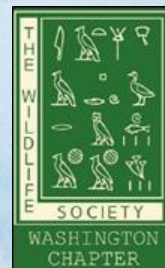




2019 Joint Annual Meeting



Connecting Science and Management Through Communication

Great Wolf Lodge
Grand Mound, Washington

February 25 - March 1
2019

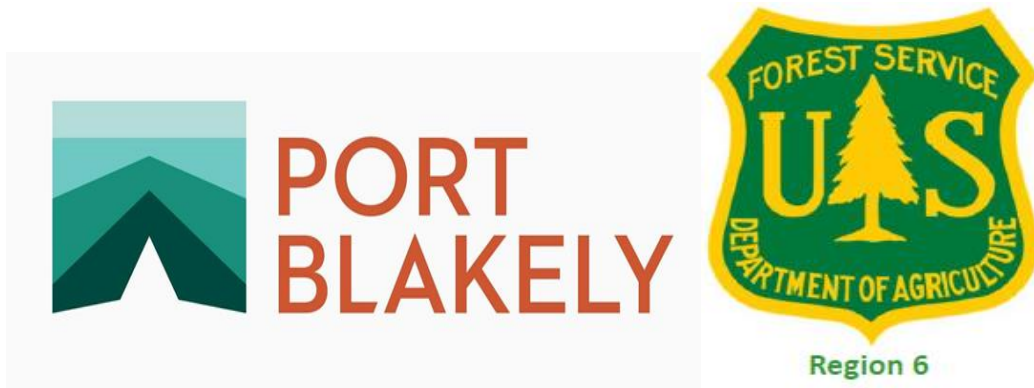
Hosted by the Washington Chapter of the Wildlife Society & The Society for Northwestern Vertebrate Biology
In association the NW Partners in Amphibian and Reptile Conservation

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Welcome from the Partners!



Washington Chapter of The Wildlife Society - (WATWS)- The Washington Chapter is a statewide affiliate of The Wildlife Society devoted to promoting *excellence in wildlife stewardship through science and education*. Chapter members represent a diverse array of wildlife conservation and management agencies, non-governmental organizations, academic faculty, students, education programs, and other disciplines dedicated to conserving

diversity, sustaining productivity, and ensuring responsible use of wildlife resources for the benefit of society. The Washington Chapter encourages research and professional growth through grants, workshops, annual meetings, and undergraduate scholarships.

2018-2019 Executive Board

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The Society for Northwestern Vertebrate Biology (SNVB) is the longest running scientific association devoted to the study of vertebrate ecology in the Pacific Northwest. Our society strives to promote professional working relationships among ornithologists, mammalogists, herpetologists, and ichthyologists in our region.

Please explore our website and be sure to check out our flagship publication, *Northwestern Naturalist*. If you share our passion for learning about the natural history and ecology of the Northwest our annual meeting is a great place to meet new people while learning about research that is currently being conducted in our region. Find out more at www.thesnvb.org.

2018-2019 Executive Board

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Steering Committee: Lisa Dowling, Katy Stuart, F Teal Waterstrat, Jessica Brown, & Katy Weil

Planning Committee: Katy Stuart, Lisa Dowling, Sara Hansen, Danielle Munzing, Sarah Kindschuh, F Teal Waterstrat, Jessica Brown, Patrick Burke, Bruce Thompson, Bill Vogel, Leah Rensel, Katy Weil, Michelle Dragoo, Alex Pavlinovic, Chelsea Waddell, Blake Hossack, Clara Wheeler, Amy Price, Victoria Kaufman, and Randi Riggs

