

INTRODUCTION TO TREE VOLES



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A Workshop on
Genus **ARBORIMUS**
RED, SONOMA, and WHITE-FOOTED TREE VOLES



**JOIN US VIRTUALLY
OR IN CORVALLIS, OR**

**JULY 26, 2024
OPTIONAL FIELD
DAYS JULY 27-28**



Photo by Bert Gildart

Description: The Oregon Chapter and the Western Section of The Wildlife Society team up to demystify the all three members of the genus *Arborimus* - the enigmatic red, Sonoma, and white-footed tree voles of the Pacific Northwest. Join us by Zoom or in-person at Oregon State University (Corvallis, OR) for a full day lecture on tree vole natural history, survey methods, population status, threats, management considerations, and permitting. An optional field excursion July 27-28 will take 30 participants to explore occupied red tree vole habitat and *possibly* even see researchers capture one of these rare animals.

What to Expect: The workshop is geared towards professional biologists and students. Online participants will need access to stable internet and Zoom software. Field participants will need to be in good physical condition to traverse steep areas bushwhacking through dense forest. Participants are expected to carpool with tree vole field staff due to some field locations in industrial forests requiring CB radios and specific safety training..

Registration

Registration includes 8 hours of online lecture with the top experts of the genus. The Lecture and Field Day option includes two days in the field with experts, looking at habitats and observing the process of a possible vole capture (no guarantees on an actual vole).

Registration Categories		
Lecture Only, July 26, 2024 (in person participation limited to 5; online limited to 70)	Early Registration (before June 1)	Late Registration (After June 1)
Member, TWS Western Section or Oregon Chapter*	\$85	\$95
Non-Member Rate	\$115	\$125
Student (limited to 5 registrations)	\$35	\$45
Lecture and Field Days, July 26-28, 2024, limited to 26, fully in-person		
Member, TWS Western Section or Oregon Chapter*	\$360	\$390
Non-Member Rate	\$410	\$440
Student / Early Career Professionals (limited to 4 registrations)	\$210	\$240
*OR Chapter Members, please use code TV2024OregonMember in the Promotion / Discount Code box just above the green Check Out button on the last page of the registration form.		

The maximum enrollment for the full workshop is **110** for the lecture and **26** for the field portion. After the class is filled, a waiting list will be kept. A minimum of **45** participants must register by **June 10th** or the class will be canceled and all registration fees will be returned. Maximum enrollment for the field portion is

Before you register

1. Log in to your TWS-WS account to get the student/member rate.
2. We cannot accept American Express
3. Registration is based on a first-come, first-served basis.
4. Please make sure you check your email on the registration form, as the system may auto-populate an old email.
5. Each person attending the workshop must fill out their own registration and payment.
6. Registration is not secured until you pay by credit card.
7. **State & Federal employees**, however, may pay by check if you A. register to secure your spot (and skip the payment option) and B. email the workshop coordinator at workshops@tws-west.org. We will hold your spot for 3 weeks. Registration is payable by check or credit card and must be received or postmarked by June 12, 2024. Please make it out to the address below with the name of the workshop and your name in the memo line:

Contact workshops@tws-west.org

TWS – Western Section
PO Box 6756
Albany, CA 94706

Please Register at this Link:

<https://user.tws-west.org/store.php?e=TV2024>

What Happens Next? After registration, you will receive detailed information about the field course one month prior to the event and an invitation to select a date for a group planning call. The planning call will help determine our carpool strategy.

Waitlist Policy: To be placed on the waitlist, you must fill out a registration form. If placed on the waitlist, you will not be charged. If spots open up, the first person on the waitlist will have 48 hours to accept the registration up until 5 weeks prior to the event, after which participants will have 24 hours. It is always a good idea to put yourself on the waitlist because if additional opportunities arise, you will be the first alerted.

