



67th Annual Meeting



Navigating the Intersections of Science and Policy

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The Western Section of The Wildlife Society 2020 Annual Meeting

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Session Abstracts

To conserve paper, abstracts for concurrent and poster sessions are provided electronically. Abstracts are available to view, download or print via the Western Section Annual Meeting website: <https://tinyurl.com/twsws2020>

How to stay in communication with TWS-WS

- **Join our email list:** <https://tinyurl.com/TWSWSMailingList>
- **Twitter:** [@WesternTWS](https://twitter.com/WesternTWS)
- **Facebook:** <https://www.facebook.com/tws.western>
- **Visit our website:** <http://www.tws-west.org>

Future Meeting Dates

Western Section Annual Meeting

- February 1-5, 2021: Riverside, CA - Convention Center & The Mission Inn
- 2022: Reno, Nevada (in development)
- 2023: Tenaya Lodge, Fish Camp, CA (in development)

The Western Section of The Wildlife Society 2020 Annual Meeting

TWS Western Section Board Members – 2019

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AECOM

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Diversity Committee

Bayan Ahmed

Dept of Water Resources

Western Wildlife Journal

Howard Clark

Colibri Ecological Consulting

Communications

Susanne Marczak

SD Zoo Institute for Conservation Research

Membership/Historian

Don Yasuda

USDA Forest Service

Student Affairs

Katie Smith

WRA Environmental

Conservation Affairs

Kelly Holland

GEI Consultants

Professional Development

Janine Payne

Contractors

Bookkeeper

Mike Chapel

Webmaster

Eric Renger

Program Director

Cynthia Perrine

Workshop Coordinator

Ivan Parr

Project Manager and Meeting Planner

Candace Renger

Download the [Whova Mobile Meeting App](#)

This year we are trying something new! We have set up a mobile app for the meeting so you can use your phone to create personalized schedules, engage with other attendees, read abstracts, and receive real-time notifications about last minute schedule changes and more. (By using the app, we are also saving *almost two whole trees* because we are able to reduce the number of paper pages in this printed program – we are very happy about this!) Download the *Whova* app in the app store on your mobile device and setup an account using the same email address you used to register for the TWS-WS meeting. That's all it takes. If you have any problems getting an account setup in the app, visit our registration desk in the RFB room at the Holiday Inn so we can help you out.

Videotaping and Photography Policy

Videotaping and photography of participants at meeting events may occur. Western Section of TWS may use photographs and videos of meeting attendees for any lawful purpose, including publicity, illustration, advertising, newsletter, and web content. More information will be available at the meeting registration desk. Your registration and attendance at this meeting confirms your acknowledgement and agreement with these terms for use of videos and photographs.

The Western Section of The Wildlife Society 2020 Annual Meeting

MESSAGE FROM THE MEETING CHAIR

Fellow Wildlifers,

Thank you for joining us at the 2020 Annual Meeting of the Western Section of The Wildlife Society in Redding, California! Being in Redding is like a home-coming for me. It was here that I attended my first Annual Meeting in 2008. And, as your President-Elect, I am excited to explore this Meeting's theme with you: **Navigating the Intersections of Science and Policy**. Why?

As background, I entered into my wildlife professional career path, eager to work with species and habitats, only to discover that this career path necessitates interacting with human-dominated realms, such as politics, economics, and sociology. In my early years as a wildlife biologist, I seldom gave much attention to the broader role of influence that politics and economics had on my job or on the species that I was working with. I was comfortable letting someone else handle the messy political-economic decisions so that I could continue looking for nesting raptors or catching snakes. But along the way I realized that it was critical that my perspective, knowledge, and experience contribute to environmental policy. My voice matters...and so does yours. If our voices are not at the policy table, consider the voices that will be showing up.



While serving as the Section's Conservation Affairs Committee Chair (since 2017), I have had a front row seat to seeing the hesitation and confusion that many wildlife professionals experience when considering how or whether to engage in policy. I know that many of us have been surprised at the turn of events in the past two years as we have seen policies that seemed unshakable – like the protection of National Monuments and the text and interpretation of the Endangered Species Act – become at risk of crumbling. Perhaps your personal life and/or your professional life was impacted by the month-long shutdown of the federal government – and you couldn't pay your bills or get your work done. Maybe the research funding for your favorite wildlife species or the priority setting for protecting an ecosystem seems to be in a backslide. I was not alone among wildlife professionals to be both excited and alarmed that scientists of all studies and sectors came together in the March for Science – emerging out of our laboratories and field sites to speak up about the importance of science, particularly where it intersects with policies that govern funding and regulations for research, resource management, climate resiliency planning, species and habitat protection, and basic quality-of-life needs like clean water and air.

You should know that you are not alone if you ever found yourself asking, "How do I avoid conflicts of interest as a biologist who has a strong concern about some environmental policy decision that may appear contrary to your employment with a government agency or a consulting firm?" You are not alone if you ever questioned whether your comment letter that you submitted in response to a proposed policy change has even made a difference. You are not alone if you have felt nervous about calling up your elected representative or even setting up a face-to-face meeting with them – or just unsure of where to start or what to say.

At the 2020 Annual Meeting, we will explore our role, as wildlife professionals and members of TWS, within the intersection of science and policy. My goal is that each of you come away from the Annual Meeting with more confidence in navigating (and being more effective in) this intersection, with its perceived conflicts of interest or marred objectivity. It is my hope to explore the nuances of this theme throughout our Annual Meeting – from the pre-symposium workshops to the concurrent sessions, from the plenary to the field trips. I hope that each of you is, in some way, inspired to step in and participate more confidently in policy, or perhaps to step up into a leadership position – to ensure that science is represented in the class room as well as the board room, on the City Council as well as the halls of Congress.

Representation matters; diversity is the fabric of not only our earth's ecosystems and also our scientific community. And wildlife professionals are represented when we participate, particularly when our engagement becomes more anticipatory and less reactionary. Your voice matters. So join us at the 2020 Annual Meeting, where you can present your research, learn from others, network, generate new ideas, reinvigorate your enthusiasm for wildlife conservation, and make your voice heard.

"Choose your fight and choose your tool. I can [be more effective and install more change] with a pair of binoculars than with a monkey wrench." – Rob Burton, February 5, 1997

Sincerely,

Kelly Holland

2020 TWS-WS Annual Meeting Chair - TWS-WS President-Elect - Senior Wildlife Biologist & Regulatory Specialist at GEI Consultants AND Certified Wildlife Biologist®

The Western Section of The Wildlife Society 2020 Annual Meeting

Thank You Annual Meeting 2020 Planning Committee

Meeting Chair/President-Elect TWS-WS Kelly Holland	President – TWS-WS Matthew Bettelheim	Professional Development Events Janine Payne
Program Director Cynthia Perrine	Meeting Planner Candace Renger	
Audio Visual Captains Sam Sosa, Chair Chad Moura Rhys Evans	Don Yasuda Ona Alminas	John McNerney Becky Rozumowicz
Banquet Awards Ceremony Rich Burg Matthew Bettelheim	Breakfast Roundtable Lisa Fields, Chair Wendy Loeffler	Shay Zanetti
Chapter Leaders Meeting Jeff Lincer	Exhibit Hall Callie Amoaku	Keynote Speech Coordinator Kelley Stewart
Local Arrangements Stephanie Houtman Tricia Bratcher Michelle Clark	Chrissy Sousa Eric Stitt Leslie Rivas	Sac-Shasta Chapter Heather White Steve Kohlmann
Photo Collection/Slideshow Eveline Larrucea	Photographer Janine Payne	Printed Program Debra Hawk Natasha Dvorak John Perrine Rick Williams
Raffle and Silent Auction Coordination Susanne Marczak Kristen Burgess	Colleen Wisinski Laura Luther	Matthew Bettelheim Randi McCormick
Plenary Session Kelly Holland	Poster Session Carlos Alvarado	Allison Fuller
Student Affairs Committee Katie Smith, Chair Elizabeth Meisman, Chair	Bayan Ahmed Colleen Wisinski	
Student Judging Coordinators Brian Barton Elizabeth Meisman	Student Quiz Bowl Rhys Evans, Chair Elizabeth Meisman	Barbara Clucas
Volunteer Coordination Ryan Baumbusch Kristen Burgess	Wildlife Careers Panel Stephanie Houtman Collen Wisinski	Whova App Team Bayan Ahmed Katie Smith
Concurrent Session Chairs Ryan Baumbusch Rick Williams Linda Leeman Karen Converse Deana Clifford Cliff Feldheim Rhys Evans	Dave Johnston Rich Burg Kelley Stewart Esther Burkett Susanne Marczak Junko Hoshi Rachel Mazur	David Riensche Dan Airola Jeff Alvarez Elizabeth Meisman Natasha Dvorak Scott Osborn

The Western Section of The Wildlife Society 2020 Annual Meeting

GENERAL INFORMATION

Cell Phone – Informal Policy The Western Section of The Wildlife Society strongly encourages all meeting participants to silence their cellular phones and similar devices prior to entering meeting rooms! The informal policy of the Western Section is that, if your device makes an audible noise during any session, you will be expected to purchase a beverage for every person in your seating row at that evening's social function. Seriously...you beep, you buy!

Job/Messages/Announcements Board Post and view job announcements on the job board located near the registration desk. Please do not post résumés as we cannot be responsible for the security of your personal information.

Raffle and Silent Auction We encourage everyone to purchase raffle tickets and bid high on the silent auction! All raffle ticket sales and silent auction purchases will be donated to support Western Section student and early career professionals. Raffle tickets will be sold starting Tuesday night at the Welcome Reception, and a last call for raffle tickets will be announced after dinner at the Member's Banquet on Wednesday evening. The raffle will be a Dutch/Bucket raffle which will be held at the end of Wednesday night's banquet. Place tickets in the buckets for the prizes you hope to win. This banquet raffle is a lot of fun and there will be some amazing prizes, including some new super surprises! The silent auction will open on Wednesday morning and will close just before the Poster Reception on Thursday evening at 6:15pm. Items must be purchased and picked up by 11am on Friday. The silent auction items will be on display starting Tuesday at the Welcome Reception.

Professional Development The number of contact hours for each workshop and contributed paper session is equal to the number of actual hours spent in a workshop or session and does not include time allotted for breaks or lunch. Generally, attendance at the TWS-WS Annual Meeting is not creditable for an initial application for Certified Wildlife Biologist or Associate Wildlife Biologist (but this year's pre-meeting events are!); however, meeting hours may be credited one for one toward CWB Recertification. For example, if you attend four, 2.5-hour technical sessions (sorry, social events do not count!) you may claim 10 hours toward a Professional Development Certificate (in category 1) or toward Certified Wildlife Biologist renewal (also category 1). Speaking in or chairing a session is usually credited at 1 hour = 2 hours. Additional information on the TWS Professional Development Certificate and Certified /Associate Wildlife Biologist programs is available from the TWS-Western Section Professional Development Committee or on the TWS website. Please visit the TWS website (www.wildlife.org) for additional details or contact your TWS-Western Section Professional Development Committee.

