



Northwest Lichenologists

Centennial Science

100 years since the Association first convened

May 20-23, 2024

Gonzaga University, Spokane



PROGRAM

MONDAY MAY 20, 2024

2:00 PM – 5:00 PM. Northwest Scientific Association. BOARD MEETING. Dan Gavin, President.

Location: Jepson 113 (Seminar Room).

5:00 PM – 8:00 PM. SOCIAL AND ICE BREAKER, NO HOST BAR, FINGER FOOD

Location: College Commons, Humanities Building, Gonzaga.

Includes an informal presentation by Nick Zentner on the interesting connections between the geologist J Harlen Bretz, the early investigations of the Missoula floods, and events surrounding the founding of the Northwest Scientific Association in Spokane in 1923.

TUESDAY MAY 21, 2024

8:00 AM. REGISTRATION OPENS, JEPSON CENTER LOBBY

9:00 AM – 9:10 AM. INTRODUCTION, JEPSON 114 (WOLFF AUDITORIUM)

Presenting author shown only; full author list and abstracts are available online.

9:10 AM – 10 AM. **PLENARY TALK 1, JEPSON 114 (WOLFF AUDITORIUM)**

Erim Gómez, University of Montana

[Age of invasive species: Inland Northwest amphibian case study.](#)

BREAK: 10:00 AM – 10:20 AM

CONCURRENT ORAL SESSION 1: FISHERIES AND WILDLIFE BIOLOGY, JEPSON 114 (WOLFF AUDITORIUM), CHAIR: EMILY SMOOT

10:20 AM – 10:40 AM. Seth Barr. A HYPOTHESIZED AGGREGATIVE PREDATORY RESPONSE OF WALLEYE (*SANDER VITREUS*) ON WHITE STURGEON (*ACIPENSER TRANSMONTANUS*) IN THE UPPER COLUMBIA RIVER IN LAKE ROOSEVELT, WASHINGTON.

10:40 AM – 11:00 AM. Elisa Mickelson. AN INDEX OF BIOTIC INTEGRITY FOR MACROINVERTEBRATE STREAM BIOASSESSMENT CONDUCTED BY COMMUNITY SCIENTISTS IN THE PACIFIC NORTHWEST.

11:0 AM – 11: 20 AM. Chris Looney. EXPANSION OF THE EXOTIC BUMBLE BEE *BOMBUS IMPATIENS* (CRESSON) IN BRITISH COLUMBIA AND WASHINGTON STATE.

11:20 AM – 11: 40 AM. Emily Smoot. MODELING THE EFFECTS OF CLIMATE CHANGE ON HABITAT SUITABILITY FOR *LUDWIGIA* SPP. AND *FALLOPIA* SPP. IN THE PACIFIC NORTHWEST.

11:40 AM – 12: 00 PM. TBD

**CONCURRENT ORAL SESSION 2: LICHENS AND BRYOPHYTES, JEPSON 120 (HOGAN CLASSROOM),
CHAIR: ROGER ROSENTRER**

10:20 AM – 10:40 AM. Roger Rosentreter. FIRE ECOLOGY AND THE FORGOTTEN LICHENS.

10:40 AM – 11:00 AM. Bruce McCune. VISUALIZING USNIC ACID IN LICHENS WITH ANISALDEHYDE REAGENT.

11:00 AM – 11:20 AM. Xinhui Yu. SYMBIOTIC SYNERGY: WHEN CHEMIST MEET LICHENOLOGIST.

11:20 AM – 11:40 AM. Meghan Lake. DIFFERENTIAL WATER HOLDING CAPACITY IN BRYOPHYTE SPECIES AND ORGANIZATIONAL LEVELS.

11:40 AM – 12:00 PM. Stephen Sharrett. RARITY, CAUSE OR CONSEQUENCE: COMPARATIVE POPULATION GENOMICS OF SIX LICHENIZED FUNGI WITH CONTRASTING RANGE SIZES, LIFE HISTORIES, AND MORPHOLOGIES.

LUNCH: 12:00 PM – 1:30 PM

1:30 – 2:20 PM. PLENARY TALK 2, JEPSON 114 (WOLFF AUDITORIUM).

DIANA SIX, University of Montana

[From microbes to ecosystems: How bark beetles do what they do.](#)

**CONCURRENT ORAL SESSION 3: SPECIAL SESSION: FOREST HEALTH AND DISTURBANCE ECOLOGY,
JEPSON 114 (WOLFF AUDITORIUM), CHAIR: SKYE GREENLER**

2:30 PM – 2:50 PM. David Shaw. INTERACTING DISTURBANCE ACROSS THE CLIMAX LODGEPOLE PINE FORESTS OF SOUTH-CENTRAL OREGON PUMICE PLAINS.