Cancellation and Refund Policy: To receive a refund of workshop registration fees, we must receive your cancellation no later than 24 days before the first day of the workshop. All refunds are subject to a \$50 processing fee. Afterwards, there will be no refunds due to inclement weather, Federal budget issues, furloughs or other events beyond the control of TWS-West. However, registration may be transferred to another individual for a \$25 transfer fee.

Location

The classroom portion will be held either online. In-person participants will meet at Oregon State University, College of Forestry:

[Address: 140 Peavy Forest Science Center, 3100 SW Jefferson Way, Corvallis, OR 97331](#)

Expect to pay for parking (\$4/day, B3 lots south or west of Peavy) or walking up to a ½ mile to reach the classroom.

Field participants will meet at OSU on the 27th and 28th as well, and carpool. Further details will be provided after you register.

Virtual Participants

Zoom

Prior to the course, please have [Zoom](#) downloaded on your computer and have tested all your microphones, etc. so you are not caught off-guard by technical difficulties during the event.

Requirements

Zoom downloaded (free/basic version is just fine) to your device prior to the course. Headphones or head-set are recommended to improve sound quality, but not required (by now we probably all know if our systems work well).

Internet / System Requirements

If you have not used Zoom before, please run some teleconference tests to ensure that you have enough bandwidth to run Zoom. You can find a list of [system requirements here](#).

Condensed Itinerary

(SUBJECT TO CHANGE PER INSTRUCTORS)

All times in Pacific Time (Los Angeles, Victoria, Seattle)

July 26, 2024

7:00	Check In	
7:30	Introductions	Ivan Parr
7:45	Workshop Goals and Key Points	Katie Moriarty
	Lecture Sessions	
8:00	Intro to Arborimus and the three species	Eric Forsman
8:15	Habitat and Natural History	Eric Forsman
8:30	Population Status, Distribution, Natural History, Physiology - red tree vole	Eric Forsman
8:45	Population Status, Distribution, Natural History, Physiology - white footed vole	Eric Forsman
9:00	Population Status, Distribution, Natural History, Physiology - Sonoma tree vole	Eric Forsman
9:15	Q&A Session	
9:30	Break	
9:45	Challenges with Detectability	Katie Moriarty
10:00	Techniques and Research	Katie Moriarty/Mackenzie McCoy, Jim Swingle
10:30	Home range and movements	Jim Swingle
10:45	Juvenile Dispersal	Mackenzie McCoy
11:00	Questions	
11:15	Break	
11:30	Survival and Predators	Jim Swingle
11:45	Remote Cameras and Nest Monitoring	Jason Piasecki (NCASI)
12:00	Nest Support Structures and Special Use	Jason Piasecki (ideally Damon L.)
12:15	Q&A Session	
12:30	Lunch (provided by OSU Boone and Crocket Foundation/Club)	
13:30	Telemetry	Mackenzie McCoy

13:45	Innovations and Opportunities - Genomics	Taal Levi (or Grant Broyles)
14:00	Predicted habitat loss	Julie Heinrichs
14:15	Hold this spot...	Katie/Jason/Fran/other...
14:30	Conflicts between Site Management and Wildfire Prevention	Chad Marks-Fife
14:45	Q&A Session	
15:00	Break	
15:15	Survey Protocol v4.0	Chad Marks-Fife
15:30	Land Management on Bureau of Land Management	Scott Hopkins
15:45	Oregon Dept of Forestry Habitat Conservation Plan on State Lands	Vanessa Petro checking with Nick
16:00	Regulation, Threats, and Status of Red Tree Vole	Shauna Everett (USFWS)
16:15	Q&A Session	
16:30	Break	
16:45	Permitting - CA	Scott Osborn
17:00	Permitting - OR	Jade Keehn
17:15	Q&A Session	
17:30	Field Announcements	Katie Moriarty, Ivan Parr
17:45	Adjourn	

July 27, 2024

7:00 AM - 4:00 PM

We will meet at OSU at 7:00 AM and travel by bus to the field

Location: Starker

We will visit several sites in young and old forests within a 40-mile radius of OSU. We will visit several sites in young and old forests to visualize the spectrum of ages where tree voles are found.