Your Active Voice Matters.

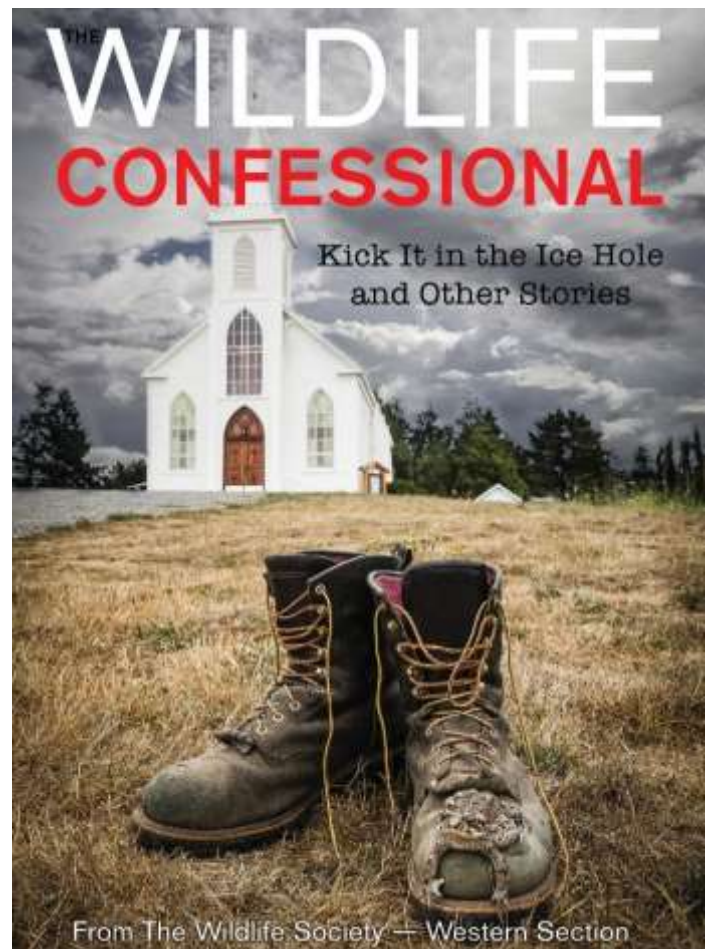


The Western Section's Conservation Affairs Committee (CAC) tracks and responds to policies that may affect the conservation of wildlife and their habitats within the geographical scope of our Section.

GET INVOLVED AND CONTRIBUTE YOUR ACTIVE VOICE TO CONSERVATION!

- Attend the CAC meeting at 9am on February 5 in Sacramento Room at the Red Lion
- Stop by the CAC table in the Exhibit Hall to find out how to contact your elected representatives and write them a letter
- Join our monthly calls on the last Wednesday of the month at 12 noon (mark your calendars: 2/26 & 3/25)

Contact Kelly Holland, CAC Chair, for more information at conservation@twc-west.org.



The Western Section of The Wildlife Society 2020 Annual Meeting

Certification Program – TWS. Certification of wildlife biologists is a service provided by The Wildlife Society for wildlife professionals who may desire a peer evaluation statement. The Wildlife Society is committed to the sound stewardship of wildlife resources under the guidance of well-educated, experienced, and dedicated wildlife biologists. To further this aim, The Wildlife Society has established standards for certifying the credentials of qualified wildlife biologists.

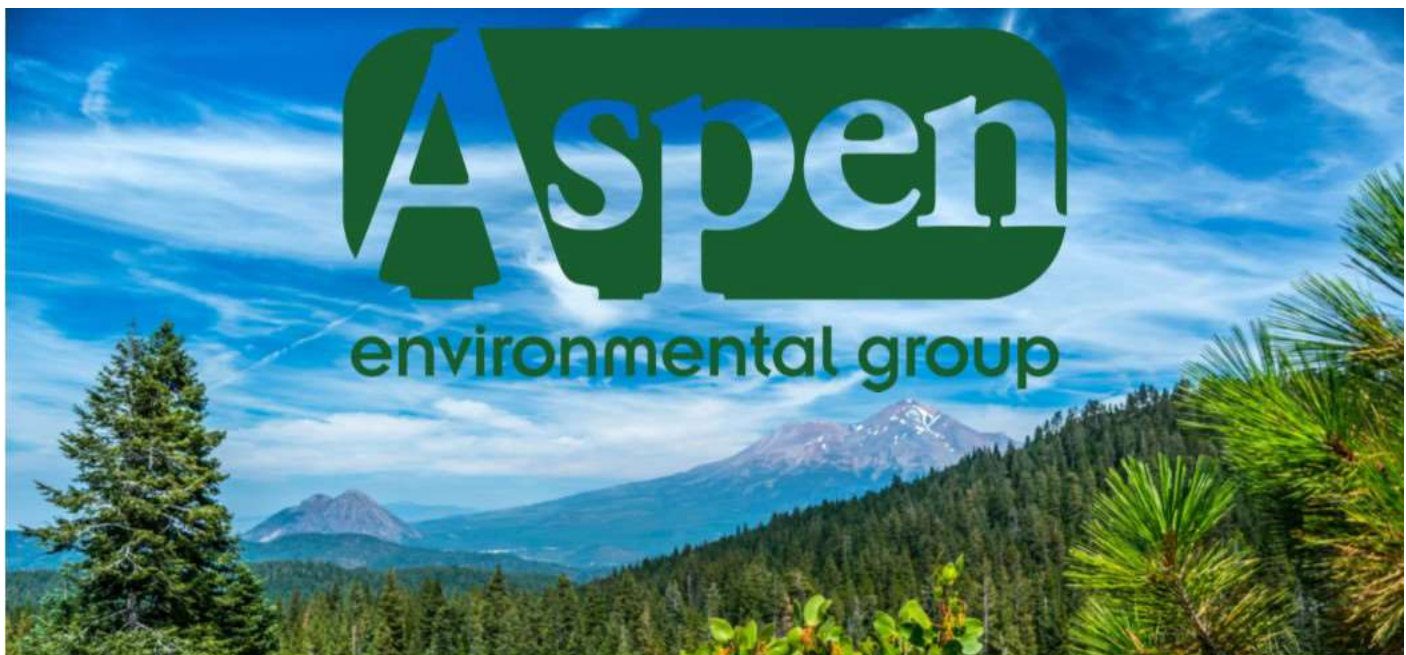
Photographer. Say "Cheese" for our meeting photographer, Janine Payne. Please check in with her if you have any concerns, and especially if you'd like her to take a photo for you!



Recycled and Low Environmental Impact Program Materials. This program has been printed on 30% post-consumer recycled and Forest Stewardship Council-certified paper. Ascent's participation in Close the Loop, a zero waste to landfill recycling program, allows for 100% recycling of collected consumable supplies such as cartridges, drum units and toner bottles. Best of all, it manufactures eLumber™ using all the waste that was once considered unusable. Thank you to Ascent Environmental for handling the layout and printing this program at no charge to TWS-WS. They also provided outstanding editing skills (AND that last bit is just a silly joke for the few who actually read these things).

Re-usable Name Badge Holders. The Western Section is now using re-usable name badge holders. At the end of the meeting, please drop off your name badge holder at the Registration Desk so it can be re-used next year. Thanks!

Speaker Practice Room. The Morgan room at the Holiday Inn is available for speakers to practice their presentations. Obtain a key from the Registration Desk. Advance signups suggested.



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KEYNOTE ADDRESS AND DIALOGUE

Wildlife Disease 2020 and Beyond: Moving from Microscopes to Policy

- Wednesday, February 5th: 10:00am to 12:00pm (Sierra Room, Red Lion)
- **Peregrine Wolff**, Wildlife Disease Association
- **Deana Clifford**, CA Dept. Fish & Wildlife / UC Davis
- **Dave Jessup**, UC Davis Wildlife Health Center



Peregrine Wolff is a graduate Cornell College of Veterinary Medicine and has worked with captive and free-ranging wildlife for government agencies and large corporations as well as owning her own practice specializing in Hollywood's animal movie and TV stars. She has spent the last 10 years working as the veterinarian for the Nevada Department of Wildlife and has recently transitioned to the position of Executive Manager for the Wildlife Disease Association. She is a past-president of the American Association of Wildlife Veterinarians and American Association of Zoo Veterinarians and is currently Chair for the US Animal Health Association, Committee on Wildlife and Vice-chair of the Board of the Wild Sheep Foundation. Her interests include integrating animal welfare concepts into wildlife medicine and management and eliminating the divide between consumptive and non-consumptive users of wildlife so as to present a united force for wildlife conservation.



Deana Clifford – Deana received her Bachelors in Wildlife Conservation Biology (1995), Doctor of Veterinary Medicine (1999), and Masters (2001) and PhD (2006) in epidemiology from the University of California Davis. Her dissertation work focused on infectious disease and reproduction threats to endangered island foxes. Deana has worked on a variety of wildlife and ecosystem health projects, both nationally and internationally, ranging from infectious disease in carnivores to impacts of bovine tuberculosis and water scarcity on wildlife, livestock and people in Tanzania. She is currently a senior wildlife veterinarian focused on Nongame, Threatened and Endangered Species at the California Department of Fish and Wildlife and an Assistant Clinical Professor at UC Davis. Her interests are wildlife disease risk assessment and surveillance, conservation medicine, mesocarnivore diseases, and health issues occurring at the wild-domestic animal-human interface.



Dave Jessup In 1977, CDFG wanted someone who had pathology training and capture experience, was young and dumb, could start from zero, and would work cheap. I fit that description. In the first 4-5 years, capture and relocation of elk, and subsequently bighorn sheep, was a big part of my job. From 2000-2010 we had great success investigating causes of morbidity and mortality in southern sea otters, and other marine mammals and birds. Several major publications drew attention to land based protozoal parasites, enteric bacteria, anthropogenically influenced algal toxins, and industrial pollutants. We also cut in half the time required for oiled sea otters to regain water repellency. When not working in California or other Western States I was able to work with colleagues in Africa, where capture and conservation of wildlife is often an order of magnitude more sophisticated than in the US.