Cover Artwork: Graham Klag; <http://grahamklag.com/>

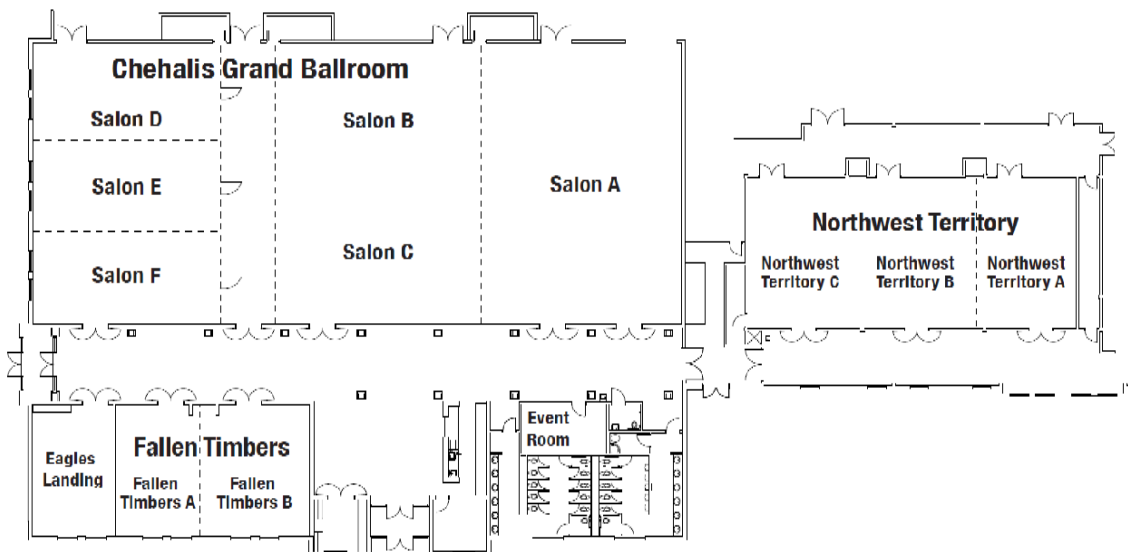
Location, Information and Attractions

Great Wolf Lodge in Grand Mound, Washington is the region's premier destination for conferences, meetings and events. Located minutes south of Olympia, the all-suite property offers a spacious conference center, uncompromised culinary quality and a unique suite of attractions to cut loose at the end of the day.



for

Great Wolf Lodge Meeting Room Layout



Great Wolf Lodge Hotel Layout



2019 Joint Annual Meeting Schedule-at-a-Glance

<u>Time</u>	Monday February 25th	Tuesday February 26th		Wednesday February 27th			Thursday February 28th			Friday March 1st	
7:00				Registration & Vendors 7am to 5 pm			Registration & Vendors 7am to 5 pm			Breakfast with a Wildllifer	
8:00	Chemical Immobilization Workshop (on site) w/Dr. Johnson	Chemical Immobilization Workshop (AM off site/ PM on site) w/Dr. Johnson	Conservation Communication Workshop w/ Bruce Thompson				<u>Terrestrial Mammals:</u> Small Mammals Hoofed Mammals -	Marine Mammal Symposium	NW PARC Symposium	Natural Illustration Workshop w/ Anne Yen	North America n Wildlife Law w/ Bill Vogel & Patrick Burke
9:00											
10:00				Plenary Session							
11:00				Hosted Lunch			WA TWS & SNVB Member Luncheons			GO HOME!	
12:00											
13:00				Herpetology	Avian studies	Ignite!	<u>Terrestrial Mammals:</u> Carnivores, - NW Bats, Bat Acoustic monitoring workshop	Marine Mammal Symposium	NW PARC Symposium		
14:00											
15:00											
16:00											
17:00							Resume workshop Poster Session and Evening Social				
18:00											
19:00											
20:00											
21:00											

Conference Highlights – Plenary Speakers

James Waddell

James Waddell is a Civil Engineer who is retired from a 35-year public service career with the U.S. Army Corps of Engineers. During his Federal career, he served as a leader in the development of the policies and practices of Sustainable Development. He was the first in the Federal Government to identify and integrate all the global warming research programs, allowing scientific information to better inform National and International policies. After his retirement from the Corps in 2013, he has been actively engaged in the review of the biological and economic benefits and costs of the 4 Lower Snake River Dams in eastern Washington. He has shared his work through multiple platforms from participating and presenting at congressional, agency, and public meetings to his part in the documentary film DamNation. He is currently leading a small volunteer team of mostly current and former government employees working to develop a Supplemental Environmental Impact Statement. He continues to devote his expertise to public service and has mastered the skill of communicating technical information and ideas through multiple media platforms.



Penny Becker, Ph.D.

