

Snake Ecology Symposium

Joint Annual Meeting of
WA TWS, SNVB and NW PARC

Grand Mound, Washington
27-28 April 2023

Co-organizers: Marc Hayes & Chuck Peterson



Marc P Hayes

Historical Background

Snake Symposia, particularly those about to their ecology, date back to at least the 1970s. However, the earliest Snake Ecology Symposium that was not taxon-specific was part of the American Society of Ichthyologists and Herpetologists meeting held in Victoria, British Columbia, Canada in 1986 and organized by Neil Ford. The tradition of such a symposium has continued irregularly into the present with the venue summarized here, which was held at Grand Mound, WA in 2023.

This symposium differs from the previous in that it had a regional (Pacific Northwest) focus, and a special effort was made to include regional snake and speaker diversity.

We (the organizers) hope that this brief will be a useful historical archive for this effort.





AQUATIC & HERPETOLOGICAL
RESEARCH  CONSULTANTS



Society for Northwestern
Vertebrate Biology (SNVB)

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Supporters



THE Orienne
Society

Science • Conservation • Education

NORTHWEST



AMPHIBIAN AND REPTILE CONSERVATION

We are grateful to work and live in the unceded traditional territories of the Chehalis Tribe. We strive to responsibly address all forms of discrimination and create and support an equitable, inclusive and diverse community.

Facilitators, Organizers, Presenters and Technical Support



Bauder J



Beck D



Bronikowski A



Campbell D



Cobb V



D'Antonio A



Frauenhofer C



Hallock L



Hamilton B



Hayes M



Hopkins G



Hoyer R



Hubert D



Hussain L



Jenkins C



Leppin M



Mackessy S



Mason B



Olson B



Olson D



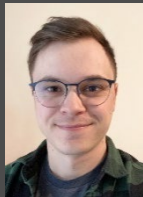
Ovaska K



Parker J



Parker K



Perry B



Peterson C



Pilliod D



Rombough C



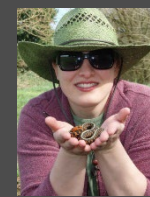
Slade A



Spear S



Tiegs A



Trunk L



Woodruff V



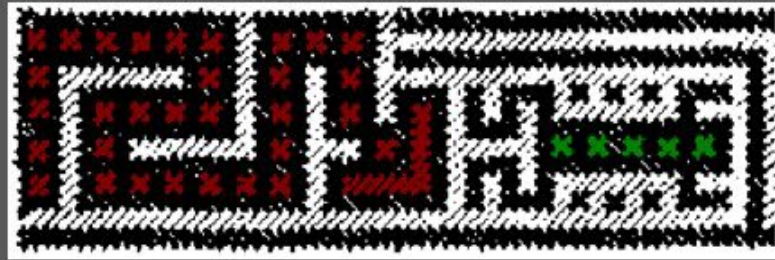
Yrazabal M



Plenary Presentation

Acquiring and Using Crowdsourced Data for Snake Ecology Studies and Conservation

27 April 2023 - 08:15-09:00 am



Charles R. Peterson and Patrick D. Giltz

Herpetology Laboratory

Department of Biological Sciences and Idaho Museum of Natural History

Idaho State University Pocatello, Idaho, USA

petechar@isu.edu



27 April 2023
09:00-09:20 am



Synopsis of Striped Whipsnake (*Coluber taeniatus*) Ecology and Status in Washington State

Lisa Hallock

Washington Department of
Fish and Wildlife, Olympia,
Washington





27 April 2023
09:20-09:30 am



Conservation Genetics of the Striped Whipsnake (*Coluber [Masticophis] taeniatus*) in Washington

**David S. Pilliod, Lisa A. Hallock, Mark P. Miller,
Thomas D. Mullins, and Susan M. Haig**

USGS Forest and Rangeland Ecosystem Science Center, Boise, ID and Corvallis, OR

Washington Department of Fish and Wildlife, Olympia, WA

USGS Water Resources Office of Planning and Programming, Lakewood, CO

U.S. Department of the Interior
U.S. Geological Survey



27 April 2023
09:30-09:40 am

**LIFE-HISTORY PATTERNS OF A SMALL, FOSSORIAL SNAKE, THE
COMMON SHARP-TAILED SNAKE, *CONTIA TENUIS*, THAT THRIVES
IN THE COLD IN WESTERN OREGON**