PLENARY SESSION THEME

Navigating the Intersections of Science and Policy

Thursday, February 6th: 2:00pm to 4:00pm (Sierra Room, Red Lion)

During my two years serving as your Conservation Affairs Committee Chair, I have been witness to the spectrum where we, as wildlife professionals, position ourselves along the continuum of policy engagement. Some of us stand firmly in the place of pure objectivity and believe that scientists have no business dabbling in policy since it appears to cloud objectivity, while some of us are eager to march in the streets and shout “Facts are facts!” Many of us may find ourselves somewhere in between: wanting to do more but either feel bound by perceived conflicts of interests, or at a loss of where to begin and doubting whether an individual could even make a difference. Through my wildlife career, I have journeyed through this entire spectrum – from a young biologist who only wanted to focus on studying wildlife, to a fired-up activist who read and reread *The Monkey Wrench Gang*, and now to a scientist who understands that everything I do in my career is, in some shape or form, related to policy.



Environmental progress is not something to be assumed or taken for granted. The text of an environmental law can be rewritten when our eyes are tuned into a set of binoculars focused on a nesting bird. Environmental protections for habitats can be removed while we are synthesizing our field observations. Scientific facts can be deemed suspect and touted as fake while we are busily writing our dissertations or grant applications or Biological Assessments. Wherever we may find ourselves along the policy spectrum, it seems that our scientific community has stumbled upon a collective renaissance of realizing the importance of responding to policies that influence environmental protection, funding, priorities, and focus.

As scientists, we are taught to be objective. But objectivity does not equate to standing on the sidelines. There is a difference between activism, advocacy, objective opinion, and advice. As wildlife professionals, our objective opinion and evidence-based advice have a very important place within the realm of environmental policy. It is absolutely critical that we, as wildlife professionals, become more confident in participating in, informing, influencing, creating, shaping, and responding to policy, and learn how to successfully navigate the intersection of policies that affect the wildlife and habitats that we hold dear. And to achieve that requires that we understand the various areas where environmental policy is crafted, negotiated, implemented, interpreted, and studied.

I think of our community of wildlife professionals as an ecosystem. We may occupy different niches, wear different hats, or sometimes speak a different professional language. Maybe we work for a consulting firm or a regulatory agency; or we lead an NGO or are involved in land management; maybe we conduct research for a university or for our own business; or we apply our wildlife skills to environmental law or advising legislative representatives. Yet, similar to an ecosystem, we may not always be aware of the ways that we, as a community, are connected, until one of the strings of the web gets pulled on and we notice the tug in our own sphere. So, when we are called to respond to environmental policies that are shifting the landscape in which we work or affecting the species or habitats which we study, how can you more effectively engage and participate – from wherever you may reside in the policy spectrum – and feel confident and effective?

Our plenary panelists aim to illuminate the pathways that you, as a wildlife professional and a member of The Wildlife Society, can pursue to influence environmental policy and perhaps shape public interest into an outcome that benefits the wildlife and habitats that are the focus of your career.

- **Kelly Holland**, 2020 TWS-WS Annual Meeting Chair - TWS-WS President-Elect - Senior Wildlife Biologist & Regulatory Specialist at GEI Consultants AND Certified Wildlife Biologist®

The Western Section of The Wildlife Society 2020 Annual Meeting

PLENARY SPEAKER BIOGRAPHICAL SKETCHES



Jennifer Norris is the field supervisor for the Sacramento Fish and Wildlife Office, one of the Service's largest. Since 2013, she has overseen the implementation of the Endangered Species Act (ESA) and other laws for over 100 listed and trust species, across north-central California—from Shasta to Bakersfield and the Sierras to the Coast. Dr. Norris began her tenure with the Service in 2004 as a fish and wildlife biologist in Albuquerque, New Mexico. Over the course of her career, Dr. Norris has held several conservation positions within and outside of the Service, including Deputy Field Supervisor for the Bay Delta Fish and Wildlife Office, the Rio Grande ESA coordinator for the Albuquerque Fish and Wildlife Office, State Biologist for the New Mexico State Land Office, and as an environmental consultant in San Francisco. Dr. Norris has a B.S. in Resource Policy and Planning from Cornell University, an M.S. in Conservation Biology from the University of Michigan, and a Ph.D. in Ecology from the University of New Mexico. When she's not at work, she can be found exploring beaches, forests or deserts with her husband and teenage son.



Michael Peterson's background in wildlife ecology and management includes conducting scientific research and working on state-level policy. He is currently the inaugural Deputy Commissioner of the newly created Climate and Sustainability Branch for Commissioner Ricardo Lara at the California Department of Insurance. Previously, Peterson was a legislative consultant for then-Senator Lara's California Senate office, focusing on climate change, natural resources, and energy policy, as well as being the consultant for the Select Committee on Ports and Goods Movement and staff liaison with the California Air Resources Board. He previously worked for the California State Senate Committee on Natural Resources and Water, a committee that considers legislation related to wildlife conservation, state parks, natural resources, including the state's rivers, lakes, and oceans. As a researcher, Peterson's work included studies that focused on northern elephant seal toxic chemical accumulation, conservation genetics, and the biology of streams, including anadromous fish and macroinvertebrates. Michael has earned a PhD in Environmental Science, Policy and Management from the University of California, Berkeley, and a Masters degree at Western Washington University.



David Willms is the Senior Director Western Wildlife and Conservation for the National Wildlife Federation, where he works collaboratively with diverse stakeholders to find solutions to complex wildlife and land use issues. He is also an adjunct faculty member at the University of Wyoming's Haub School of Environment and Natural Resources. Earlier in his career he served as a Natural Resource and Wildlife Policy Advisor for Governor Matthew H. Mead of Wyoming, and as a natural resource attorney in private practice and for the Wyoming Attorney General's Office. Mr. Willms has a *Juris Doctorate* degree, and bachelor's degrees in Wildlife & Fisheries Biology and Management as well as Environment and Natural Resources. He lives in Cheyenne, WY with his wife and three children and is an unaccomplished amateur jazz/blues saxophonist.



Kim Delfino oversees the work of Defenders' California program team in protecting and restoring California's imperiled wildlife and the places in which they live. Since joining Defenders in 2000, Kim has developed an expertise in land use planning, endangered species conservation, and water law, including serving on the California Water Commission from 2010-2015. Kim currently serves on the boards of the Water Education Foundation; Sustainable Conservation; and the American Bar Association Section of Environment, Energy and Resources Trends. Kim began her career as an associate attorney in Washington, D.C. with the public interest law firm of Meyer & Glitzenstein, where she specialized in cases involving the Endangered Species Act, Clean Water Act and other environmental laws. She holds a B.A. from UC Davis and a J.D. from McGeorge School of Law at the University of the Pacific.



Kevin Hunting is currently the Biodiversity Coordinator in the California Natural Resources Agency; a cabinet-level Policy Agency within the California State Administration. He is responsible for implementing the Biodiversity Initiative through various state agencies, non-governmental organizations, and local governments. In addition, he currently acts as Policy Advisor to the Secretary of Natural Resources. Prior to this position, he was Chief Deputy Director for the California Department of Fish and Wildlife overseeing department operations, policy development, fish and wildlife management programs, administration of department divisions and functions and strategic program assessment and growth. In this role, he managed complex wildlife, fishery, and natural resource issues effecting California and the west and represented the past two state administrations on legislative proposals effecting wildlife policy and management in California. Mr. Hunting is an expert in the administration of the California Endangered Species Act and led an effort to create science-based assessments of declining California bird species now institutionalized as the Species of Special Concern series. He has

served as an author for several species accounts, editor for professional symposia, and has presented papers at conferences throughout the United States. Mr. Hunting is an honorary life member of the Association of Fish and Wildlife Agencies, a past president and life-time Fellow with the national Wildlife Society, and the recipient of several awards and resolutions for his work in wildlife and conservation. He holds a bachelor's degree in Wildlife Management from Humboldt State University and has worked in wildlife management, conservation planning, resource assessment, and wildlife policy for over 30 years.

The Western Section of The Wildlife Society 2020 Annual Meeting

TWS Western Section Committees need volunteers to serve the Section!



The TWS mission: The Wildlife Society is an international non-profit scientific and educational association dedicated to excellence in wildlife stewardship through science and education. Our mission is to enhance the ability of wildlife professionals and wildlife students to conserve diversity, sustain productivity, and ensure responsible use of wildlife resources and their habitats.

We need your help to complete the TWS mission! Please contact us at tw-west@tw-west.org for more information on becoming involved with the Western Section.

Awards and Grants Committee (Chair Richard Burg, Richard.burg@wildlife.ca.gov) This committee oversees the awards bestowed by Western Section, provides outreach to advertise and administers collection of the grant applications, and provides applications to the President for consideration by Executive Board.

Certification Subcommittee (Chair Rhys Evans, sirsnav@verizon.net) This subcommittee is responsible for promotion, education, and dissemination of Certification information to wildlife professionals and the public in the Western Section area. The Subcommittee promotes certification among employing agencies and private interests.

Conservation Affairs Committee (Chair Kelly Holland, kholland@geiconsultants.com) This committee may review legislative proposals, administrative regulations, environmental assessments and impacts statements, and other subjects or issues affecting wildlife or wildlife habitat within the Western Section, and prepares comments to be submitted on behalf of the Western Section. WS-CAC is part of The Wildlife Society's Conservation Affairs Network.

Diversity Committee (Chair Bayan Ahmed, diversity@tw-west.org) The goal of this committee is to provide support to groups of people who are under-represented in our organization, as well as in the field of wildlife (professionally and recreationally) at large.

Membership Services Subcommittee (Chair Don Yasuda, dyasudatws@gmail.com) This subcommittee addresses services currently provided to Western Section members and identifies services wanted by the membership such as a member directory and outreach.

Newsletter and Outreach (Chair Susanne Marczak, communication@tw-west.org) This committee coordinates with the Executive Board, Chapters, and with members to solicit and prepare content to be included in the Western Section newsletter. This committee also manages the Section website and electronic communications.

Professional Affairs Committee (Chair Don Yasuda, dyasudatws@gmail.com; Vice-Chair Rhys Evans, sirsnav@verizon.net) This committee encourages the maximum number of qualified persons residing or working within the Section's organizational area to become members of The Wildlife Society and the Western Section, and it shall encourage Certification of eligible professionals.

Professional Development Committee (Chair Janine Payne, pdc@tw-west.org) This committee coordinates development of technical workshops and symposia for the Annual Meeting; identifies workshops, training sessions, professional meetings, and course work offered by other individuals and organizations that meet the requirements of the Western Section's Professional Development Program; and provides professional development training where current providers are not meeting the needs of wildlife biologists in the Section.

Program Committee (Chair TBD, President-Elect 2020) This committee works closely with the President-Elect to plan the Annual Meeting, and decides general and concurrent session topics, and structures additional activities for the 2021 Annual Meeting.

Student Affairs Committee (Chair Katie Smith, students@tw-west.org) This committee supports wildlife students and early career professionals by engaging students and faculty in Section activities, and emphasizes career-long benefits and opportunities of active membership in The Wildlife Society.

Sound science for successful projects

We help project proponents comply with the Endangered Species Act and other environmental laws and regulations that protect native plants, animals, and ecosystems.



