

# 30<sup>th</sup> VERTEBRATE PEST CONFERENCE

March 7-10, 2022

Reno, Nevada

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*Includes special symposia:*

- **Managing Hooved Animals**
- **Wildlife Diseases/Zoonoses**
- **Rodenticide Environmental Fate and Nontarget Effects**

The 30<sup>th</sup> Vertebrate Pest Conference will be held March 7-10, 2022 at the Grand Sierra Resort and Casino in Reno, Nevada. Reno is located in the northwest section of Nevada, along the Nevada-California border, about 22 miles from Lake Tahoe and is known as "The Biggest Little City in the World". The Conference will feature an optional full-day field trip (Monday, March 7) and three days of presentations (March 8-10) covering many aspects of vertebrate pest control.

### Who Should Attend

The Conference significantly contributes to understanding and resolving undesirable wildlife-human interactions and wildlife damage problems, promoting better management methodology, and minimizing adverse environmental and ecological effects. Vertebrate pest management is applied ecology with improved agriculture, public health, and conservation of natural and human-made resources as the primary goals. The Conference is a forum for exchanging knowledge, information and experiences among researchers, administrators, regulators, extension personnel, practitioners, and students. Participants have various professional backgrounds, but all have one common interest – managing human-wildlife conflicts. The following represents previous attendee affiliations:

- Wildlife control and animal control officials and personnel
- Wildlife managers employed by federal, state, and regional agencies
- Health department officials and employees
- Pest control advisors (PCAs) and others involved in pesticide use and pesticide regulation
- Agricultural producers, both using conventional and organic methods
- Consultants in vertebrate pest problems
- Manufacturers and suppliers of vertebrate pest materials
- Extension Specialists, Advisors, and Agents
- Foresters
- Administrators and staff of federal and state agriculture departments, environmental protection agencies, and other regulatory agencies
- Sanitarians
- Food processing and warehouse managers
- Educators teaching integrated pest management and agricultural topics
- Researchers (public agencies and private sector)
- Natural resource managers (conservationists) in public agencies and NGOs



*Sponsored by:*

**The Vertebrate Pest Council**

### **CONTINUING EDUCATION CREDITS**

California Continuing Education (CE) credits for pest control professionals (PCA, QAC, etc.) and Vector Control personnel will be available. Past Conferences have provided 18 to 22 California DPR credit hours, plus CE credits from the CA Department of Public Health; credits are based on final program content. For updates, see [www.vpconference.org](http://www.vpconference.org).

### **CONFERENCE REGISTRATION**

Pre-registration is highly recommended and can be accomplished online via the Internet, using a credit card (Visa, MasterCard, American Express, or Discover), by going to <http://www.vpconference.org/>. To obtain the discounted pre-registration rate, be sure to complete your registration **by February 11, 2022**. Registration after February 11 or at the Conference will include an additional \$50 surcharge.

Pre-registration fees will be refunded minus a 20% administrative fee if the request for refund is made to Conference Registration Coordinator Jennifer Gonzalez (phone: 562-802-2238 ext 51218) by **February 25, 2022**. No refunds will be granted after this date. Pre-registration fees can be transferred to another individual, to permit their attendance in your place, if the request is made by February 25.

### **Discounted Pre-Registration**

Complete Conference (Mar 8-10)	\$395.00
Per-Day Conference Registration	\$175.00
Retiree, Complete Conference (Mar 8-10)	\$200.00

### **Student Pre-Registration**

Complete Conference – Student (Mar 8-10)	\$85.00
Per-Day Conference Registration	\$30.00

### **Commercial Exhibitor**

Complete Conference – Exhibitor (includes 1 person registration with 1 exhibit table)	\$945.00
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### **Optional Events**