**Dustin R. M. Campbell
Robert T. Mason
Richard F. Hoyer
Deanna H. Olson**



27 April 2023
09:40-10:00 am

RAPID POST-HATCHING GROWTH IN THE COMMON SHARP-TAILED SNAKE, (*Contia Tenuis*)

Richard F Hoyer, Dustin R. M. Campbell





CRP

27 April 2023
Just after the Morning Break
10:00-10:20 am



27 April 2023
10:20-10:40 am

TRACKING MOVEMENTS OF SHARP-TAILED
SNAKES (*CONTIA TENUIS*) WITH PIT-TAG
TELEMETRY
ON VANCOUVER ISLAND, BRITISH COLUMBIA



KRISTIINA OVASKA, LENNART SOPUCK, AND CHRISTIAN ENGELSTOFT
WITH REBECCA GOLAT
BIOLINX ENVIRONMENTAL RESEARCH LTD.
SIDNEY, BRITISH COLUMBIA



27 April 2023
10:40-11:00 am



Sharp-tailed Snake Outreach and Mitigation on the Coast Mountain (BC) Common Sharp- tailed Snake (*Contia tenuis*) population

Veronica Woodruff
vwoodruff@clearcourse.ca
With Support from Dr. Leslie Anthony



27 April 2023
11:00-11:20 am

50 Years of Recaptures Growth and Longevity in the Northern Rubber Boa (*Charina bottae*) from Long-term Recapture Datasets

Mark V. Leppin*
Richard F. Hoyer
Dede H. Olson
Robert T. Mason



Life History of the Ring-necked Snake in the Pacific Northwest

Chris Rombough



PRESENTATION D-Data
MA L-Lots of data
DLS S-So much data

Translocation of a Ring-necked Snake Population

Chris Rombough



27 April 2023
11:20-11:40 am
& 11:40 am -12:00 noon



View from back of room during Chris Rombough's Ring-necked Snake Life History Presentation
11:38 am



27 April 2023
01:20-01:40 pm

Natural History of Venoms and Their Role in the Evolutionary Success of Viperid Snakes

Stephen P. Mackessy

Joint Meeting of WA TWS, NW PARC and SNVB – Grand Mound, WA



School of Biological Sciences
University of Northern Colorado





27 April 2023
01:40-02:00 pm

The presentation cover features a photograph of a rattlesnake with a brown and tan patterned body, coiled on a light-colored, textured rock surface. The title 'Genomic Insight into the Biology of Rattlesnakes' is written in large, bold, black font in the upper right. Below the title, the authors' names are listed with superscripted affiliations. The event details 'Snake Ecology Symposium' and 'April 2023' are at the bottom right. A diagonal black line runs from the top left towards the bottom right, passing over the snake image. The top and bottom of the slide are framed by solid brown bars.

Genomic Insight into the Biology of Rattlesnakes

Blair W. Perry¹, Drew R. Schield², Todd A. Castoe³
¹Washington State University
²University of Colorado Boulder
³University of Texas Arlington