SERVICES

Pre-construction surveys
Nesting bird surveys
Roosting bat surveys
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Biological constraints analyses

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Wildlife Research on BLM-Managed Public Lands



Do you want to conduct research on the public lands?

If so, an array of opportunities await -- botany, ecology, wildlife, and fisheries. Researchers are studying best practices for rangeland management; determining migratory bird diversity; reintroducing endangered species; examining the dynamics of riparian areas; and so much more.



Could YOUR project help BLM better manage natural lands?



Encompassing more than 240 million acres across a variety of landscapes, BLM-managed public lands comprise a natural scientific laboratory. Many scientific research projects on BLM lands are conducted through partnerships with scientists and scientific organizations, including universities, government agencies, tribes, special focal groups, and non-governmental organizations.

If your organization is a member of a Cooperative Ecosystem Studies Unit (CESU), it might be even easier for you to partner with us.



Early coordination (up to one year in advance) with the BLM field office is recommended, since NEPA¹, ESA², or cultural resource reviews may be needed. Coordinating with BLM ensures conflicts with other authorized uses are minimized or avoided. Your project could help BLM better manage our public lands.

Please contact the local BLM Field Office to discuss your potential research project.

The Directory of BLM field offices can be found at: www.blm.gov\office\national-office

Potential Funding Opportunities can be found at: Grants.gov using Keyword: BLM

More Questions?
Contact Amy Fesnock
afesnock@blm.gov
916-247-2964



1 – National Environmental Policy Act, 2 – Endangered Species Act

Western Wildlife

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- On-line immediately upon acceptance and final formatting
- Original research, notes, reviews, perspectives and correspondence on the ecology, natural history, management, and conservation biology of animals
- Submit materials to David Germano at dgermano@csu.edu



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SAVE THE DATE!
2020 Workshops

Tracking
Feb 29 – Mar 1

Aquatic Herps
March

Riparian Bird
May 29-31


San Joaquin Kit Fox
Sept/Oct

Annual Symposium
Late Oct



Marine Mammal Workshop

Hosted by the California North Coast Chapter
Spring 2020



cnctws.org for info & updates

The Western Section of The Wildlife Society 2020 Annual Meeting

SCHEDULE OF EVENTS

Tuesday, February 4		
8:00am to 5:00pm	Wilderness First Aid with Foster Calm Day 2 of 2, *Extra Fee	Sacramento, Red Lion
8:00am to 8:00pm	Registration	RFB, Holiday Inn
8:00am to 12:00pm	Wildlife Biologist Construction Awareness Training-WildC.A.T., *Extra Fee	Sundial, Red Lion
8:30am to 12:00pm	Bat Species Range and Habitat Association Modeling: Kick-off Meeting, by invite	Quarterhorse, Holiday Inn
8:30am to 4:00pm	Speaker Practice Room	Morgan, Holiday Inn
8:30am to 12:00pm	Southern Sierra Nevada Fisher Working Group/Fisher Science Session	Trinity, Red Lion
9:00am to 11:00am	Marketplace/Exhibit Hall Setup	Ballroom, Holiday Inn
9:30am to 12:00pm	How to Effectively Engage with Policymakers – Lessons Learned at the Federal and State Level Workshop, *Extra Fee	Sierra, Red Lion
11:00am to 10:00pm	Marketplace/Exhibit Hall Open (Hot Drinks Served All Day)	Ballroom, Holiday Inn
12:00pm to 1:00pm	Chapter Officers Meeting & Lunch (2 officers per Chapter, please)	Three Shastas Bar & Grill/Sundial, Red Lion
1:00pm	Official Meeting Opening	
1:00pm to 6:00pm	Concurrent Session <ul style="list-style-type: none"> Wildlife Responses to Fire and Post-Fire Restoration – Sierra Room Ecology and Conservation of Bats – Trinity Room Wildlife and Climate Change – Sierra Room Ecology and Conservation of Birds I – Trinity Room 	Sierra and Trinity/Cascade/Siskiyou, Red Lion
1:30pm to 3:30pm	Job Interview Skills Workshop Learn how to prepare efficiently, take control of the interview and ensure that you are ready for any question that might come your way. Led by HSU Wildlife Career Advisors.	Derby, Holiday Inn
2:00pm to 4:00pm	R Bootcamp Office Hours	Quarterhorse, Holiday Inn
3:25pm to 3:55pm	Afternoon Break – Hot Drinks & Snacks Provided	Holiday Inn Exhibit Hall
3:30pm to 5:30pm	Wildlife Careers Panel Join us for the Wildlife Careers Panel to hear from professional biologists working at State and Federal agencies, non-profit organizations, consulting firms, and corporations. These professionals have a wide variety of backgrounds and experiences, and they will share their current work, as well as what they have learned over the course of their careers, to encourage and inspire you to follow your passion to a career in the wildlife field.	Sundial, Red Lion
4:30pm to 5:30pm	Drop-in with Caroline Murphy for TWS Government Affairs Q&A	Quarterhorse, Holiday Inn
5:15pm to 6:00pm	Student Quiz Bowl Preliminary Round	Thoroughbred, Holiday Inn
6:00pm to 10:00pm	Welcome Reception & Student-Professional Mixer with Wildlife Slideshow (Fiesta Buffet served 6pm to 7:30pm; No-host Bar)	Ballroom, Holiday Inn
8:30pm to 9:30pm	Student Quiz Bowl Championship Match	Ballroom, Holiday Inn

Wednesday, February 5		
7:30am to 9:00am	Breakfast Roundtable Discussion, *Extra Fee (Check Whova for last minute extra tickets)	Sundial, Red Lion
7:30am to 7:00pm	Registration	RFB, Holiday Inn
8:00am to 10:00am	Publishing Papers & Peer Review Workshop The purpose of this workshop is to provide an overview of the process of publishing and reviewing papers. To be discussed are the broad issues of 'why publish, what to publish, when to publish, how to publish, and where to publish' – illustrated with specific examples.	Derby, Holiday Inn
8:00am to 10:00am	CA Fisher Working Group	Trinity, Red Lion
8:00am to 7:00pm	Marketplace/Exhibit Hall Open (Hot Drinks Served All Day)	Ballroom, Holiday Inn
8:30am to 5:30pm	Speaker Practice Room	Morgan, Holiday Inn
8:30am to 6:00pm	Student Study Hall	Thoroughbred, Holiday Inn

The Western Section of The Wildlife Society 2020 Annual Meeting

Wednesday, February 5

9:00am to 10:00am	Conservation Affairs Committee Meeting We respond to requests from the public, TWS Conservation Affairs Network, Western Section members, or committee members, to review and comment on proposals or policies that may affect the conservation of wildlife and their habitats within the geographical scope of our Section. Join us, open to everyone!	Sacramento, Red Lion
9:00am to 11:50am	Resume Critiques (by advance appointment) – See Kristina Hunt at a resume workshop to sign up.	Quarterhorse, Holiday Inn
10:00am to 12:00pm	Keynote Talk: Wildlife Disease 2020 and Beyond: Moving from Microscopes to Policy <ul style="list-style-type: none"> Peregrine Wolff, Wildlife Disease Association; Deana Clifford, CA Dept. Fish & Wildlife / UC Davis Dave Jessup, UC Davis Wildlife Health Center 	Sierra, Red Lion
12:00pm to 1:00pm	Lunch break (Lunches available for pre-purchase)	Holiday Inn
12:00pm to 1:00pm	Field Trip to Turtle Bay East Open Space, Mitigation Site	Meet in front of Red Lion
12:00pm to 1:00pm	Professional Development Committee (PDC) Meeting This is an opportunity for PDC chapter coordinators and Section members to discuss objectives and schedules for future events and activities. Whether your interest is as a subject matter expert for a topic of interest or as host of a facility that would be perfect for field workshops, this meeting is a great chance to make an action plan to serve Western Wildlifers.	Quarterhorse, Holiday Inn
12:00pm to 1:00pm	Joint Retirees/Section Leadership Exec Committee Meeting Please join us! Open to everyone. Are you retired and want to connect with other retired TWS-WS members? Gather informally to talk about issues important to retired Wildlifers.	Thoroughbred, Holiday Inn
12:00pm to 1:00pm	An overview of the CDFW Science Institute Strategic Action Plan goals: how do they affect you? – CDFW Staff training session, by invite	Sundial, Red Lion
1:00pm to 5:05pm	Scientific Concurrent Sessions <ul style="list-style-type: none"> Impacts to Lands and Wildlife from Recreation – Sierra Room Ecology and Conservation of Birds II – Trinity Room Human Dimensions in Wildlife Conservation and Management I – Sierra Room Ecology and Conservation of Mammals I – Trinity Room 	Sierra and Trinity/Cascade/Siskiyou, Red Lion
1:00pm to 2:00pm	Job Interview Panel Join a group of 4-6 invited speakers from agencies, private consulting, and academia who will provide insights into what can be expected during a job interview.	Derby, Holiday Inn
1:15pm to 3:15pm	R Bootcamp Office Hours	Quarterhorse, Holiday Inn
2:00pm to 3:00pm	Student & Diversity Committees Joint Meeting TWS-WS. Join us! Open to everyone.	Thoroughbred, Holiday Inn
2:00pm to 4:00pm	Poster Setup	Ballroom, Holiday Inn
2:45pm to 3:05pm	Afternoon Break – Hot Drinks & Snacks Provided	Holiday Inn Exhibit Hall
3:00pm to 5:00pm	Resume Workshop: A Beginner's Guide: The Basics of a Resume, C.V., and Interview Skills	Derby, Holiday Inn
3:00pm to 5:00pm	Wildlife Photography for Wildlife Biologists Learn tricks of the trade in finding, approaching, composing, and reading the behavior of your subject. We'll discuss how to utilize your settings, play with light, and process your images with a few minutes for you to share your best images at the end for critiquing if you'd like.	Sundial, Red Lion
4:00pm to 7:00pm	Poster Viewing and Judging	Ballroom, Holiday Inn
5:00pm to 6:30pm	Humboldt Wildlife Alumni Meeting/Mixer	Sacramento Room, Red Lion
5:00pm to 7:00pm	No-Host Cocktail Reception	Foyer, Red Lion
7:00pm to 10:00pm	Annual Members Banquet, Awards Ceremony, and Bucket Raffle, *Check Whova and Reg Desk for extra tickets (Those not dining may join at 8pm for the Awards Program and Raffle)	Ballroom, Red Lion

Thursday, February 6

7:00am to 8:00am	Breakfast Social, *Extra Fee (Check Whova for last minute extra tickets)	Sundial, Red Lion
7:30am to 8:00pm	Registration	RFB, Holiday Inn
7:30am to 8:30am	Western Wildlife Planning Meeting Western Wildlife is our peer-reviewed online journal. All are welcome to join us to talk about Western Wildlife. Join us, open to everyone!	Sacramento, Red Lion
8:00am to 9:00pm	Marketplace/Exhibit Hall Open (Hot Drinks Served All Day)	Ballroom, Holiday Inn