Researchers may climb trees with occupied nests to verify status, set remote cameras, or capture tree voles. It is possible that we find a live red tree vole in need of a collar replacement.

July 28, 2024

7:00 AM - 2:00 PM

Photo by Eric Forsman

We will meet at OSU at 7:00 AM and carpool to the field.

We will visit different sites in young and old forests to visualize the spectrum of ages and stand types where tree voles are found. Researchers may climb trees with occupied nests to verify status, set remote cameras, or capture tree voles. It is possible that we find a live red tree vole in need of a collar replacement..

Thanks to Our Sponsors

This workshop would not be possible without the generous support of several sponsors, and from the experts who are volunteering their time to put on this event. Through the following sponsors, the workshop venue, catered lunch, field day 1 transportation, instructor lodging, IT services, and field team time are being covered!



Oregon State University College of Forestry

The Oregon State University College of Forestry is an internationally recognized leader that is transforming education, research and policy for managing and sustaining working forest ecosystems in the 21st century. We offer a world-class education that provides a wide variety of opportunities following graduation. For our partners, we are a trusted authority and world leader in outreach and research, providing the latest scientific knowledge, woven together with Traditional Ecological Knowledge and multiple ways of knowing, to inform policy and business decisions across the forest landscape. The College of Forestry is kindly providing our lecture venue for free!



Boone and Crockett Club was founded by Theodore Roosevelt in 1887. It has long been at the forefront of conservation in America. We're best known for our historic big-game records. But today's B&C members continue to be a Rooseveltian force in the ever-more-complex arena of wildlife and hunting policy.

The Boone and Crockett Club is sponsoring our lunch for August 24th.



IMPACT. SCIENCE. SOLUTIONS.

The National Council for Air and Stream Improvement, Inc. (NCASI) is a 501 (c)(6) tax-exempt association organized to serve the forest products industry as a center of excellence providing unbiased, scientific research and technical information necessary to achieve the industry's environmental and sustainability goals.

NCASI's mission is to help our members cost-effectively meet their environmental and sustainability goals through basic and applied research, technical support, and education. Through the execution of our Mission, we provide essential support to our forest products industry members in their efforts to ensure the availability of a sustainably managed fiber supply, characterize and help improve the effectiveness of pollution control measures at manufacturing facilities and provide valuable insights and assistance to members in the manufacture of sustainable forest products.

Contact workshops@tws-west.org

NCASI is sponsoring lodging for instructors and its team's information and field efforts.



Mendocino Redwood Company, LLC (MRC®) and Humboldt Redwood Company, LLC (HRC™) chose the FSC® standard for certification because we, as well as many others, believe that it is the toughest standard available for management of forests on a commercial basis. Our commitment is to manage productive timberlands with a high standard of environmental stewardship, and also operate a successful business. Mendocino and Humboldt Redwood Companies are sponsoring workshop speakers.



Starker Forests, Inc. owns, grows and manages forests and strives for excellence in terms of forest resource stewardship. We are a fifth generation family business and strive to successfully meet the needs of our owners, employees and the community. We are grateful to Starker Forests, Inc. for providing transportation for the workshop.

We Would Also Like to Thank

Dr. Katie Moriarty, Planning Lead
Jason Piasecki, Field Lead
Dr. Mindy S. Crandall, Associate Professor in Forest Policy
Katie Rock, Moderator
Dr. AJ Kroll, President of the Oregon Chapter of TWS
John McNerny, Treasurer of the Western Section of TWS
Randi McCormick, President of the Western Section of TWS (2023)
Brooke Langle, President of the Western Section of TWS (2024)



Preparation

List of Items to Bring

In-Person Classroom

- Thermal coffee mug
- Snacks
- Pen or pencil
- Water bottle
- Notebook/laptop if desired
- Cash/credit card/phone app for parking