Penny Becker is an experienced wildlife conservation professional who has dedicated her career to addressing the social, political, and environmental issues that impact species in greatest need of conservation. In addition to her doctorate in Wildlife Management, she has sought out opportunities to expand her knowledge around leadership, policy and human aspects around conservation. Dr. Becker focuses on employing adaptive leadership practices to help people hone their ability to adapt in complex social and political environments, break through barriers to collaboration, and transform conflict into productive relationships to meet conservation goals. During her time in Tanzania, South Africa as well as here in Washington, Dr. Becker has demonstrated her skill in building cooperation for natural resource challenges by communicating complex scientific content to a broader audience. In her role at the Department of Fish and Wildlife she is tasked with both keeping common species common and recovering listed wildlife species by recommending approaches on how to develop and maintain the social, political, and resource support necessary to achieve conservation of at risk species. Dr. Becker's ability to integrate technical expertise, innovative management techniques, and advanced skills in negotiation and conflict transformation are key to her success as a leader in wildlife conservation.



Nathan Dexter

Nathan Dexter is currently the FWS Pacific Region Native American Liaison, a position he has held since 2014. A native Oregonian, he grew up Klamath Falls, Portland, and Madras before attending Lewis & Clark College in Portland, Oregon and law school at the University of Colorado School of Law in Boulder, Colorado. Nathan has worked as a whitewater rafting guide on the McKenzie River, an assistant teacher in a middle school program for students with learning disabilities, an attorney with Legal Aid Services of Oregon, an in-house attorney for the Confederated Tribes of Coos, Lower Umpqua, and Siuslaw Indians, and a program manager at the Department of Energy in Washington, DC. If he's not spending his free time with his wife Lisa or daughter Alivia, you may find him working a fly rod in pursuit of redband trout on the Williamson River in southern Oregon.



~ Art and Photo Credits ~

- Graham Klag - <http://grahamklag.com>
'Oak Prairie' Program Cover Art
- Lisa Dowling - Columbia Pygmy Rabbit
pg. 3
- Amy Price - Lizard pg 10
- Amy Price - Northern Spotted Owl pg. 19
- Emilie Blevins- NW pond turtle pg 12

Conference Highlights

Banquet Dinner and Live Entertainment at the Chehalis Grand Ballroom

What can a toad teach us? Musings from a Warped Biologist - Jay Bowerman

Jay Bowerman earned his MS. from the University of Oregon where he studied with Dr. Jim Kezer, investigating salamander chromosomes. Jay directed Sunriver Nature Center from 1973-2003, then continued as "principal researcher" until 2017, with focus on amphibian ecology and conservation. Now retired but serving on the board of the Bend Science Station and continuing to spend time with scientists. Other interests include cross country skiing, canoeing, and music. With his wife Teresa, they have been involved in the commissioning of the "Malheur Symphony" that will premier in May of this year.



- Silent Auction - Raffle - Photo Contest -


Purchase your raffle tickets from your friendly student volunteer during the conference for a chance to win amazing prizes! Raffle items will be displayed in the Grand Ballroom. Remember proceeds from the raffle go to fund student scholarships!

- Drawings take place at various times throughout the meeting and banquet
- Winners will be posted near the Registration Desk
- Prizes can be claimed at the Registration Desk by presenting your winning ticket
- All prizes need to be picked up before 8:00 AM on Friday