The Western Section of The Wildlife Society 2020 Annual Meeting

Thursday, February 6

8:00am to 9:00pm	Poster Viewing and Judging	Ballroom, Holiday Inn
8:00am to 12:40pm	Scientific Concurrent Sessions <ul style="list-style-type: none"> Wildlife and Forest Management and Policy – Sierra Room Ecology and Conservation of Amphibians and Reptiles – Trinity Room Mitigation Measures and Conservation Planning: Ways to Measure Success – Sierra Room Ecology and Conservation of Mammals II – Trinity Room 	Sierra and Trinity/Cascade/Siskiyou, Red Lion
8:00am to 6:30pm	Student Study Hall	Thoroughbred, Holiday Inn
8:30am to 5:30pm	Speaker Practice Room	Morgan, Holiday Inn
10:00am to 12:00pm	Resumé Workshop: Advanced Resume, C.V., and Interview Skills	Derby, Holiday Inn
10:00am to 12:00pm	R Bootcamp Office Hours	Quarterhorse, Holiday Inn
10:05am to 10:35am	Morning Break – Hot Drinks & Snacks Provided	Holiday Inn Exhibit Hall
12:40pm to 2:00pm	Lunch break (Lunches available for pre-purchase)	Holiday Inn
12:40pm to 2:00pm	Field Trip to Willow Pond and McConnell Arboretum & Botanical Gardens at Turtle Bay Exploration Park	Meet in front of Red Lion
12:40pm to 2:00pm	Career Fair	Holiday Inn
1:00pm to 2:00pm	How *Not* to Give a Scientific Presentation Workshop Join us for this informative (and fun!) workshop led by retired California State University, Chico professor Jon Hooper. Jon has been leading communication workshops around the country for the past 40 years. He is a Certified Wildlife Biologist, a Certified Interpretive Trainer, and has a Ph.D. in wildlife ecology.	Derby, Holiday Inn
2:00pm to 4:00pm	Plenary Session: Navigating the Intersections of Science and Policy <ul style="list-style-type: none"> Jennifer Norris, U.S. Fish and Wildlife Service Michael Peterson, California Department of Insurance David Willms, National Wildlife Federation Kim Delfino, Defenders of Wildlife Kevin Hunting, CA Natural Resources Agency 	Sierra, Red Lion
4:00pm to 4:30pm	Afternoon Break – Hot Drinks & Snacks Provided	Red Lion Foyer AND Holiday Inn Ballroom
4:00pm to 6:30pm	R Bootcamp Office Hours	Quarterhorse, Holiday Inn
4:30pm to 5:30pm	Annual Business Meeting and Members Forum Reports summarizing Executive Board accomplishments and key highlights will be located in the back of the room. Minutes will be recorded during this meeting to track issues, ideas, and action items for the Executive Board. Attendance by all members is encouraged.	Sierra, Red Lion
6:15pm	Silent Auction Ends	Ballroom, Holiday Inn
6:30pm to 8:30pm	Poster Reception with Snacks and No Host Bar	Ballroom, Holiday Inn
8:30pm to 10:00pm	Chapter Meetings <ul style="list-style-type: none"> Sac Shasta – Sierra/RL Central Coast – Trinity/RL SF Bay – Sacramento/RL North Coast – Sundial/RL San Joaquin – Thoroughbred/HI Southern CA – Derby/HI 	

Friday, February 7

7:00am to 8:00am	Breakfast Social, *Extra Fee (Check Whova for last minute extra tickets)	Sundial, Red Lion
7:30am to 4:00pm	Registration Open	RFB, Holiday Inn
8:00am to 12:20pm	Scientific Concurrent Sessions <ul style="list-style-type: none"> Wildlife Diseases and Pathology – Sierra Room Wildlife Techniques and Technologies – Trinity Room Human Dimensions in Wildlife Conservation and Management II – Sierra Room Habitat Restoration and Multi-Benefit Projects – Trinity Room 	Sierra and Trinity/Cascade/Siskiyou, Red Lion
8:00am to 3:00pm	Marketplace/Exhibit Hall Open (Hot Drinks Served All Day)	Ballroom, Holiday Inn

The Western Section of The Wildlife Society 2020 Annual Meeting

Friday, February 7

8:30am to 10:00am	Sierra Nevada Red Fox Working Group	Derby, Holiday Inn
8:30am to 1:00pm	Speaker Practice	Morgan, Holiday Inn
9:00am to 10:00am	Elevator Speech Training for Students Students interested in pursuing graduate school will hear elevator speeches from Western Section Research Principle Investigators (P.I.s) for Masters and Ph.D. programs. Students attending this workshop will then share interests in a speed-round session. What is an elevator pitch? An elevator pitch is a concise, carefully planned, and well-practiced marketing message about your professional self that your grandmother should be able to understand in the time it would take to ride up an elevator. It should contain a hook or theme and last no longer than 60 seconds; resonate with your unique personality and interests, and contain a follow-up request for a business card, a referral, or future meeting.	Thoroughbred, Holiday Inn
10:00am to 4:00pm	Student Study Hall	Thoroughbred, Holiday Inn
10:05am to 10:35am	Morning Break – Hot Drinks & Snacks Holiday Inn Exhibit Hall	Holiday Inn Exhibit Hall
10:30am to 5:00pm	Sierra Nevada Red Fox Conservation Advisory Team (<i>By invitation only, Sierra Nevada Conservation Strategy</i>)	Derby, Holiday Inn
12:20pm to 1:30pm	Lunch break (Lunches available for pre-purchase)	Holiday Inn
1:30pm to 5:30pm	Scientific Concurrent Sessions <ul style="list-style-type: none"> Public Policy and Wildlife Management – Sierra Room Planning for Recovery – Trinity Room Wildlife Professionals: Agency Coordination & Collaboration – Sierra Room Wildlife Conservation and Habitat Management in Lassen / Shasta Landscapes – Trinity Room 	Sierra and Trinity/Cascade/Siskiyou, Red Lion
2:00pm to 3:00pm	Meeting Planning Committee Wrap-Up	Red Lion, 3 Shastas
3:35pm to 3:45pm	Afternoon Break – Hot Drinks & Snacks in Red Lion Foyer (new location!)	Red Lion Foyer



Website: mccormickbiologicalinc.com; Instagram: [mccormickbiological](https://www.instagram.com/mccormickbiological); Facebook: [mccormickbiologicalinc](https://www.facebook.com/mccormickbiologicalinc)

The Western Section of The Wildlife Society 2020 Annual Meeting

SCIENTIFIC CONCURRENT SESSION TALK SCHEDULE

SESSION ABSTRACTS: To conserve paper, abstracts for concurrent and poster sessions are provided electronically. Abstracts are available to view, download or print via the Western Section Annual Meeting website: <https://tinyurl.com/tws2020>

Room	Sierra Room - Red Lion Hotel	Trinity Room - Red Lion Hotel
	Wildlife Responses to Fire and Post-Fire Restoration Session Chair: Ryan Baumbusch, Oregon State University	Ecology and Conservation of Bats Session Chair: Dave Johnston, HT Harvey & Associates
Tuesday 1:05 PM	Is severe fire good or bad for spotted owls? Gavin Jones	The Great Causeway Bat Count: can community science and data mining generate rigorous population data? Leila Harris
Tuesday 1:25 PM	Impacts of the Carr Fire on Whiskeytown streams: The role of National Park Service Long-Term Monitoring in studying direct and indirect impacts to the ecosystem Eric Dinger	An Adaptive Sampling Approach to Estimating the Number of Hibernating Bats at Lava Beds National Monument Theodore Weller
Tuesday 1:45 PM	Mesocarnivores at Whiskeytown NRA after the 2018 Carr Wildfire Joan Hagar	Bats of the California Channel Islands: New Records with New Methods Patricia Brown
Tuesday 2:05 PM	Landscape-level pyrodiversity promotes diversity of forest carnivores, but possibly not of their prey Brett Furnas	Roosting ecology of western bats: The other California real-estate battleground Gabriel Reyes
Tuesday 2:25 PM	Fire, forest restoration, and spotted owl conservation under climate change Gavin Jones	Notes from the field: recent lessons in bat acoustic monitoring and further suggestions to up your game Joseph Szewczak
Tuesday 2:45 PM	Maladaptive Nest Site Selection and Reduced Nest Success in Female Sage-Grouse Following Wildfire Ian Dudley Student Paper	What's That Sound? Acoustic Monitoring of Little Brown Bat (<i>Myotis lucifugus</i>) Seasonal Activity in a Historic Building Emma Sutphin
Tuesday 3:05 PM	Wildfire Impacts on Demographic Rates of Greater Sage-grouse Emmy Tyrrell	Bat Use of Culverts Jill Carpenter
Session Break		
Room	Sierra Room - Red Lion Hotel	Trinity Room - Red Lion Hotel
	Wildlife and Climate Change Session Chair: Rick Williams, P G & E	Ecology and Conservation of Birds I Session Chair: David Riensche, East Bay Regional Park District
Tuesday 4:00 PM	A Habitat Suitability Model for Identifying Willow Flycatcher Habitat Refugia in a Changing Climate Lynn Schofield	Ch-Ch-Ch Change is Good For Yellow-billed Cuckoos Barbara Raulston
Tuesday 4:20 PM	Assessing Mesocarnivore Response to Severe Drought through Long-Term Population Monitoring Jody Tucker	Purple Martins Nesting in Sacramento: A Last Chance at Conservation? Daniel Airola
Tuesday 4:40 PM	Rapid and Varied Responses of Songbirds to Climate Change in California Coniferous Forests Brett Furnas	Influence of beaver presence and habitat modification on willow flycatcher occupancy in the Sierra Nevada Helen Loffland
Tuesday 5:00 PM	Breeding Variability of the Sierra newt (<i>Taricha sierrae</i>) in an Intermittent Central California Foothill Stream: Results of a Long-Term Study Before and After Drought Julie Vance	Feral Horses Disrupt Greater Sage-Grouse Lekking Activity in the Great Basin Diana Munoz
Tuesday 5:20 PM	Influence of water temperature on two species of fairy shrimp in southern California vernal pools Kim Klementowski	Parasite prevalence and its effect on song Faith De Amaral
Tuesday 5:40 PM	Population Genetics of an American Pika Hybrid Zone in Rocky Mountain National Park, CO Jessica Castillo Vardaro	Haemoproteosis lethality in a woodpecker, with molecular and morphological characterization of <i>Haemoproteus velans</i> (Haemosporida, Haemoproteidae) Tierra Groff

The Western Section of The Wildlife Society 2020 Annual Meeting



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Biological Studies & Resource Management Throughout California & The West