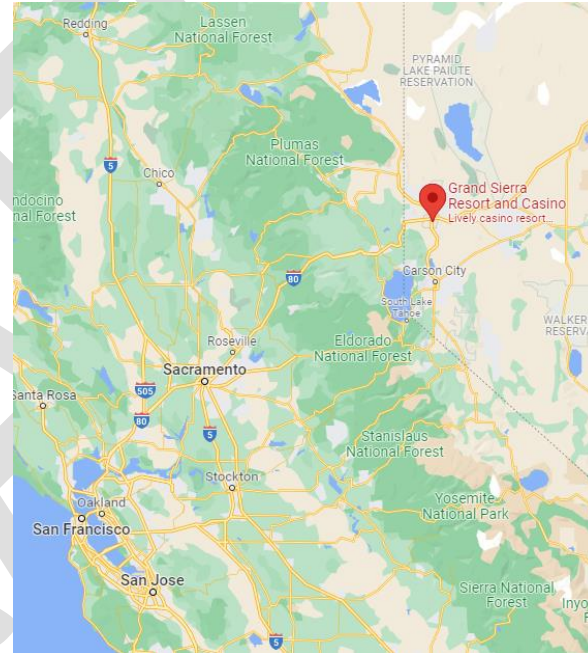
Field Trip (full day Mar 7, includes lunch)	\$90.00
Field Trip – Guest (full day Mar 7, includes lunch)	\$90.00

### **CONFERENCE PROCEEDINGS**

The conference *Proceedings* will be available with open access as individual papers in pdf format at the University of California's eScholarship portal once publication is completed. A printed version of the 30<sup>th</sup> *Proceedings* will also be available for purchase via print-on-demand.

### **CONFERENCE LOCATION**

Grand Sierra Resort and Casino  
2500 E 2nd St, Reno, NV 89595



### **HOTEL RESERVATIONS**

To make your hotel reservation at the Grand Sierra Resort and Casino, direct your web browser to <https://book.passkey.com/event/50183209/owner/16854/home>. There are a limited number of rooms available at the conference rate so it is important you make your room reservations early.

### **TRANSPORTATION**

**Airports:** Reno-Tahoe International Airport (RNO) is 2 miles from the Grand Sierra Resort and Casino. This airport has regional service offered from Alaska, Allegiant, American, Delta, Frontier, JetBlue, Southwest, United, and Volaris.

### **Ground Transportation:**

There is a complimentary shuttle service that departs to and from Grand Sierra Resort and Casino and Reno-Tahoe airport, from the first flight of the day until the last. Shuttle service runs from 4:30am-12:15am daily, with a shuttle at each end-point every 30 minutes.

- Shuttle leaves GSR at the top (:00) and bottom (:30) of the hour
- Shuttle leaves Reno-Tahoe airport at quarter after (:15) and quarter 'til (:45) the hour

### **COMMERCIAL DISPLAYS**

The Conference will have commercial exhibit displays. Space is available for exhibiting commercial products and services. The exhibition fee is \$945, which includes one full conference registration. Complimentary hors d'oeuvres and a no-host bar will be available Wednesday evening in conjunction with the displays, poster exhibits, and a vendors' forum. For further information, contact Aaron Shiels: aaron.b.shiels@usda.gov .

### **FIELD TRIP (Monday March 7, 2022)**

The Conference begins with an optional full-day field trip on Monday, March 7. The field trip departs from the Grand Sierra Resort and Casino at approximately 7:30 AM. The field trip will include a bus trip through the surrounding area with talks about feral horse management and other human-wildlife conflicts. A lunch will be provided (included in cost). Buses will return to the hotel by approximately 5:00 PM.

### **CONFERENCE PROGRAM (Tuesday – Thursday, March 8-10, 2022)**

Conference presentations will begin at 9:00 AM on Tuesday, March 8, with a single plenary session, led off by a keynote address and a presentation of the Walter E. 'Howdy' Howard Lifetime Achievement Award for Excellence in Vertebrate Pest Management. Concurrent sessions will occur from Tuesday afternoon through Thursday morning, offering participants a choice of topical sessions and special symposia. Morning and afternoon refreshment breaks, as well as evening social activities on Tuesday and Wednesday, will permit ample time for meeting speakers and conference participants to engage in informal discussions.

The final program, containing exact times and assignments of concurrent sessions and individual presentations, will be provided at the time of the Conference. Updates on program details will be posted on the Conference's web site (<http://www.vpconference.org>) when they become available.