2:50 PM – 3:10 PM. Garrett Meigs. WILDFIRE IMPACTS ON LARGE TREES: DIVERGING FIRE EFFECTS AND MANAGEMENT IMPLICATIONS IN OPEN VS. CLOSED CANOPY FORESTS.

3:10 PM – 3:30 PM. Joe Celebrezze. POST-FIRE RECOVERY OF MIXED-CONIFER FORESTS IN THE BLUE MOUNTAINS: RELATIONSHIPS BETWEEN SPECTRAL RECOVERY AND FIELD DATA.

BREAK: 3:30 PM – 3:40 PM

3:40 PM – 4:00 PM. Skye Greenler. QUANTIFYING LANDSCAPE-SCALE CULTURAL BURNING PATTERNS ON KARUK ANCESTRAL TERRITORY IN NORTHERN CALIFORNIA THROUGH BLENDED INDIGENOUS AND WESTERN SCIENTIFIC METHODS.

4:00 PM – 4:20 PM. Bill Carlson. FACTORS THAT COULD PREDISPOSE WESTERN REDCEDAR TO PROBLEMS IN OUR WARMING CLIMATE.

4:20 PM – 4:40 PM. Constance Harrington. TIMING IS EVERYTHING! FOLIAR DAMAGE AND GROWTH OF DOUGLAS-FIR ASSOCIATED WITH PROVENANCE AND ENVIRONMENT.

CONCURRENT ORAL SESSION 4: LICHENS AND BRYOPHYTES Continued. , JEPSON 120 (HOGAN CLASSROOM), CHAIR: XINHUI YU

2:30 PM – 2:50 PM. Lalita Calabria. I GOT NINETY-NINE PROBLEMS BUT FINDING *HYPOTRACHYNA AFROREVOLUTA* AIN'T ONE: AN UPDATE ON THE DISTRIBUTION OF A RARE, UNDER-RECORDED LICHEN IN WASHINGTON STATE.

2:50 PM – 3:10 PM. Julianna Paulsen. MOBILE GENETIC ELEMENTS IN RARE, THREATENED, AND RANGE-RESTRICTED LICHENIZED FUNGI.

3:10 PM – 3:30PM. Elaine Larsen. *Nostoc* GENOME ANNOUNCEMENT.

BREAK: 3:30 PM – 3:40 PM

CONCURRENT ORAL SESSION 5: BROADENING PARTICIPATION AND RESTORATION ECOLOGY, JEPSON 120 (HOGAN CLASSROOM), CHAIR: MEGHAN LAKE

3:40 PM – 4:00 PM Meg Lake. DECONSTRUCTING WHITE IMPERIALIST PARADIGMS IN SCIENCE: INTEGRATING INTERDISCIPLINARY FRAMEWORKS INTO BIOLOGICAL RESEARCH.

4:00 PM – 4:20 PM. Srihari Yamanoor. LOW-COST IOT PLATFORMS FOR POPULATION HEALTH METRIC COLLECTION BY CITIZEN SCIENTISTS.

4:20 PM – 4:40 PM. Justin Bastow. ESTIMATED DISPERSAL ABILITIES OF A DIVERSE WILD BEE ASSEMBLAGE ACROSS A FRAGMENTED ENDANGERED ECOSYSTEM.

4:40 PM – 5:00 PM. Heidi Dobson. UNDERGRADUATE RESEARCH IDENTIFYING FOCAL PLANTS IN THE RESTORATION OF FLOWER-INSECT COMMUNITIES.

POSTERS: 5:00 PM – 8:00 PM, JEPSON CENTER LOBBY. No host bar, snacks

WEDNESDAY MAY 22, 2024

NORTHWEST LICHENOLOGISTS FIELD TRIP AND WORKSHOP

Morning field trip to Dishman Hills, Location: Steven's Creek Trailhead, Time: 8:30 am

Scytinium Identification Workshop with Daphne Stone Location: Hughes Hall 105, Time: 1:30 pm

8:00 AM. REGISTRATION OPENS, JEPSON CENTER LOBBY

9:00 AM – 9:10. INTRODUCTION, JEPSON 114 (WOLFF AUDITORIUM)

9:10 AM – 10 AM. PLENARY TALK 3, JEPSON 114 (WOLFF AUDITORIUM)

RICHARD WAITT, U.S. Geological Survey, Cascades Volcano Observatory.

[The “debacle which swept the Columbia Plateau” one hundred years on.](#)

BREAK: 10:00 AM – 10:20 AM

ORAL SESSION 6: GEOLOGY AND GEOMORPHOLOGY, PALEONTOLOGY, JEPSON 114 (WOLFF AUDITORIUM), CHAIR: BRIAN ATWATER

10:20 AM – 10:40 AM. Brian Atwater. VOLCANIC ASH IN A VARVED RECORD OF MISSOULA-FLOOD PERIODICITY.