Wednesday February 27th Meeting Schedule

7:30	Registration Opens		
9:45	Welcome and Meeting Introduction: WA-TWS, SNVB, NW PARC - Chehalis Grand Ball Room		
10:00 - 12:00	Plenary Session: Connecting Science and Management through Communication James Waddell (USACE, retired), Penny Becker (WDFW), Nathan Dexter (USFWS) Chehalis Grand Ball Room		
12:00	WA TWS - SNVB Hosted Lunch- Chehalis Grand Ball Room		
	NW Herpetology <i>Fallen Timbers A&B</i> Moderator: Aimee McIntyre	Avian Studies <i>NW Territories "A"</i> Moderator: Jessica Brown	Ignite <i>NW Territories "C"</i> Moderator: Sarah Hansen
13:00	Terrestrial Salamanders in Managed Forests: Impacts of Harvest Practices on Oregon Slender salamander and Ensatina Occupancy and Abundance, Garcia, Tiffany	Spatial and Temporal Factors Associated with Nest Survival of Gray Flycatchers in Managed Ponderosa Pine Forests, Kozma Jeff	Dwarfing the Aquatic Giants: Shrinking Body Size of Top-Predator in Headwaters Under Climate Change, Arismendi, Ivan
13:20	Stream-buffer Effects on Aquatic Vertebrates in Forested Headwaters: 5-years after a 2nd Density Management Harvest, Olson, Dede	Using Citizen Science to Inform Species Distributions: Washington's Sagebrush Songbird Survey, Vander Haegen, Matt	Is Climate Change Increasing Predation on Hoary Marmots in North Cascades National Park, Whiles, Logan
13:40	Drought Conditions Affect Movement of Stream-living Salamanders (<i>Dicamptodon tenebrosus</i>), Arismendi, Ivan	Waterfowl Surveying and Wetland Restoration in the Channeled Scablands of Eastern Washington, Kaufman, Victoria	Mountain goats going where they are wanted (they know how to take a hint)., Harris, Richard
14:00	Condition-dependent Movement of Juvenile Northern Red-legged Frogs and Implications for Dispersal in a Changing Climate, Bredeweg, Evan	Washington State Common Loons: Multi-State Occupancy Modeling Using Citizen Science and Survey Data, Sipe, Hannah	Early Success of I-90 Wildlife Crossing Structures for Small Mammals in the Cascades., Ernest, Kristina
14:20	Larval Morphology of the Coastal Tailed Frog (<i>Ascaphus truei</i>) Differentiate Geographic Clades., Leppin, Mark	Effectiveness of Autonomous Recording Units for Monitoring Owls in the Central Cascades of Washington, Homyack, Jessica	Importance of Winter Snowpack to Oregon Spotted Frog Breeding Success at the Parsnip Lakes, Cascade-Siskiyou National Monument, Parker, Michael
14:45	Break		Agonistic Behavior in Female Oregon Spotted Frogs (<i>Rana pretiosa</i>)., Nyman, Stephen

Wednesday February 27th Meeting Schedule continued

	NW Herpetology <i>Fallen Timbers A&B</i> Moderator: Aimee McIntyre	Avian Studies <i>NW Territories "A"</i> Moderator: Jessica Brown	Ignite <i>NW Territories "C"</i> Moderator: Sarah Hansen
15:00	Snake Activity Monitoring after Dike Repair at a Coastal Hibernaculum., Matsuda, Brent	Results of the 2018 Western <i>Asio flammeus</i> Landscape Study (WAfLS) in the Western United States, Buchanan, Joseph	A History of Bullfrog Control in Sunriver., Wilmoth, Jodi
15:20	Giant Frogs of Bend – Chapter 2., Wolf, Tlell	Northern Spotted Owl (<i>Strix occidentalis caurina</i>) Occupancy Dynamics and Breeding Propensity in a Protected Area: Factors Related to Habitat, Weather and Barred Owl (<i>S. varia</i>) presence. Chestnut, Tara	note the above are 5 minute talks and do not run concurrently with other sessions
15:40	Symbiosis Between Green Algae and Northern Red-legged Frogs (<i>Rana aurora</i>), Rombough, Chris		
16:00	Foothill Yellow-legged Frog Assessment Model (FYFAM)., Ashton, Don		
16:20	Two Introductions and a Few Successful Breeders: Genetics of Invasive Bullfrogs in the Yellowstone River Floodplain, Montana, Bigham, Dan		
16:40			
17:00	Resume workshop - Fallen Timbers B		
17:00 19:00	Poster Session Chehalis Ball Room -Organizer Randi Riggs		