### **KEYNOTE ADDRESS**

The Keynote Address will be given by Dr. Jens Jacob, Julius Kühn-Institute, Federal Research Centre for Cultivated Plants. Dr. Jacob has worked for over 25 years in applied rodent research to study the ecology, distribution, and importance of rodents. Dr. Jacob's focus is on the protection of crops and stored goods from rodent damage, the protection of vertebrates from unintended effects of plant protection products, and rodent-borne diseases.

### **POSTER SESSION**

A special Poster Session will be available for informal viewing from Tuesday afternoon (March 8) through Thursday morning (March 10). Posters are still being accepted for the Conference and can present either practical or technical aspects of managing human-wildlife conflicts, or summarize research related to wildlife damage management or work currently in progress. Easels and poster boards will be provided to display posters, so posters should not be larger than 36 inches × 36 inches. For further details, see the Conference's web site or contact Carolyn Whitesell by email at [cawhitesell@ucanr.edu](mailto:cawhitesell@ucanr.edu).

# Conference At-A-Glance: Tentative Schedule

Tuesday, March 8 AM

Monday, March 7 Optional Field Trip, 7:30 AM - 5 PM

## Tuesday, March 8

Opening Plenary Session  
9:00 – 12:00 PM

Lunch (*on your own*)  
Posters and Commercial Exhibits open – 1:15

*Concurrent Session:*  
**Rodent Management**  
1:20 – 5:00 PM

*Symposium:*  
**Wildlife Diseases/Zoonoses**  
1:20 – 5:00 PM

5:30 No-Host Welcoming Social

## Wednesday, March 9

*Concurrent Session:*  
**Rodenticide environmental fate and nontarget effects**  
8:10 AM – 11:50 AM

*Symposium:*  
**Management of Hooved Animals**  
8:10 AM – 11:50 AM

Lunch (*on your own*)

*Concurrent Session:*  
**Rodenticide environmental fate and nontarget effects**  
1:20 – 5:00 PM

*Concurrent Session:*  
**General Session**  
1:20 – 5:00 PM

6:30 PM: Hors d'oeuvres, Poster Session, and Vendors' Forum

## Thursday, March 10

*Concurrent Session:*  
**Vertebrate Pesticides**  
8:10 AM – 11:50 AM

*Concurrent Session:*  
**General Session**  
8:10 AM – 11:50 AM

## PLENARY

- 9:00 **Conference Welcome and Overview**  
*Roger Baldwin, Vertebrate Pest Conference Chair*
- 9:20 **Keynote Address**  
*Jens Jacob, Julius Kühn-Institute*
- 10:05 **Lifetime Achievement Award**  
*Roger Baldwin, Vertebrate Pest Conference Chair*
- 10:25 **Break**
- 10:45 **Development of a New Immunocontraceptive for Use in Feral Horses.**  
*Jason Bruemmer, USDA APHIS WS National Wildlife Research Center, CO*
- 11:10 **Twenty Years of Big-Brown Bat Rabies Virus Cross Species Transmission in Flagstaff, Arizona, 2001-2021.**  
*David L. Bergman, USDA APHIS Wildlife Services, AZ*
- 11:35 **Anticoagulant Rodenticide Exposure in Red Kites (*Milvus milvus*): Regulatory Changes and Analytical Progress Change the Picture!**  
*Philippe Berny, Vetagro Sup - Toxicology, Marcy, France*
- 12:00 **Session Close**

**Tuesday, March 8 (PM)**

**CONCURRENT SESSION: Rodent Management**

1:20 **Session Welcome:**

Influence of California Ground Squirrels on Forage Availability for Ranching Operations.

Evaluating the Use of Barn Owl Nest Boxes for Rodent Pest Control in Winegrape Vineyards in Napa Valley.

Improving Efficiency of Prairie Dog Surveys Using a Small Copter Drone.

Abert's Squirrel Management in Support of Endangered Mount Graham Red Squirrel Recovery in Arizona.

Continuing Field Efficacy of Norbormide Against Both *Rattus rattus* (Ship Rats) and *Rattus norvegicus* (Norway Rats).

Managing Roof Rats in Citrus Orchards: Failures and Potential Successes.

An Assessment of Quantitative Indexing Tools and Movement Patterns in Invasive Roof Rats in Citrus Orchards.