Snake Ecology Symposium
April 2023

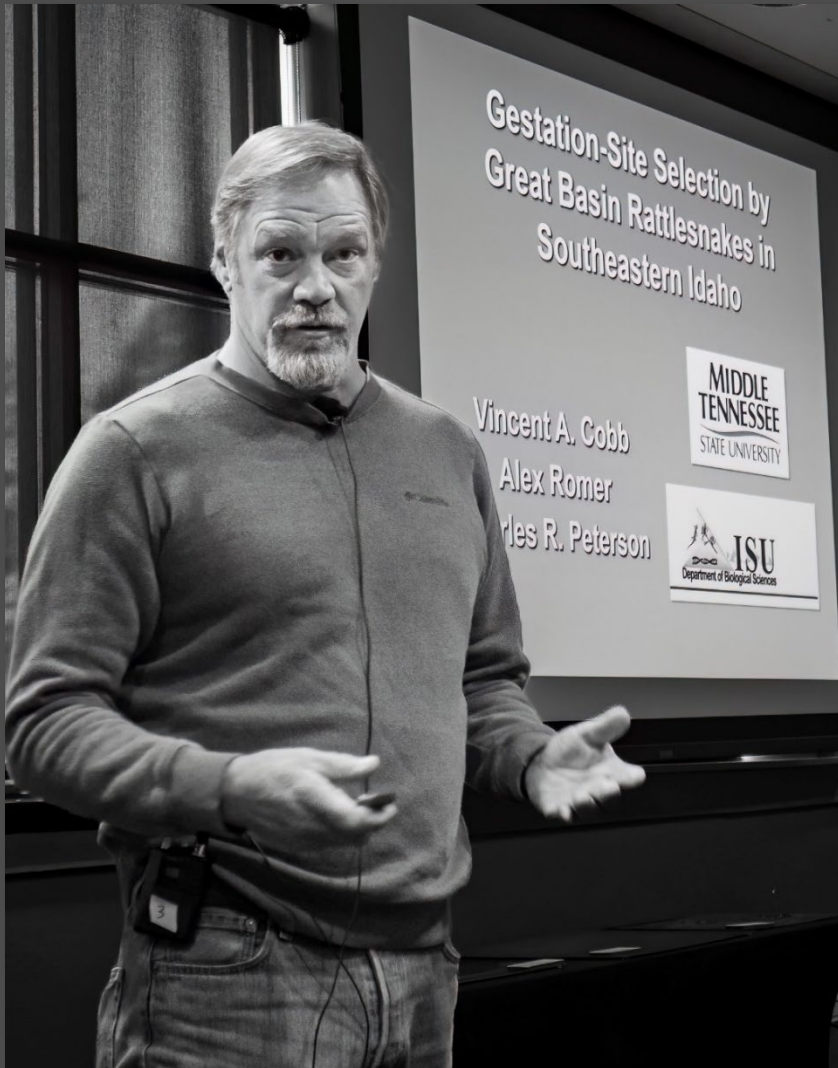


27 April 2023
02:00-02:20 pm

Population Dynamics of Midget Faded Rattlesnakes



Joshua Parker, Ph.D., Fresno City College
Stephen Spear, Ph.D., USGS
Charles Peterson, Ph.D., Idaho State University
Stephen Mackessy, Ph.D., University of Northern Colorado
Cara Smith, Ph.D., University of Colorado, Anschutz



27 April 2023
02:20-02:40 pm

Gestation-Site Selection by Great Basin Rattlesnakes in Southeastern Idaho

Vincent A. Cobb
Alex Romer
Charles R. Peterson





27 April 2023
03:00-03:20 pm

Ecological Variation of Washington Northern Pacific Rattlesnake Populations



...in a World Shaped by Humans

Daniel Beck & many Collaborators



27 April 2023
03:20-03:40 pm

Survival, recruitment, and population growth (λ) of
Great Basin Rattlesnakes (*Crotalus lutosus*)



Bryan T Hamilton

Modeling Western Rattlesnake habitat use and connectivity



27 April 2023
03:40-04:00 pm

Stephen Spear

Josh Parker, Charles Peterson, Chris Jenkins
Lisette Waits



27 April 2023
04:00-04:20 pm

Does the presence of conspecifics influence the seasonal migrations of communally denning Prairie Rattlesnakes (*Crotalus viridis*)?