10:40 AM – 11:00 AM. George Last. THE FRENCHMAN HILLS – TONNEMAKER MAMMOTH SITE, GRANT COUNTY, WASHINGTON.

11:00 AM – 11: 20 AM. John Orcutt. PALEOENVIRONMENT AND LOCOMOTION OF THE DESMOSTYLIAN *BEHEMOTOPS PROTEUS*.

11:20 AM – 11: 40 AM. Patrick Pringle. 90 YEARS OF TREE-RING STUDIES ON SUBFOSSIL WOOD IN CASCADIA—WITH EMPHASIS ON THE PIONEERING WORK OF DONALD B. LAWRENCE AND DAVID K. YAMAGUCHI.

11:40 AM – 12: 00 PM. Jon Riedel. A RIVER IN TIME: THE GEOLOGIC HISTORY OF SKAGIT RIVER VALLEY, WASHINGTON.

LUNCH: 12:00 PM – 1:30 PM: BUSINESS MEETING. JEPSON 113 (SEMINAR ROOM).

ORAL SESSION 7: SPECIAL SESSION ON THE SCIENCE OF LAKE COEUR D’ALENE, JEPSON 114 (WOLFF AUDITORIUM), CHAIR: CRAIG COOPER

1:30 PM – 1:50 PM. Craig Cooper. COEUR D’ALENE LAKE: UPDATED CONCEPTUAL MODEL FOR STRUCTURE AND MIXING

1:50 PM – 2:10 PM. Daniel Gavin. CLIMATE HISTORY SINCE THE MISSOULA FLOODS RECORDED IN THE SEDIMENTS OF THE PROGRADING DELTA OF THE ST JOE RIVER, COEUR D’ALENE LAKE.

2:10 PM – 2:30 PM. Ben Scofield. PHENOLOGY AND DIVERSITY OF SUBMERGED AQUATIC MACROPHYTES IN THE COEUR D’ALENE BASIN.

2:30 PM – 2:50 PM. Joanna Joyner-Matos. STRATEGIES TO TOLERATE TRACE METAL MIXTURES EMPLOYED BY MACROINVERTEBRATES IN THE LATERAL LAKES OF THE COEUR D’ALENE RIVER.

BREAK: 2:50 PM – 3:10 PM

ORAL SESSION 8: BOTANY, PLANT ECOLOGY, AND FIRE ECOLOGY, and FORESTRY, JEPSON 114 (WOLFF AUDITORIUM), CHAIR: CLAIRE TORTORELLI

3:10 PM – 3:30 PM. Lucy Kerhoulas. SITKA SPRUCE ECOPHYSIOLOGY.

3:30 PM – 3:50 PM. Susan Waters. RARE PLANTS AND POLLINATOR DIVERSITY IN THE PACIFIC NORTHWEST.

3: 50 PM – 4:10 PM. Claire Tortorelli. SUCCESSIONAL TRAJECTORIES IN POST-FIRE FORESTS: INSIGHTS FROM REVISITED FOREST INVENTORY PLOTS IN THE PACIFIC NORTHWEST.

4:10 PM – 4:30 PM. Graham Frank. INDICATORS OF BIODIVERSITY ACROSS TAXA FOR EARLY SERAL FORESTS

4:30 PM – 4:50 PM. Neil Williams. FACILITATING TRANSFORMATION TO MULTI-AGED STRUCTURES IN NORTHERN ROCKY MOUNTAIN PONDEORSA PINE (*PINUS PONDEROSA*) FORESTS.

5 PM – 8 PM: POSTER SESSION, STUDENT POSTER WINNERS ANNOUNCED, JEPSON CENTER LOBBY. No-host bar, snacks

THURSDAY MAY 23, 2024.

FIELD TRIPS:

1. TURNBULL WILDLIFE REFUGE

8:30 AM – 1:00 PM. Meet outside Myrtle Woldson Performing Arts Center at Vans provided.

This half-day field trip will visit the Channeled Scablands of Turnbull National Wildlife Refuge. Here, ponderosa pine woodlands and wetlands carved out by the Missoula Floods harbor a diversity of wildlife. Our trip should coincide with the peak of the spring wildflower bloom, so Turnbull's colorful flora will be a highlight of our visit. The refuge is a favorite site for local birdwatchers, with about 200 breeding, resident, and migrating bird species including resident trumpeter swans and other waterfowl. We may even spot some of the refuge's mammals, including badgers, porcupines, and moose. We will explore Turnbull's landscapes and biodiversity by driving the Pine Lake Auto Loop and, weather-permitting, walking some short trails. Since its founding in 1937, the refuge has been an important site for field research. This research has ranged from geomorphology to fire recovery to forestry to wildlife management to the impacts of invasive species, so regardless of your interests, there's something for you at Turnbull!