Field Portion

- Binoculars
- Headlamp/flashlight just in case
- Boots which cover the ankle (required!)
- Field camera
- Windbreaker
- Fleece jacket or vest
- Rain gear (check weather)
- Layered clothing
- Beanie
- Water bottle(s) - refillable please
- Extra socks
- Snacks
- Small notebook for the field
- Pen or pencil
- Water bottle(s) to refill
- Backpack or field pack
- Sunglasses
- Sunscreen
- Eco-friendly bug spray
- First aid kit
- Hat
- Extra socks
- Extra clothes
- Epipen and anything you may need for yellow jacket stings!
- Toilet paper and trowel - El Baño Natural is going to be your friend on long field days
- Hiking poles (optional)



Photo by Eric Forsman

Instructors



Dr. Eric Forsman

Eric Forsman grew up in the forests bordering the Willamette River. From a young age, he had formative encounters with the spotted owl, ultimately leading to a career studying the owl and one of its prey items, the red tree vole. In 1972, he started his bachelor's in Fisheries and Wildlife at Oregon State University. After receiving his doctorate in 1987, he worked as a Forest Service Wildlife Biologist, studying the habitat of spotted owls, participating in studies used in determining owl policy, and working on conservation initiatives. Throughout this time, Dr. Forsman also gained prominence as one of the foremost experts in the genus *Arboriumus*.

Although he retired from the Forest Service 2016, Dr. Forsman continues to conduct research through Oregon State. His topics of study have included survival, mortality, and predators of red tree voles; morphological variation, terpenoid resin in conifer needles with implications for tree voles; evaluations of tree vole distribution and habitat relationships; patterns of vole distribution and habitat suitability with implications for survey and conservation planning; behavior of red tree voles based on video monitoring of their nests; home range and activity patterns of red tree voles; effects of historical climate change on tree voles; and literally dozens of other publications. To learn more about Dr. Forsman, check out this [Smithsonian Article](#), or listen to [this interview](#) from Oregon State.



Dr. Katie Moriarty

Dr. Katie Moriarty is a senior research scientist and western forest wildlife ecologist with the National Council for Air and Stream Improvement. Her research focus on sustainable forestry, balancing needs of sensitive wildlife species, and biodiversity. Katie's current projects include assessing sensitive species use of managed forest landscapes and evaluating biodiversity (e.g., pollinators, bats, , carnivores) responses to variation in forest management intensity across broad spatial scales. Katie is active within The Wildlife Society, International Martes Working Group, and the IUCN Small Carnivore Group.

Katie earned her BS at Humboldt State University, and received her MS and doctorate through Oregon State University, Corvallis. Dr. Moriarty specializes in detection and habitat use among mesocarnivores, particularly the elusive Pacific marten (*Martes caurina*). She and her team have been providing unique movement data of the threatened Humboldt marten in our coast ranges. As a grad student, Dr. Moriarty received national recognition through her accidental rediscovery of the wolverine in California. Her photographs of the wolverine, taken by a remote camera set up in Tahoe National Forest, have become the standard example in demonstrating the value and utility of remote cameras.



Jason Piasecki

Jason Piasecki is a wildlife biologist with the Summit Lake Paiute Tribe. During his master's, he worked with the National Council for Air and Stream Improvement and within Oregon State University's College of Forestry. He has been working in the forest canopy studying red tree voles since 2019 with Dr. Katie Moriarty. His graduate research focused specifically on the capacity of young forests to support tree vole occupancy in the central Oregon coast range.

Jason holds a BS in Fisheries and Wildlife Science from Oregon State University and concluded his MS thesis research in December 2023. He has a wide range of field experience in the Oregon coast range covering a variety of species including chinook salmon, marbled murrelets and red tree voles. He is pursuing a career in research and conservation biology

focusing on landscape disturbance and sensitive species.



Shauna Everett

Shauna Everett is a wildlife biologist with the U.S. Fish and Wildlife Service in Portland, Oregon, and has been the species lead for the red tree vole the past three years. She has worked on many aspects of the Endangered Species Act over her 20-year career, with current focus on Pacific Northwest forest conservation and management, ESA section 10 conservation programs, and compensatory mitigation programs and policy.