Javan M. Bauder¹ and Charles R. Peterson²

¹U.S. Geological Survey, Arizona Cooperative Fish and Wildlife Research Unit, University of Arizona, Tucson, Arizona

²Idaho State University, Department of Biological Sciences, Pocatello, Idaho





Snakes of Idaho Photographs – Contribution of Chuck Peterson
27 April 2023



Adam Tiegs & colleague
of AdamsAV Service
Our quality AV support
28 April 2023
07:58 am

Marc Hayes
Introducing Day 2
28 April 2023
08:06 am

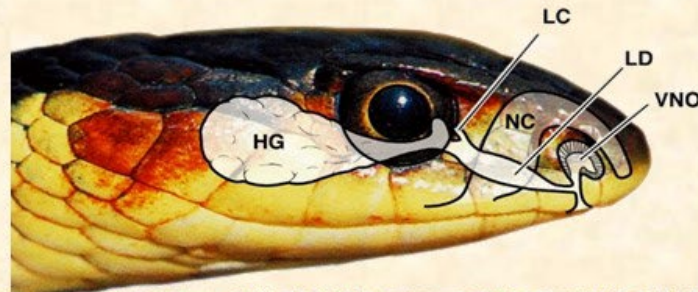




BREEDING AND FEEDING: HARDERIAN GLAND CONSTITUENTS MEDIATE VOMERONASAL FUNCTIONING IN GARTERSNAKES

Robert T. Mason and Ehren J. Bentz
Integrative Biology
Oregon State University

Snake Ecology Symposium
28 April 2023



28 April 2023
08:20-08:40 am

Dark, cold, and hungry: Gene expression during prolonged winter dormancy in garter snakes.



David L. Hubert, *PhD*
Department of Integrative Biology
04.28.2023



28 April 2023
08:40-09:00 am



28 April 2023
09:00-09:20 am

USGS
science for a changing world

FOREST SERVICE
U.S.
DEPARTMENT OF AGRICULTURE

Striped Whipsnake
Charles R. Peterson

Climate futures for snakes in the Pacific Northwest

David Pilliod¹, Michelle Jeffries¹, Robert Arkle¹, Dede Olson²

U.S. Department of The Interior
U.S. Geological Survey

¹USGS Forest and Rangeland Ecosystem Science Center, Boise, Idaho
²USDA Forest Service Pacific Northwest Research Station, Corvallis, Oregon



28 April 2023
09:20-09:40 am

Effects of the Cheatgrass-fire Cycle on Reptiles in Sagebrush Steppe

Kristina J. Parker¹

David S. Pilliod¹

Jay D. Carlisle²

Matthew A. Williamson³

¹U.S. Geological Survey, Forest and Rangeland Ecosystem Science Center, Boise, Idaho

²Intermountain Bird Observatory, Boise, Idaho

³Boise State University, Human Environmental Science Department, Boise, Idaho

This information is preliminary and is subject to revision. It is being provided to meet the need for timely best science. The information is provided on the condition that neither the U.S. Geological Survey nor the U.S. Government shall be held liable for any damages resulting from the authorized or unauthorized use of the information.

The Effects of Trail- based Outdoor Recreation on Squamates in an Urban- Proximate Park



Blake Looney, BS

Gareth Hopkins, Ph.D., Western Oregon University

Ashley D'Antonio, Ph.D., Oregon State University

Photo: Terry W. (pregoninvasiveshot@ns.org)



28 April 2023
09:40-10:00 am



Reptile Management at a Public Preserve



**Don't
Take the
Snakes!**

28 April 2023
10:20-10:40 am



ROAD-CROSSING ECOLOGY OF SNAKES IN CENTRAL WASHINGTON'S SHRUB-STEPPE: A SNAPSHOT OF MORTALITY, OCCURRENCE, AND ACTIVITY

By Adrian Slade and Tyler Larsen



28 April 2023
10:40-11:00 am



Divergent life-history ecotypes in the garter snakes of Eagle Lake A 30 year journey of G, E, and (G x E)

Anne Bronikowski
Professor, Integrative Biology
Kellogg Biological Station
Michigan State University



28 April 2023
11:00-11:20 am

Snake Fungal Disease



Status & Strategy

Deanna H. (Dede) Olson: USFS, PNW, Corvallis

Matt Allender: Univ. Illinois, Urbana-Champaign

Katie Haman: Washington DF&W, Olympia

Ellen Haynes: SCWDS, Univ. Georgia, Athens

Jeff Lorch: USGS Nat'l Wildl. Health Center, Madison

Jenna Palmisano: Univ. Central Florida, Orlando

Allan Pessier: Washington State Univ., Pullman



Thank You Esteemed Coauthors!