New Baits to Control Blacklegged Ticks Feeding on Two Host Species: Lyme Disease Implications.

5:00 **Session Close**

**Tuesday, March 8 (PM)**

**SYMPOIUM: WILDLIFE DISEASES/ZOONOSES**

1:20 **Session Welcome:**

Sarcoptic Mange in Urban Kit Foxes: Potential for Cross-Species Transmission.

Investigating Protozoal Parasites as Causes of Neurologic Disease in American Black Bears (*Ursus americanus*) That Contribute to Human-Wildlife Conflict.

Detection of *Toxoplasma Gondii* in Feral Cats in Central Coastal California.

Update of Wildlife Diseases in Nevada.

Surveillance for Snake Fungal Disease in California's Free-Ranging Snakes.

Are Two Common Gastrointestinal Parasites of White-Tailed Deer and Domestic Sheep the Same Species? The Potential of Harvesting Parasite Larvae and Adults Employing Two Techniques.

California's Chronic Wasting Disease Surveillance Program.

Disease Surveillance of Invasive Nutria (*Myocastor coypus*) Inhabiting Wetlands in California's Central Valley.

5:00

**Session Close**

**Wednesday, March 9 (AM)**

**SYMPOSIUM: MANAGEMENT OF HOOVED ANIMALS**

8:10

**Session Welcome:**

Immobilization Efficacy of a Conducted Electrical Weapon in Captive White-Tailed Deer.

Opportunities for Local Partnerships in Managing Free Roaming Equids.

Status Of the Exotic Mule Deer Population on Catalina Island, California, Based on Annual Spotlight Counts.

Fertility Control Options for Free-Ranging Horse Populations Highlighting Spayvac®-Equid.

Knowledge and Opinions of Federal Management to Control Free-Roaming Horse Populations in the U.S.

Evidence for Irruptive Fluctuation in Axis Deer of Hawai'i.

Are Mountain Lions Really Eating Feral Horses?

What is a Wild Horse?

12:00

**Session Close**

**Wednesday, March 9 (AM)**

**CONCURRENT SESSION: RODENTICIDE ENVIRONMENTAL FATE AND NONTARGET EFFECTS**

8:10 **Session Welcome:**

Identification of *Rattus tanezumi* and Y25F Mutations in The Vkorc1 Gene of Rattus Species in Orange County, California.

Thirty Years of Rodenticide Residue Analysis: How Low is Low Enough?

Diphacinone and Cholecalciferol (D+C) As A Low Residue Rodenticide.

Use Of Anticoagulant Rodenticides on Farms – Non-Target Exposure and Potential Mitigation.

Occurrence and Fate of Anticoagulant Rodenticides in the Aquatic Environment.

Anticoagulant Rodenticide Hazards to Predatory Birds: Sublethal Effects, Interpretation of Tissue Residues, and Toxicity Thresholds.

Human Exposure to Superwarfarin Rodenticides: Methods of Detection and Treatment.

12:00 **Session Close**

**Wednesday, March 9 (PM)**

**CONCURRENT SESSION: RODENTICIDE ENVIRONMENTAL FATE AND NONTARGET EFFECTS**

1:20 **Session Welcome:**

Chiral Liquid Chromatography-Tandem Mass Spectrometric Analysis of Superwarfarin Rodenticide Stereoisomers –Bromadiolone, Difenacoum and Brodifacoum – in Human Plasma.

Analyzing for Anticoagulant Rodenticides in Animal Tissue.

A Validated LC-ESI-MS/MS Method for Quantifying Multiple Rodenticides In Microscale Samples of American Kestrel Liver, Feces, and Whole Blood.

Investigating the Pathways of Rodenticides in Urban Carnivores.

Exposure of Urban Coyotes to Anticoagulant Rodenticides in Southern California: Sub-Lethal Effects and Environmental Correlates.

Investigation Between Anticoagulant Rodenticides and Non-Target Exposure in Breeding Barn Owls.

5:00 **Session Close**

**Wednesday, March 9 (PM)**

**CONCURRENT SESSION: GENERAL Session**

1:20 **Session Welcome:**

Small Rodent Communities and Their Associated Damage to Wheat-Groundnut Agriculture Systems.