The first half of Shauna's wildlife career was spent in the southeast working in bottomland hardwood and longleaf pine forest ecosystems, with a focus on mammals and herpetofauna. Shauna's academic degrees include an M.S. in Wildlife Ecology from Oklahoma State University and a

B.S. in Zoology, Magna Cum Laude, from the University of Arkansas. She enjoys working on her backyard habitat and adventuring with her wildlife biologist husband and their four children, especially in the great outdoors.



Dr. Julie Heinrichs

Julie Heinrichs is a research scientist at Colorado State University, and the Director and Chief Scientist at Computational Ecology Group Inc. Dr. Heinrichs uses her expertise in spatially explicit mechanistic models to support partners in forecasting the implications of management and ecological change. She develops models for a range of species at risk of decline in different ecosystems, including the Red tree vole in the Pacific northwest.

Jade Keehn is a non-game biologist with Oregon Department of Fish and Wildlife (ODFW) assigned to the southwest. Jade specializes in inventory, monitoring, and conservation of at-risk species, and her role with ODFW includes supporting Scientific Take Permitting for non-game research.



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Vanessa Petro

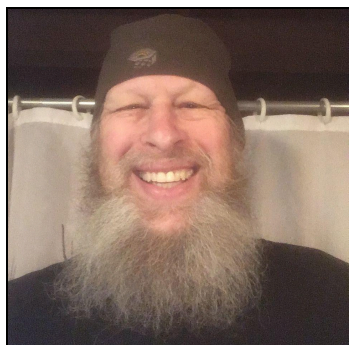


Vanessa Petro is the Lead Wildlife Biologist for the State Forests Division with the Oregon Department of Forestry. In her current role, Vanessa provides wildlife policy and plan development, technical support for wildlife issues on ODF managed lands, and serves as the Division lead in wildlife monitoring and research.

Prior to this role, she was a Senior Faculty Research Assistant with the College of Forestry at Oregon State University where she received her master's degree in 2013. Vanessa's research career primarily focused on wildlife-forestry interactions, specializing in American beaver and

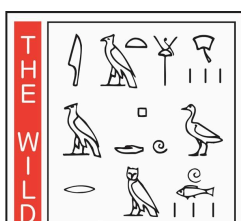
black bear species. She is a subject matter expert in American beaver ecology in the Pacific Northwest and continues to support effective conservation of this species.

In her free time, Vanessa enjoys looking for beaver activity, bear dens, old growth stands, and fire scars with her sons Aldo (4) and Sawyer (1), and husband Andrew.



Jim Swingle

Jim Swingle is a wildlife biologist with the USDA Forest Service, Pacific Northwest Research Station. He received a Bachelor of Science degree from the University of Washington and Master of Science degree from Oregon State University. He has spent the last 35 years conducting research primarily on red tree voles, owls, northern goshawks, Humboldt marten, and pileated woodpeckers.



Certified Wildlife Biologist

Contact workshops@tws-west.org

**Certified Wildlife Biologist Renewal/
Professional Development Certificate Program**

The Wildlife Society will allow a maximum of 14.5 Continuing Education Units in Category I of the Certified Wildlife Biologist Renewal/Professional Development Certificate Program.

COVID Policy

The Western Section of The Wildlife Society follows State, Center for Disease Control, County, City, and The Wildlife Society guidance on COVID restrictions.

If you have recently been diagnosed with or exposed to COVID-19, please consult and adhere to the CDC Isolation and Exposure Calculator. Please do not attend if you have a suspected or confirmed case of COVID-19. Alliance policies and protocols may be updated at any time based on CDC and/or local or state public health guidelines as needed.

By attending the workshop, you assume all of the risk of contracting COVID-19 and agree to hold the Section harmless.

Code of Conduct

All TWS-WS events will adhere to the following code of conduct:

<https://twc-west.org/the-wildlife-society-code-and-ethics-policy/>