Thursday February 28th Meeting Schedule

<u>Marine Mammal Symposium</u> <i>Northwest Territory A</i> <u>Moderator: Alex Pavlinovic</u>		
8:55	Cetaceans	Return of the Giants of the Salish Sea: Increased occurrence of humpback whales into the inside waters of Washington State., John Calambokidis
9:15		Changes in abundance and status of the Pacific Coast Feeding Group of gray whales., John Calambokidis
9:35		Interannual Variability in the Acoustic Presence of Fin Whales (<i>Balaenoptera physalus</i>) in Relation to Environmental Conditions in the Southern Chukchi Sea Erica Escajeda
9:55		Harbor Porpoise in Washington’s Inland Waters: Research Opportunities and Management Issues in a Recovering Population., Dave Anderson
10:10		Dolphins in Puget Sound, Washington: Observations of Unusual Species in this Region., Laurie Shuster
10:30	break	
10:50	Killer Whales	Southern Resident Killer Whales: Present and Future, Katie Jones
11:10		How to Assess Body Condition in Small Toothed Whales., Dr. Dawn Noren
11:30		Killer Whale Necropsies Provide Insight into Relationships Between Killer Whale Body Condition, Health, and Nutritional State., Dr. Dawn Noren
WATWS & SNVB Member Lunches		
13:00	Cetaceans	Large whale entanglements and responses in the Pacific Northwest., Doug Sandilands
13:25	New Sampling Methods	Water, Water Everywhere: Can eDNA from Seawater Provide Insight into Population Genetic Structure of Small Cetaceans?, Dr. Kim Parsons
13:45		Comparing manned to unmanned aerial surveys for cetacean monitoring in the Arctic: Methods and operational results., Dr. Robyn Angliss
14:05	break	
14:25	New Sampling Methods	Improving Methods For Data Collection Using Unmanned Aerial Surveys Of Marine Mammal Populations In The California Current Ecosystem., Jeff Harris
14:45	Marine	Sea otter genetics update: Diversity, population structure and taxonomy, Dr. Shawn Larson
15:00	Mustelids	Influence of Occupation History and Habitat on Washington Sea Otter Diet., Jessica Hale
15:25	Pinnipeds	Return of the Guadalupe Fur Seal and Unusual Sightings of Artic Seals in the Pacific Northwest, Dyanna Lambourn
15:45		Steller Sea Lions: Why Did They Decline in Alaska and Increase in the Pacific Northwest?, Dr. Andrew W. Trites
16:05		Pinniped monitoring program at Bonneville Dam: a review of the last 15 years and update on recent advancements., Dr. Kyle Tidwell
16:25		Satellite Tag Tracking of Male California Sea lions in the Pacific Northwest to Assess Haul-out and Foraging Behavior in Navy Testing and Training Areas., Steven Jeffries
16:45	New Sampling Methods	It’s not What You Think – Collecting DNA from the Spout of a Whale with a ‘SnotBot’ Drone, Dr. Scott Baker

Thursday February 28th Meeting Schedule continued

Time	<u>Mammal Session</u> <i>Northwest Territory C</i> Moderator: Dave Clayton		<u>NW PARC Symposium</u> <i>Fallen Timbers A&B</i> Moderator: Katy Weil	
8:40	Small Mammals	Are Highways Stressful for Pikas? Analysis of Stress Hormones of <i>Ochotona princeps</i> Living Adjacent to Interstate 90 in the Washington Cascade Range McIntyre, Thomas	eDNA in Herpetology	Development of a Fully-integrated eDNA Sampling System, Thomas, Austen
8:55		Genetic Monitoring of the Columbia Basin Pygmy Rabbit (<i>Brachylagus idahoensis</i>): From Captive Breeding to Wild Populations Nerkowski, Stacey		Validating the Use of ddPCR for eDNA Analyses of Amphibian Abundance., Cousins, Christopher
9:10		Distribution of porcupines in the Pacific Northwest and Evaluation of a Non-invasive Survey Method Appel, Cara		Casting a Broader Net: Using Multi-target Metagenomics to Capture Aquatic Biodiversity Data from Diverse Taxonomic Targets. Weitemier, Kevin.
9:25		Activity Patterns and Foraging Behavior of American Pikas (<i>Ochotona princeps</i>) Differs Between Craters of the Moon and Alpine Talus in Idaho Camp, Meghan		Comparing Multispecies eDNA to Traditional Approaches to Evaluate Species-level Aquatic Biodiversity in a Stream Network, Penaluna, Brooke
9:40		Patterns of Small Mammal Recolonization Following Elwha River Dam Removal. McCaffery, Rebecca		Remote Sensing of Habitat Restoration for the Columbia Spotted Frog. Pilliod, David
9:55	break			
10:10	Hoofed Mammals	Fuel Reduction Logging Influences Forage Resources and Nutrient Intake of Deer in Northeastern Washington Hull, Iver	NW PARC organization and business Forum	NW PARC: An Overview and Top Research and Conservation Priorities from the Northwest Chapter of Partners in Amphibian and Reptile Conservation. Weil. Katy
10:25		Mountain goat surveys at Mount St. Helens Bergh, Stefanie		<div>NW PARC Organization and Business Forum</div> <div></div>
10:40		Moose Population Size and Demography in Northeastern Washington Harris, Richard		
10:55	<i>Homo sapiens</i> influences on NW mammals	Wildlife Response to Tourism in Glacier Bay National Park, AK, Sytsma, Mira		
11:10		Reconnecting Habitats: The Washington State Department of Transportation’s Approach to Integrating Habitat Connectivity Principles into the State’s Transportation System., Kalisz, Glen		
11:25		March Mammal Madness: a Story about Science & Social Media., Chestnut, Tara		
11:40		Wildlife Trafficking in the Pacific Northwest, Dodds, Jeanne		
11:55	WATWS & SNVB Member Lunches			