- ◆ Special Status Species Research/Recovery Actions
- ◆ Habitat Enhancement/ Creation
- ◆ Mitigation & Compliance Monitoring
- ◆ Camera Trapping/ Wildlife Inventories
- ◆ Radio Telemetry/ Acoustic Monitoring
- ◆ Permitting/Agency Consultation
- ◆ Wetland Delineations/Botanical Studies
- ◆ GIS & Mapping



The Western Section of The Wildlife Society 2020 Annual Meeting

Room	Sierra Room - Red Lion Hotel	Trinity Room - Red Lion Hotel
	Impacts to Lands and Wildlife from Recreation Session Chair: Rich Burg, CDFW	Ecology and Conservation of Birds II Session Chair: Dan Airola, Conservation Research & Planning
Wednesday 1:05 PM	Balancing Conservation and Recreation - Trails on Conservation Lands Ron Unger	Mapping the Barred Owl Invasion of California Stephanie Houtman
Wednesday 1:25 PM	Killer Potato Chips - Changing Visitor Behavior to Conserve an Endangered Old Growth Forest Nesting Seabird at Redwood National and State Parks, California Keith Bensen	Identifying Northern Spotted Owl Individuals Using Vocalizations Obtained From Autonomous Acoustic Recorders Holly Horan
Wednesday 1:45 PM	Big Wall Bats Breeanne Jackson	Experimental removal of Barred Owls in the Sierra Nevada Danny Hofstadter Student Paper
Wednesday 2:05 PM	Factors influencing the abundance of wintering Western Snowy Plovers at Crown Beach State Memorial Park David Riensche	Integrating GPS tagging and nest video monitoring reveal new insights into spotted owl foraging behavior Ceeanna Zulla Student Paper
Wednesday 2:25 PM	Sea The Value: Economics of Wildlife Ecotourism in La Jolla Cove Lily Olmo Student Paper	Diet Composition of Barred Owls (<i>Strix varia</i>) in the Pacific Northwest Ryan Baumbusch Student Paper
Session Break		
Room	Sierra Room - Red Lion Hotel	Trinity Room - Red Lion Hotel
	Human Dimensions in Wildlife Conservation and Management I Session Chair: Linda Leeman, Ascent Environmental	Ecology and Conservation of Mammals I Session Chair: Kelley Stewart, University of Nevada, Reno
Wednesday 3:10 PM	Spatiotemporal overlap and partitioning of mammalian mesopredators across an urbanization gradient in California's Central Valley. Chad Moura Student Paper	Local Scale Genetic Structure of Tule Elk in Northern California Tom Batter Student Paper
Wednesday 3:30 PM	What makes an urban bear urban? Mario Klip	Predicting Parturition: Identifying Elk Calving Events through Movement and Space Use Adam Mohr Student Paper
Wednesday 3:50 PM	Regulating cannabis cultivation: recent observations from an environmental compliance perspective Allison Fuller	Plasticity in Migratory Behaviors of Male Bighorn Sheep Kristin Denryter
Wednesday 4:10 PM	Impacts of Trespass Cannabis Cultivation on Public Lands to Small Mammal Populations Greta Wengert	An evaluation of the effectiveness of multi-source translocations for maintaining levels of genetic diversity in reintroduced herds of desert bighorn sheep Joshua Jahner
Wednesday 4:30 PM	It's a Trap! Cannabis Cultivation Sites as Ecological and Evolutionary Traps for Wildlife Mourad Gabriel	Mule Deer Migrations in Highway Underpasses Molly Caldwell
Wednesday 4:50 PM	Coexisting with cannabis: wildlife response to marijuana cultivation Phoebe Parker-Shames Student Paper	Transcriptome-based analyses as an important tool to inform translocation management of bighorn sheep Devaughn Fraser

THE WILDLIFE SOCIETY
SOUTHERN CALIFORNIA CHAPTER

2020 NEWS & EVENTS

Join us for our Chapter meeting on Thursday February 6th from 8:30pm—10:00pm in Derby/Holiday Inn. See friends, make new ones, and bring ideas for a future events discussion!

Stop by our Chapter table in the Exhibit Hall (Holiday Inn) to chat with Board Members and purchase merchandise.

Want to become more involved? Openings for Co-Regional Reps, Committee Co-Chairs, Committee members, and more!

Stay Informed About Upcoming Events! Check out our website <http://wildlife.org/socal/> Facebook @socalwildlife & LinkedIn pages.

The Western Section of The Wildlife Society 2020 Annual Meeting

SESSION ABSTRACTS: To conserve paper, abstracts for concurrent and poster sessions are provided electronically. Abstracts are available to view, download or print via the Western Section Annual Meeting website: <https://tinyurl.com/tws2020>

Room	Sierra Room - Red Lion Hotel	Trinity Room - Red Lion Hotel
	Wildlife and Forest Management and Policy Session Chair: Karen Converse, CDFW	Ecology and Conservation of Amphibians and Reptiles Session Chair: Jeff Alvarez, The Wildlife Project
Thursday 8:05 AM	Retrospective assessment of fuel break effectiveness for containing rangeland wildfires within the Great Basin Cali Roth	Phylogeographic Origin of California Slender Salamanders (<i>Batrachoseps attenuatus</i>) in the Sutter Buttes Eric Olson
Thursday 8:25 AM	Black-backed woodpecker occupancy in burned and beetle-killed forests: disturbance agent matters Robert Wilkerson	In situ population enhancement of an at-risk population of foothill yellow-legged frogs, <i>Rana boylei</i> , in the North Fork Feather River, Butte County, California. Colin Dillingham
Thursday 8:45 AM	Elevational gradients strongly mediate habitat selection patterns in a nocturnal predator H. Anu Kramer	Conservation Assessment of the California Legless Lizard (<i>Anniella</i>) Reagen O'Leary
Thursday 9:05 AM	Shifting Management Paradigms: Conserving functional fisher habitat in the new Sierra Nevada Craig Thompson	The Importance of Shrubs to the Thermal Ecology of Blunt-nosed Leopard Lizards Nicole Gaudenti Student Paper
Thursday 9:25 AM	Exploring the den cluster concept: insights from fisher (<i>Pekania pennanti</i>) reproductive ecology and implications for management Rebecca Green	Distribution and Occupancy of Northwestern Pond Turtles and Red-eared Sliders in the Sacramento Valley and Sacramento-San Joaquin River Delta Alexandria Fulton
Thursday 9:45 AM	Plant selection by bumble bees in montane riparian habitat of California Jerry Cole	The Color of Conservation: Analyzing Color Polymorphism in the Giant Gartersnake Anna Jordan Student Paper
Session Break		
Room	Sierra Room - Red Lion Hotel	Trinity Room - Red Lion Hotel
	Mitigation Measures and Conservation Planning: Ways to Measure Success Session Chair: Elizabeth Meisman, GHD, Inc.	Ecology and Conservation of Mammals II Session Chair: Esther Burkett, CDFW
Thursday 10:40 AM	Areas of Conservation Emphasis (ACE). Understanding the distribution of biodiversity in California. Ryan Hill	Occupancy patterns of Sierra Nevada red fox and their competitors in the high alpine of Yosemite National Park David Green
Thursday 11:00 AM	Modeling the Management of Non-native Game Mammals to Reduce Future Conflicts with Native Plant Conservation in Hawaii Christina Leopold	Assessing Forest Structure, Predation Risk, Diet, Energetics, and Movement to Define Coastal Marten Habitat Katie Moriarty
Thursday 11:20 AM	Science to inform a tiered management approach to reduce raven impacts on greater sage-grouse Pat Jackson	Response of San Joaquin Kit Foxes to the Topaz Solar Farm: Implications for Conservation of Kit Foxes Brian Cypher
Thursday 11:40 AM	Conservation of San Joaquin Antelope Squirrels: Ecological Associations, Habitat Suitability, and Conservation Strategies Lawrence Saslaw	Estimating energy expenditure by fishers using GPS telemetry data Roger Powell
Thursday 12:00 PM	Bat mitigation structures on bridges and culverts in California Dave Johnston	Does natural selection affect gene flow between nonnative and native red fox populations? Sophie Preckler-Quisquater Student Paper
Thursday 12:20 PM	San Joaquin kit fox presence at a large-scale solar facility in Monterey County Justin Purnell	Otter Spotter: Community Science Initiative Increases River Otter Range Maps and Highlights River Otters Role in Wetland Ecology Megan Isadore

The Western Section of The Wildlife Society 2020 Annual Meeting

Room	Sierra Room - Red Lion Hotel	Trinity Room - Red Lion Hotel
	Wildlife Diseases and Pathology Session Chair: Deana Clifford, CDFW / UC Davis	Wildlife Techniques and Technologies Session Chair: Susanne Marczak, San Diego Zoo
Friday 8:05 AM	Addressing the threat of White-nose Syndrome in bats: Preparation for and initial responses to the detection of <i>Pseudogymnoascus destructans</i> in California. Scott Osborn	Comparison of Autonomous acoustic recorder unit occupancy surveys to Northern Spotted Owl (<i>Strix occidentalis caurina</i>) demographic monitoring and site occupancy J. Mark Higley
Friday 8:25 AM	Finding initial incursions of Pd and understanding potential impacts: NPS contributions to detecting, evaluating, and managing for WNS in northern California. Alice Chung-MacCoubrey	Diet Analysis using Fecal Metabarcoding for a Threatened Desert Ground Squirrel Cody Aylward
Friday 8:45 AM	The first suspected case of Pd in California: a pilot study monitoring Yuma and little brown myotis colonies Christina Walker Student Paper	Salt Marsh Harvest Mouse Landscape Genetics and Connectivity within the Marshes of Suisun Bay Mark Statham
Friday 9:05 AM	Avian Immune Response to Parasitic Infections in a Natural Environment Wilmer Amaya-Mejia Student Paper	Telemetry data management in R: telemetR Mitchell Gritts
Friday 9:25 AM	Isolation and characterization of avian influenza virus in the Sacramento Valley Troy Cline	Dog Detections of Bat and Small Bird Carcasses in Wind Turbine Fatality Monitoring Kenneth Smallwood
Friday 9:45 AM	A New Approach for Treating Avian Botulism John Vradenburg	Use of noninvasive DNA to estimate density and structure of black bears in the Lake Tahoe Basin Julia Owen Student Paper
Session Break		

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The Western Section of The Wildlife Society 2020 Annual Meeting