28 April 2023
11:20-11:40 am



Snake Fungal Disease on the Morley Nelson Snake River Birds of Prey National Conservation Area

Megan Yrazabal
Idaho Army National Guard
Snake Ecology Symposium
28 April 2023



28 April 2023
11:40 am - 12:00 noon



CRP

Chris Jenkins (moderator), Lisa Hallock, Dede Olson, Lameace Hussain, and Steve Mackessy
Snake Talk Panel Discussion - Snake Ecology Symposium

28 April 2023

01:20 – 02:40 pm



28 April 2023
03:00 - 03:20 pm



28 April 2023
03:20 - 03:40 pm

Movement Ecology, Management, and Conservation of Great Basin Rattlesnakes (*Crotalus Oreganus Lutosus*) on Military Training Lands in Northern Utah.

CHRIS FRAUENHOFER

Utah Army National Guard, Camp Williams, 17800 Redwood Rd, Bluffdale, UT 84065;
cfrauenhofer@utah.gov

Photo: Derek Halm



Determining Idaho Native Snake Elevation Ranges Using iNaturalist Data

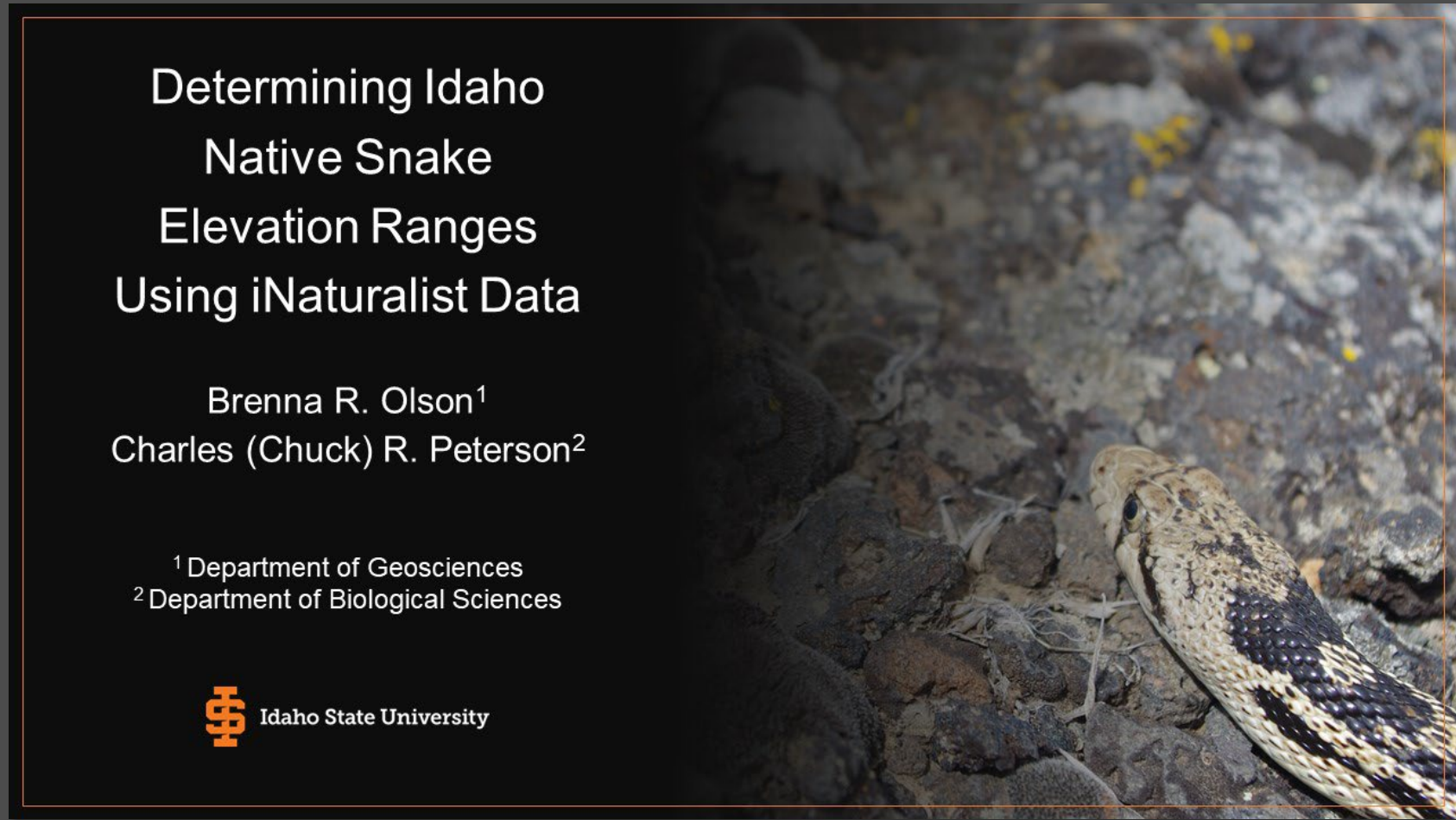
Brenna R. Olson¹
Charles (Chuck) R. Peterson²