Time	<u>Mammal Session</u> <i>Northwest Territory C</i> Moderator: Dave Clayton		<u>NW PARC Symposium</u> <i>Fallen Timbers A&B</i> Moderator: Katy Weil	
13:00	Carnivores	Broad-Scale Influence of Biotic and Abiotic Drivers to Lynx Occupancy in Washington State Under Current and Future Climatic Conditions, King, Travis	Herpetological Disease	Optimizing and Evaluating Environmental DNA-based Detection of <i>Batrachochytrium salamandrivorans</i> in Trade and Captive Settings., Yarber, Christian
13:15		Adaptive use of Nonlethal Strategies for Minimizing Wolf–Livestock Conflict, Stone, Suzzane		Evaluating the Susceptibility of Native Amphibians from Pacific States to the Fungal Pathogen Bsal. , Piovia-Scott, Jonah
13:30		Lynx Conservation in Washington: Combatting the Effects of Fire, Climate and a Small, Isolated Population, Lewis, Jeff		Shell Disease in Washington’s Western Pond Turtles—A Quantitative Assessment Based on Computed Tomography. , Haman, Katie
13:45		The Cascade Fisher Reintroduction Project in WA: Progress in the South Cascades and Launching a New Reintroduction Project in the North Cascades, Lewis, Jeff		Differing Demographic Responses of Toad Populations to Regionally Synchronous and Declining Prevalence of Amphibian Chytrid Fungus., Hossack, Blake
13:50	break			
14:05	NW Bats	Collaborative Monitoring to Assess Declines in Northwestern Bat Populations via Bat Grid and NABat Monitoring Programs., Rodriguez, Roger	Western Pond Turtle Mini-Symposium w/ Bruce Bury	Longevity of the Western Pond Turtle (<i>Actinemys marmorata</i>) Based on Studies over 50 Years., Bury, Bruce
14:20		White-Nose Syndrome Surveillance: Assessing the Influence of DNA Concentration on Detection Probability from Bat Guano Samples, Urbina, Jenny		Western Pond Turtles (<i>Actinemys marmorata</i>): Clutch Sizes, Double Clutching, and Nesting Season in Washington, Bury, Bruce
/14:35		The U.S. National Response to White-nose Syndrome in 2019, Froschauer, Ann		Western Pond Turtles (<i>Actinemys marmorata</i>) at a Recreation Area in the Mid-Willamette Valley, Oregon: Life History, Algae Infestation and Conservation Status, Bury, Gwen
14:50		Implementation of bat monitoring and white-nose syndrome surveillance in the North Coast Cascades Network in response to disease detection in western Washington. Chestnut, Tara		Twin Lakes Turtles: A Single Lake Study (2010-2018)., Bettaso Jamie
15:05		Presence of Little Brown Myotis (<i>Myotis lucifugus</i>) Positively Associated with Trees and Negatively Associated with Artificial Light Within Waterfront Sites in Metro Vancouver, Claire, C. Toby		It’s Turtles All the Way Down: Perspectives for the Western Pond Turtle (<i>Actinemys marmorata</i>) as a Long-lived Species in a Rapidly Changing Environment., Ashton, Don
15:20	break			

Contributed Posters

Posters will be displayed and presented in the Chehalis Ballroom the evening of Wednesday February 27th