Pest Friends, a Board Game Simulation of Pest Management.

The Moving Target of Feral Pig Management.

Assessment and Control of Wild Pigs at Hakalau Forest National Wildlife Refuge: Efforts in Progress.

5:00 **Session Close**

**Thursday, March 10 (AM)**

**CONCURRENT SESSION: VERTEBRATE PESTICIDES**

8:10 **Session Welcome:**

A 2021 Review of Sodium Fluoroacetate for Conservation and Protecting Endangered Species.

Efficacy of BurrowRx to Treat Black-tailed Prairie Dogs (*Cynomys ludovicianus*) in Montana: A Pilot Study.

Rodent Contraceptives in Poultry Farms.

The Path to U.S. National Registration of a Toxicant Product for the Control of the Small Indian Mongoose.

The Economic, Social and Political Impact of the California Ecosystems Protection Act.

Development of a New Coyote Toxicant.

**11:50 Session Close**

**Thursday, March 10 (AM)**

**CONCURRENT SESSION: GENERAL SESSION**

**8:10 Session Welcome:**

Free-roaming Cat Management: Be Careful What You Wish For.

Can Nest Boxes in Napa Valley Winegrape Vineyards Sustain a Local Population of American Barn Owls (*Tyto furcata*)?

The Potential of The Apple Inc., Airtag® As Monitoring Devices for Wildlife and Domestic Livestock.

Decision-Making for Foraging in Response to Auditory Stimuli in Wild-Caught Jungle Crows.

Mainland Eradication of the Invasive Raccoon Dog (*Nyctereutes procyonoides*) and the Evolution of a National Task Force for Invasive Alien Species.

The Red Queen and the Brown Treesnake: Moving Targets for Management of One of the World's Most Harmful Invasive Reptiles.

**11:50 Session Close**

**Poster Session**

Livestock Mortality Composting to Mitigate Livestock Predator Interactions.

Evaluating and Implementing Practices to Control the Piute Ground Squirrel Epidemic in Southern Utah.

Determining Effective Attractants for Roof Rats in Citrus Orchards.

# 30<sup>th</sup> VERTEBRATE PEST CONFERENCE

## CONFERENCE CHAIR:

**Roger A. Baldwin**, University of California, Davis  
(530) 752-4551; Email: rabaldwin@ucdavis.edu

## PROGRAM CHAIR:

**Niamh Quinn**, University of California Cooperative Extension  
(949) 301-9182; Email: nmquinn@ucanr.edu

## REGISTRATION:

**Jennifer Gonzalez** and **Lillian Mignella**, Target Specialty Products.  
(831) 562-802; Email: jennifer.gonzalez@target-specialty.com,  
lillian.mignella@target-specialty.com

## LOCAL ARRANGEMENTS:

**Greg Hacker**, California Department of Public Health  
(916) 686-8083; Email: Greg.Hacker@cdph.ca.gov

## FIELD TRIP:

**Laura Snell**, University of California Cooperative Extension  
530-233-6400; Email: lksnell@ucanr.edu

**Nicki Frey**, Utah State University  
(435) 586-1924; E-mail: nicki.frey@usu.edu

**Jason Bruemmer**, USDA National Wildlife Research Center  
Email: jason.bruemmer@usda.gov

## COMMERCIAL DISPLAYS:

**Aaron Shiels**, USDA National Wildlife Research Center  
(916) 445-4239; Email: aaron.b.shiels@usda.gov

## POSTER AND STUDENT AWARD COORDINATOR:

**Carolyn Whitesell**, University of California Cooperative Extension  
Email: cawhitesell@ucanr.edu

## CONTINUING EDUCATION

**Edmund Duarte**, Alameda County Agricultural Commissioner's Office  
(926) 245-0853; Email: ed.duarte@acgov.org

**Mike Mooney**, Alameda County Vector Control Services District  
(510) 567-6801; Email: michael.mooney@acgov.org

## PUBLICITY:

**Dirk Van Vuren**, University of California, Davis  
(530) 752-4181; Email: dhvanvuren@ucdavis.edu