¹ Department of Geosciences
² Department of Biological Sciences



Idaho State University

28 April 2023
03:40 - 04:00 pm



28 April 2023
04:00 - 04:20 pm

Estimating Body Length from Tail Length in Pacific Slope Gophersnakes (*Pituophis catenifer*)



Marc P Hayes
Aquatic & Herpetological Research
Eagle Point, Oregon

Paul R Yarnold
Optimal Data Analysis LLC
Chicago, Illinois



SNAKE ECOLOGY SYMPOSIUM
LIFETIME AWARD

to

Richard F. Hoyer

for

Over 50 years of dedicated fieldwork
as a herpetologist raising awareness
about the value and importance
of snakes

award detail

Richard Hoyer receiving his Lifetime Award
Marc Hayes and Bob Mason on left
28 April 2023
16:48



Chuck Peterson (R) getting his special snake photograph with his students' signatures – the photo of a Western Terrestrial Garter Snake (*Thamnophis elegans vagrans*) was a gift from Alan St John

—
Bob Mason & Marc Hayes (L)
28 April 2023
16:50



Chuck Peterson displaying his special photograph at the NW PARC assembly
28 April 2023



Special Recognition

Alan St John – long-time field herpetologist was unable to attend the Snake Ecology Symposium. Despite that, Alan contributed several key pieces to the effort. As such, we are honored to recognize Alan with a plaque (detail below)



SNAKE ECOLOGY SYMPOSIUM
LIFETIME AWARD

to

Alan D. St. John

for

A lifetime of promoting herpetology,
especially snakes, in the Pacific
Northwest via fieldwork,
instruction and photography

Special Assistance

The following people provided assistance to various pieces of the Snake Ecology Symposium (connecting speakers, providing pictures and other items) that improved its quality:

Green, Greg

Howell, Betsy

Issac, Leigh Ann

Jenkins, Chris

Karplus, Tracy

Mason, Bob

Olson, Dede

Ovaska, Kristiina

Ringo, Jennifer

Rombough, Chris

Schuett, Gordon

Slade, Adrian

Waterstrat, Teal



Post-Symposium gathering at the
McMenamin's Olympic Club
Centralia, Washington

Left to right seated: Bob Mason, Richard
Hoyer, Mark Leppin, Dustin Campbell,
David Hubert, Paul Bartlet, Vince Cobb
and Josh Parker. Standing: Marc Hayes
Chuck Peterson was taking the picture
28 April 2023
18:21





Black and White Photographs by Charles R. (Chuck) Peterson

petechar@isu.edu

<https://www.flickr.com/photos/petechar/>