indicates a student presentation

<u>Presenter</u>	<u>Poster Title</u>
Anderson, Scott	Mapping amphibian occurrence on the road system at Mount Rainier National Park
Appleby-Hall, Isaac [#]	Point Count Surveys Indicate a Decline in Raven Densities Following Control Efforts in Greater Sage-Grouse Habitat.
Bucher, Morgan [#]	Underestimation of Mesic Habitat May Call for Reassessment of Brooding Sage-grouse Habitat Preferences.
Chestnut, Tara	Observations of three Harlequin Duck (<i>Histrionicus histrionicus</i>) nests in the southern Washington Cascade Range.
Cousins, Christopher [#]	Wetland Meadow Habitats in the Cascade Range: Potential Refugia for Herpetofaunal Communities Accelerating Post Fire Ecosystem Recovery.
Dylla, Celeste [#]	Nest-Site Preferences of American Bushtits (<i>Psaltiriparus minimus</i>) in an Urban Campus Setting.
Estes, Brooke [#]	Attitudes of California Wine Producers on the Use of Barn Owls (<i>Tyto alba</i>) as a Tool for integrated pest management
Fischer, Phillip	The Sustainability in Prisons Project (SPP): Engaging Incarcerated People in Wildlife Research and Recovery.
Foster, Alex	Characteristics of Adult Coastal Giant and Cope's Giant Salamanders of the Pacific Northwest.
Howell, Betsy	Interagency Pacific Marten (<i>Martes caurina</i>) Distribution Study on the Olympic Peninsula, Washington
Hunter, Ruth [#]	Optimal Distance for Insect Trap Placement in the Sage-grouse Habitat.
Jensen, Paul [#]	Relating Pellet Counts to Snowshoe Hare Density in Lynx-occupied Areas of Washington.
Keleher, Katrina [#]	Monitoring Habitat Connectivity on Washington State Route 26.
Macias, Cameron [#]	Cougar and Bobcat Population Estimation and Occupancy Modeling in the Lower Elwha Klallam Tribe's Historic Use Area.
McClarnon, Max [#]	Characteristics of a High Elevation Western Pond Turtle Population.
McIntyre, Aimee	Evaluating the Current Extent of Van Dyke's Salamander (<i>Plethodon vandykei</i>) Distribution Based on Historic Localities: A Collaborative Effort.
Neil, Anna	Wetland Meadow Habitats in the Cascade Range: Potential Refugia for Herpetofaunal Communities Accelerating Post Fire Ecosystem Recovery.
Parker, Michael	Locating Oregon Spotted Frog Over-Wintering Sites at the Parsnip Lakes, OR.
Raley, Catherine M.	Selection of Rest Structures and Microsites by Fishers in the Cascade Range of southern Oregon
Rensel, Leah [#]	Winter Bat Activity at Maternity Sites in Western Washington
Rohrer, John	Physical Characteristics of Northern Pacific Rattlesnake Hibernacula in the Methow Valley, WA
Ryckman, Jordan [#]	Can Pika Haypiles in Disturbed Habitats Facilitate Other Generalist and Specialist Species?

<u>Presenter</u>	<u>Poster Title</u>
Salzer, Lori	Engaging the Public to Promote Bat Conservation in Washington.
Shipley, Lisa	Evaluating a Novel Method to Estimate Deer Densities in Forested Habitats
Smith, Tessa [#]	Do Fuel Treatment Applications in Forests Change Habitat Selection Factors for Fishers (<i>Pekania pennanti</i>)?
Staudenmaier, Anna [#]	A Comparison of Fundamental Nutritional Niches of White-tailed Deer (<i>Odocoileus virginianus</i>) and Mule Deer (<i>Odocoileus hemionus</i>).
Whitfield, Sheri	Creating Habitat for the Northern Sagebrush Lizard at Umatilla National Wildlife Refuge.
Williams, Olivia	Conservation Status, Research Needs, and Management Recommendations for the Olympic Mudminnow (<i>Novumbra hubbsi</i>), Washington State's Only Endemic Fish.
Wilson, Anjanette [#]	Setting the Stage for Connectivity Assessments: Small Mammals in Forest Habitats as Potential Users of Wildlife Crossing Structures



**Presenters will be available
to answer questions on
Wednesday evening from
6:00-7:00pm**

Thank You to our Volunteers!!!

WA-TWS

Lisa Dowling

Katy Stuart

Sara Hansen

Sarah Kindschuh

Bruce Thompson

Bill Vogel

Alex Pavlinovic

Victoria Kaufman

Bill Vogel

SNVB

Teal Waterstrat

Jessica Brown

Patrick Burke

Leah Rensel

Michelle Dragoo

Blake Hossack

Clara Wheeler

Chelsea Waddell

Randi Riggs

NW PARC

Katy Weil

Dede Olson



2019 Joint Annual Meeting Associated Workshops

Full Day Workshops ~ Monday and Tuesday

WILDLIFE HANDLING and CHEMICAL IMMOBILIZATION WORKSHOP

Instructor: Mark R. Johnson DVM, Global Wildlife Resources (<https://wildliferesources.com>)