Room	Sierra Room - Red Lion Hotel	Trinity Room - Red Lion Hotel
	Human Dimensions in Wildlife Conservation and Management II Session Chair: Natasha Dvorak, Swaim Biological	Habitat Restoration and Multi-Benefit Projects Session Chair: Cliff Feldheim, DWR
Friday 10:40 AM	Effects of Wind Turbine Curtailment on Bird and Bat Fatalities Kenneth Smallwood	Beach Stone Lakes Mitigation Multi-benefit Woodland Corridor: Balancing Flood Risk Reduction with Ecological Value Lynn Hermansen
Friday 11:00 AM	The California Department of Fish and Wildlife's Wildlife Incident Reporting System: Efforts to evaluate reporting behaviors Tiffany Chen	Bark Beetle, Whitebark Pine Removal, and a Recreation Legacy Lia Webb
Friday 11:20 AM	Effects of Drought on Reported Incidents of Human-Wildlife Conflict in California Helen Bowman	The science of reclaiming public land Cannabis cultivation sites: A process-based evaluation of reclamation efforts to maximize wildlife and ecosystem benefits Ivan Medel
Friday 11:40 AM	Aiming for Pertinent Conservation Impacts: Strategic Planning and Decision-Making through Standardization and Data-Driven Analyses Junko Hoshi	Creating large oxbow ponds parallel to a California coastal stream to create California Red-legged Frog breeding habitat: Lessons learned Michael Westphal
Friday 12:00 PM	Wastewater Treatment Plants and Endangered & Threatened Wildlife Species Overlap in California Watersheds Anna Cassidy Student Paper	Where Will All the Turtles Go? Western Pond Turtle Movement and Habitat Use in Suisun Marsh Melissa Riley
Session Break		
Room	Sierra Room - Red Lion Hotel	Trinity Room - Red Lion Hotel
	Public Policy and Wildlife Management Session Chair: Junko Hoshi, CDFW	Endangered Species: Planning for Recovery Session Chair: Scott Osborn, CDFW
Friday 1:35 PM	CEQA Streamlining to Reduce Wildfire Risk: California Vegetation Treatment Program (CalVTP) Lara Rachowicz	The Center for Biological Diversity's Work to Protect Rare Amphibians and Reptiles in the Western US Jenny Loda
Friday 1:55 PM	Species-Specific Impact Mitigation for the California Vegetation Treatment Program Allison Fuller	California Red-Legged Frog Response to Pond Restoration David Riensche
Friday 2:15 PM	Delivering On-the-Ground Conservation Impacts via State Wildlife Action Plans - A Nexus for Integrated Ecosystem Management Junko Hoshi	Use of Integrated Population Models (IPMs) Improves Population Estimates in a Species Reintroduction Project Steven Mathews
Friday 2:35 PM	Trends in Hunting and Fishing License Sales and their Implications for California's Recruitment, Retention, and Reactivation Program Alex Heeren	Assessing spatiotemporal patterns in California spotted owl vocalizations with novel acoustic tags Dana Reid Student Paper
Friday 2:55 PM	The California Department of Fish and Wildlife and Commercial Cannabis Cultivation: How We Protect Fish and Wildlife Resources in a Growing Cannabis Industry Ange Baker	Landscape and microhabitat modeling inform conservation actions for the endangered San Bernardino kangaroo rat Rachel Chock
Friday 3:15 PM	Bird focal species monitoring informs adaptive management of California's private rangelands and application of conservation programs Katharine Howard	Influences on Foraging Preferences of the Endangered Pacific Pocket Mouse (<i>Perognathus longimembris pacificus</i>): Implications for a Novel Conservation Strategy Brigit Harvey
Session Break		

SESSION ABSTRACTS: To conserve paper, abstracts for concurrent and poster sessions are provided electronically. Abstracts are available to view, download or print via the Western Section Annual Meeting website:
<https://tinyurl.com/tws2020>

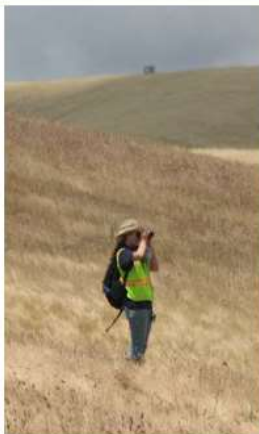
The Western Section of The Wildlife Society 2020 Annual Meeting

Room	Sierra Room - Red Lion Hotel	Trinity Room - Red Lion Hotel
	Wildlife Professionals: Agency Coordination & Collaboration Session Chair: Rhys Evans, Vandenberg Air Force Base	Wildlife Conservation and Habitat Management in Lassen / Shasta Landscapes Session Chair: Rachel Mazur, National Park Service
Friday 3:50 PM	Bridging Science and Management - The Role of Regulations in Conserving California's Wildlife Ona Alminas	Sierra Nevada red fox captures in the Lassen Peak Region continue to reveal new information on denning ecology, habitat use, and inbreeding Jennifer Carlson
Friday 4:10 PM	Developing and enhancing partnerships with Native American tribes to support cross-boundary wildlife conservation Serra Hoagland	Genomic consequences of inbreeding and admixture in the Sierra Nevada red fox Cate Quinn
Friday 4:30 PM	Environmental Advocacy: Partnerships for Public Trust Pam Young	An update on implementing the Northern Spotted Owl Recovery Plan in interior northern California. Robert Carey
Friday 4:50 PM	A Collaborative Approach to Meadow Restoration Bennie Johnson Howell	

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- Construction Monitoring
- Trail/Recreation Planning
- Invasive Plant and Wildlife Management
- Public Outreach
- Conservation Plan Preparation (NCCP and HCP)
- Engineering Services
- Hydrology and Geomorphic Studies
- Wildfire Planning and Response

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POSTER SESSION

Thursday, February 6, 2020: 6:30-8:30pm (Holiday Inn Ballroom)

Chairs: Carlos Alvarado and Allison Fuller, Ascent Environmental

Poster Board Location	Abstract Title	Presenter
1	Mapping the Barred Owl Invasion of California	Stephanie Houtman
2	Body Condition of Barred Owls (<i>Strix varia</i>) in the Pacific Northwest	Ryan Baumbusch
3	Partial Consumption of Prey in Barred Owl (<i>Strix varia</i>) Diets	Uta Briggs
4	Morphology of the Barred Owl (<i>Strix varia</i>) in the Pacific Northwest	Leo Koerner
5	Identification and Quantification of Barred Owl (<i>Strix varia</i>) Intestinal Parasites in the Pacific Northwest	Samantha Souza
6	Prey Sharing between Barred Owls (<i>Strix varia</i>) in Oregon and Washington	Heather Thomas
7	Lessons Learned from Establishing a Burrowing Owl Breeding Node in San Diego County	Savannah Perez
8	Habitat Classification for Disappearing Burrowing Owl Habitat in Southern California	Kendall Hines
9	Project WAFS: An Eight State Short-eared Owl Survey Effort	Carie Battistone
10	Common Ravens and Other Predators Disrupt Greater Sage-Grouse Lekking Activities	Joseph Atkinson
11	Securing California's Natural Heritage: The California Biodiversity Initiative	Kimberly Tenggardjaja
12	Areas of Conservation Emphasis (ACE). Understanding the Distribution of Biodiversity in California.	Sandra Hill
13	Improving CDFW's Capacity to Support Adaptive Management by Measuring and Sharing its Progress on California State Wildlife Action Plan Implementation	Nicole Russell
14	Regional Conservation Investment Strategies Program: A New Conservation Tool	Brandon Amrhein
15	Supporting the Integration of Climate Change Science and Adaptation Strategies into Fish and Wildlife Management	Whitney Albright
16	Comparing Effects of Payments for Ecosystem Services Programs on Species Richness over Time and Space	Alexandra Yost
17	Reducing the Impact of Common Ravens on Greater Sage-Grouse through Egg-Oiling	Corina Sanchez
18	Prevalence of Babesia and Malarial Diseases on Common Murres to be Linked to Sudden High Mortality Rates	Jenna Aquino
19	Prevalence of Asymptomatic Avian Pox in Californian Hummingbirds	Aoife Galvin
20	Decades of Monitoring Trends in a Protected Breeding Bird Assemblage to Improve Riparian Conservation	Alan Chan-Alvarado
21	Summer Habitat Used by American Kestrels in Santa Clara County, California	Nicole Tomes-Orlale
22	Recent Dynamics and Trends of Landbird Populations on Saipan, Northern Marianas Islands.	Lauren Helton
23	Monitoring Light and Temperature Factors for Nesting Success and Habitat Choice in the California Least Tern	Michelle Gonzalez
24	Habitat Use of Hawaiian Short-eared Owls	Chad Wilhite
25	Partners in Flight: Launching the Next 30 Years of Collaborative Bird Conservation. CANCELLED	Geoffrey Geupel
26	Predation on Breeding Western Snowy Plovers in Salt Pond	Jessica Gonzalez
27	Changes in the California Least Tern Diet Throughout the Breeding Season at the Seal Beach National Wildlife Refuge	Amanda Martinez
28	Coming or Going: Tidally Influenced Habitat Selection of Shorebirds and Waterfowl on Humboldt Bay	Andrew Manning
29	Evidence of the Influence of Predation and Competition on Nest Density and Nesting Success in California Least Terns	Kadi Erickson
30	Temperature Loggers Effectively Monitor Shorebird Nest Survival	Samuel Vassallo
31	Roost Selection in Spotted Owls across Elevational Gradient: Preliminary Results	Kate McGinn
32	Courtship Flight Size in Northern Pintail Ducks (<i>Anas acuta</i>)	Kevin Dodd

