at the end of their presentations!