Strengthen your comfort and confidence with wildlife chemical immobilization. Learn the latest drug combinations. Fine-tune your experience and field protocols. Global Wildlife Resources is teaching a 2-day workshop on Wildlife Handling and Chemical Immobilization held in association with the February 2019 joint annual meeting. The workshop is a slightly condensed version of the 3-day courses that GWR teaches across the U.S. and Canada. Dr. Mark Johnson is a dynamic instructor who teaches practical, field-based training to maximize human safety, field success, animal care, and professionalism that is the most current and extensive course content in North America. This 2-day course is authorized to provide 12 hours of credit for the TWS Certified Wildlife Biologist Renewal/Professional Development Certificate Program. This workshop can also be applied toward any state or federal certification program. Dr. Johnson has taught this class for the Washington Chapter before and we received tremendous feedback from previous participants. The 2 days will include lecture, discussion, videos, and a hands-on lab each day. A dart-gun lab provides opportunity for participants to practice a variety of drug-delivery systems. A needle and syringe lab teaches basic skills and improves old skills for working with syringes and needles, syringe poles, and performing IV injections for blood collection. The needle and syringe lab builds good habits to maximize human safety, animal care, and successful chemical immobilization. This course emphasizes care, respect, and compassion for every animal.

CONSERVATION COMMUNICATION WORKSHOP

Instructor: Dr. Bruce Thompson

This workshop will introduce and explore key facets of effective communication processes in natural resources conservation settings among a variety of resource professional backgrounds in a day-long interactive workshop to help participants think and judge as professionals.



Bonus! 1.5-hour Acoustic Monitoring Workshop ~ Thursday 15:30 -1700

There will be a free basics of acoustic monitoring for bats workshop hosted by Roger Rodriguez following the NW Bats talks. We will have a signup sheet at the registration desk Thursday morning for the first 20 participants! *Stay tuned for more!*

Half Day Workshops ~ Friday

NATURAL SCIENCE ILLUSTRATION

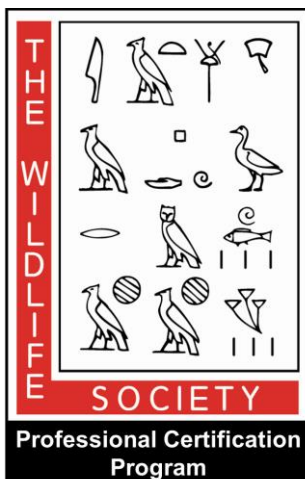
Instructor: Anne Yen (<https://anneyen.com/home.html>)

Have you ever wanted to draw but felt intimidated by the blank page? Have you ever been inspired to depict the nature and wildlife you work so intimately with? Has the thought “but I’m a scientist” stopped you from expressing your artistic side? Don’t despair! In this hands-on workshop, artist and scientist Anne Yen will break down the barriers between art and science and get you to draw and express yourself artistically on paper. Oftentimes in popular media and culture, art and science are juxtaposed in opposition with each other: right brain vs. left brain, creativity vs. exactitude, fantasy vs. fact. However, art and science are quite complementary and throughout history, art, especially natural science illustration, plays a vital role in science communication and conservation advocacy. In a no-fear and judgement-free space, practice drawing through simple exercises, develop an eye for line, shadow and tone, and explore ways to use art to communicate your own scientific work and passion for nature. Feel free to bring a photograph, specimen or natural artifact to illustrate. Natural objects will also be on hand to practice sketching.

FEDERAL WILDLIFE LAW ~~CANCELLED~~

~~**Hosted by** William O. Vogel and Patrick Burke~~

~~This 1/2 day workshop will cover the basics of Federal wildlife laws including when the Federal government has jurisdiction and how Federal laws are made and administered. It will provide an overview of many Federal environmental laws, but will focus on a few such as the Migratory Bird Treaty Act, Marine Mammal Protection Act, Bald Eagle Protection Act, and the Endangered Species Act.~~



The Wildlife Society will allow a maximum of 27 Continuing Education Units (CEUs) in Category I of the Certified Wildlife Biologist® Renewal/Professional Development Certificate Program for participation in the Washington Chapter of The Wildlife Society and Northwestern Vertebrate Biologists' 2019 Joint Annual Conference.