The Western Section of The Wildlife Society 2020 Annual Meeting

Poster Board Location	Abstract Title	Presenter
33	Estimating Space Sharing between Seabird, Pinniped, and Human Use in the Northern California Coast	Claire Nasr
34	Trapped: A Swift Story	Matt Sharp-Chaney
35	American Bullfrog; Guidance for the Control and Management of this Invasive Non-native Predator	Michael van Hattem
36	Phylogeographic Origin of California Slender Salamanders (<i>Batrachoseps attenuatus</i>) in the Sutter Buttes	Eric Olson
37	Factors Influencing Larval Salamander Densities in Existing and Recently Created Ponds	Jared Elia
38	California Red-legged Frog Response to Pond Restoration	Connor Tutino
39	Use of DNA Sequencing to Identify the Origin of Northwestern and Southwestern Pond Turtles in Captive Breeding Programs	Rachel Morrow
40	Habitat Use and Oviposition Site Selection of a Disjunct Population of Red-bellied Newt (<i>Taricha rivularis</i>)	Joie de Leon
41	Assessing Impacts of Artificial Hydrology, Land Use and Water Quality on Amphibian Occupancy at Restored Wetlands in the California Central Valley	Kaitlyn Hernandez
42	Impacts of the 2015 Rough Fire and Prescribed Fire History on Bats in Kings Canyon National Park	Samantha Bever
43	Quantifying Moth Community Response to Fire in a California Chaparral System	Andrew Overton
44	Going beyond Broodstock Based Conservation: Genetic Diversity in White Sturgeon (<i>Acipenser transmontanus</i>) Repatriated Larvae in the Snake River, Idaho	Amanda Coen
45	Polarized Light Produced by Utility-scale Solar Facilities May Attract Aquatic Insects	Elizabeth McNamara
46	The Influence of Human Disturbance on the Coupled Dynamics of Predators and Prey	Amy Van Scoyoc
47	Identifying Least Conflict Lands for Renewable Energy Development CANCELLED	Justin Brice
48	Bat Diversity and Activity Patterns in a Heterogeneous Landscape	Glen Logan
49	Changes in Bat Biodiversity from 2001-2006 to 2019 in Sequoia and Kings Canyon National Parks	Natalie Yorba
50	Bat Activity as a Function of Lunar Cycles	Chrisionna Graves
51	Bat Biodiversity within Sequoia and King's Canyon National Parks	Robert Seward
52	Assessing habitat use by the Hawaiian hoary bat in Helemano Wilderness Recreational Area, O'ahu.	Lesley Davidson
53	Seasonal Presence and Foraging Patterns of Bats at California Vernal Pools	Leandra Boodoo
54	Landscape Analysis of Hemorrhagic Disease Exposure in Southern Mule Deer	Emma Tomaszewski
55	Impact of a Sarcoptic Mange Epidemic on a Population of Endangered San Joaquin Kit Foxes	Erica Kelly
56	<i>Escherichia coli</i> and <i>Salmonella enterica</i> in Roosevelt Elk (<i>Cervus canadensis roosevelti</i>) and Cattle: Enteric Pathogens at the Wildlife-Domestic Interface	Emily Buck
57	Identifying Rocky Mountain Elk Calving Areas on the Plumas National Forest in Northeastern California	Abigail Marshall
58	Resource Selection Function of Elk in Northeastern Nevada	Meghan Keating
59	An Evaluation of Mitigation Involving the San Francisco Dusky-footed Woodrat	Rachael Burnham
60	Evaluating Uncertainty in Spatial Capture Recapture Estimates with a Multi-site, Multi-year Sampling Framework: a Utah Black Bear Case Study	Greta Schmidt
61	Estimating Abundance and Density of a Harvested Ungulate Population Using an Integrated Modelling Approach	Kylie Curtis
62	Intrapopulation Foraging Response of California sea lions (<i>Zalophus californianus</i>) to Environmental Stress	Madison Davis
63	Are Camera Surveys Enough to Assess Porcupine Populations in Northern California?	Bennie Johnson Howell
64	Effect of Environmental Variation on Ecological Attributes of Endangered San Joaquin Kit Foxes	Tory Westall
65	Optimizing DNA Recovery from Museum Specimens of Salt Marsh Harvest Mouse and Analysis of Historical Genetic Diversity	Cody Aylward
66	Design of a Passive Device to Simultaneously Mark and Collect Non-invasive Genetic Samples from Tree Squirrels	Theodore Tran

The Western Section of The Wildlife Society 2020 Annual Meeting

Poster Board Location	Abstract Title	Presenter
67	San Francisco Urban Coyote Repopulation: Genetic Profiling Using Noninvasive Techniques	Monica Serrano
68	The Distribution and Role of California Ground Squirrels at Stanford University	Kathryn Preston
69	Occurrence of Fisher (<i>Pekania pennanti</i>) Prey Species in a Landscape Altered by Tree Mortality	Rebecca Green
70	Interaction Between Salt Marsh Physical Characteristics and the Rodent Community in a Southern California Tidal Marsh	Kyra MacFarlane
71	Of Meadows and Marmots: an Investigation of Climate Change Impacts on the Declining Endemic Olympic Marmot (<i>Marmota olympus</i>) Population	Maia Murphy-Williams
72	A Case for Shiny: Interactive Data Analysis	Mitchell Gritts
73	Optimizing Tissue Sampling and Extraction Protocols for Next-generation Genomic Sequencing	Taylor Davis
74	Drivers of Species Diversity in Suburban Environments: A Case Study of the Stanford University Campus CANCELLED	Esther Adelsheim
75	Wind Effects around Wildlife Exclusion Fences: A Study Comparing Porous to Solid Fences; How the Design Choice May Affect Species with Moisture Sensitive Skin	Eojin Kim
76	Using Single-season Species Co-occurrence Models to Tease out Important Factors Driving Conditional Occupancy	Rachel Townsend
77	Identifying individual California tiger salamanders (<i>Ambystoma californiense</i>) (CTS) using pattern recognition software	Brianna Jones

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Addressing California's Wildfire Crisis

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Human Dimensions in Wildlife Conservation and Management I
 Wednesday, February 5, 3:10-5:10 (Red Lion, Sierra)
 Chair: Linda Leeman, Ascent Environmental

CEQA Streamlining to Reduce Wildfire Risk: California Vegetation Treatment Program (CalVTP)
 Friday, February 7, 1:35-1:55 (Red Lion, Sierra)
 Speaker: Lara Rachowicz, Ascent Environmental

Poster Session
 Thursday, February 6, 6:30-8:30 (Holiday Inn, Ballroom)
 Chairs: Carlos Alvarado and Allison Fuller, Ascent Environmental

Species-Specific Impact Mitigation for the CalVTP Implementation Program
 Friday, February 7, 1:55-2:15 (Red Lion, Sierra)
 Speaker: Allison Fuller, Ascent Environmental



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NOTES

WESTERN SECTION WORKSHOPS

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Upcoming Workshops

- Interest-Based Negotiations, [Apr 29-May 1, Sacramento](#)
- Sierran Anurans, [Spring, Yosemite](#)
- Branchiopods Dry Season Surveys, [Fall, Sacramento](#)
- California Condors, [Spring, Ventura](#)
- Bat Ecology & Field Techniques, [Summer, TBD](#)
- Spotted Owls, [Fall, Quincy](#)

Upcoming Programs

Land Management Series
Workshops helping science citizens and citizen scientists engage in the study of state lands.

Analytical Series
Training focused on data management and analyses.

Science and Policy Series
Promoting active engagement and outreach training.

Leadership Series
Aimed to improve personal leadership concepts through workshops focused on public speaking, leadership voice, ethics, and strategies for managers.

Wildlife Studies Series
Offering field techniques for professional and student biologists.

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2020 EXHIBIT HALL & CAREER FAIR PARTICIPANTS

Holiday Inn Meeting Room & Exhibit Hall Layout

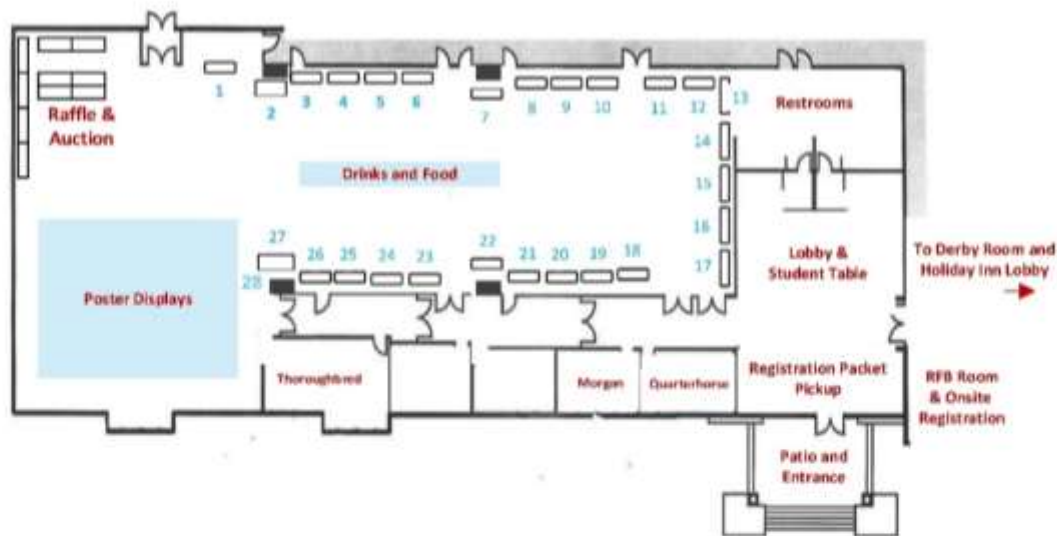
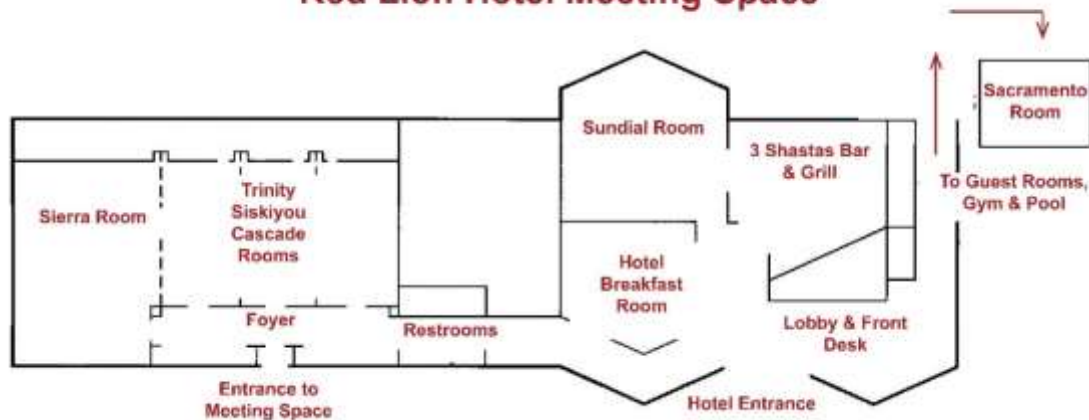


Exhibit Hall -- Booth Locations

- | | |
|--|---|
| 1 Coyote Brush Studios | 15 Milsar Technologies |
| 2 GeoTrack, Inc | 16 TWS: North Coast Chapter/SF Bay Chapter |
| 3 Wildlife Acoustics | 17 BLM |
| 4 Dudek | 18 Ironwood Consulting |
| 5 TWS Chapters: Central Coast /Southern CA | 19 TWS: Workshops/Western Wildlife Journal |
| 6 SD Zoo Institute for Conservation Research | 20 Wildlands |
| 7 McCormick Biological | 21 ESA |
| 8 Advanced Telemetry | 22 Laurel Mundy Illustrations |
| 9 Swaim Biological, Inc | 23 TWS: Sac-Shasta Chapter/Conservation Affairs |
| 10 ERTEC Environmental | 24 AECOM |
| 11 GEI Consultants | 25 Holohil |
| 12 Jan Sousa Fine Arts | 26 Animex USA |
| 13 Shasta Wildlife Rescue and Rehabilitation | 27 Ascent Environmental |
| 14 Desert Tortoise Council | 28 National Wildlife Federation |

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