2. NORTHWEST LICHENOLOGISTS: MT. SPOKANE.

8:30 – 4:00 PM. Meet outside Myrtle Woldson Performing Arts Center. Carpooling.

During this field trip we will observe the lichens at two sites in Mount Spokane State Park. At Mount Kitt Carson we will see many species present in a mixed coniferous forest and observe lichen communities on rock outcrops. The second stop will be the hairpin turn to observe lichens in the humid western red cedar forest.

LIST OF POSTERS

- Atwater, Brian. EARTHQUAKE EFFECTS SURVEYED DURING THE NINETEENTH CENTURY AS ECOLOGICAL FEATURES OF CHINOOKAN TIDELANDS.
- Bartholomew, Chanda. AN ANNOTATED CHECKLIST OF THE BEES OF WASHINGTON STATE
- Blackketter, Cody. POLLINATORS OF TWO RARE WASHINGTON SHRUB-STEPPE ENDEMIC PLANTS.
- Burnett, Evan. EXAMINING THE DRIVERS OF NOCTURNAL BEHAVIOR OF PIKAS AT LOWER ELEVATIONS IN LASSEN NATIONAL FOREST, CALIFORNIA.
- Frago, Jonah. EFFECTS OF TIME, LOCATION, AND HIVE WEIGHT ON HONEY BEE (*APIS MELLIFERA*) GUT MICROBIOME COMPOSITION AND DIVERSITY.
- Fisher, Marisa. FLORAL MUTUALISTS AND ANTAGONISTS OF AN ENDANGERED MONTANE WILDFLOWER IN EASTERN WASHINGTON.
- Grage, Elise. THE EVERGREEN STATE COLLEGE PARKING LOTS: A HOTSPOT FOR MACROLICHEN DIVERSITY.
- Kim, Hannah. THE EFFECTS OF SALINITY ON THE CUTANEOUS MICROBIOME AND BD INFECTION OF THE PACIFIC TREE FROG (*PSEUDACRIS REGILLA*).
- Looney, Chris. SETTLING IN: OBSERVATIONS OF THE NESTING AND OVERWINTERING BIOLOGY OF *B. IMPATIENS* IN ITS INTRODUCED RANGE.
- Mau, Erin. CONSERVATION GRAZING: PUBLIC- PRIVATE PARTNERSHIPS FOR GRASSLAND RESTORATION TO PROMOTE POLLINATOR DIVERSITY.
- Miller, Quinn. CHANGES IN AQUATIC INSECT FAUNA ALONG MILL CREEK (BLUE MOUNTAINS, SE WA) AND CAUSATIVE FACTORS.
- Ogborn, Rosie. COMPARISON OF BIODIVERSITY IN TEMPORARY AND PERMANENT PONDS.
- Roberts, Olivia. METALS MATTER FOR MOSSES: POLLUTION EFFECTS ON INVERTEBRATE COMMUNITIES.
- Schell, Jeff. THE EFFECT OF MOON PHASE ON PREDATOR AND PREY ACTIVITY LEVELS ON TURNBULL NATIONAL WILDLIFE REFUGE.
- Shaw, David. THE OCCURRENCE OF WESTERN OAK MISTLETOE (*PHORADENDRON VILLOSUM* SUBSP. *VILLOSUM*) ON NON-NATIVE URBAN TREES OF WESTERN OREGON, USA.
- Tabino, Makenna. DETERMINING THE LONG-TERM EFFECTIVENESS OF SEEDING POST-DAM REMOVAL IN THE ELWHA RIVER, WA, THROUGH SOIL SEED BANK ANALYSIS.
- Torres, Alejandro. SPECIES ABUNDANCE AND RICHNESS OF NATIVE BEES IN EWU'S PRARIE RESTORATION SITE COMPARED TO ADJACENT WHEAT FIELD, AND NATURAL AREAS.
- van Roon, Naomi. MODELING RECREATIONAL RISK ON THE LANDSCAPE: A GIS ANALYSIS OF RECREATION ACCIDENT RESPONSE IN THE VICINITY OF THE I-90 CORRIDOR, WASHINGTON.
- Wijayratne, Upekala. RIPARIAN FOREST TREATMENT ALONG EAST FORK BIG CREEK, MALHEUR NATIONAL FOREST.

NWSA Sites

1. Ruby River (conference hotel)
2. Jepson Center (talks & posters)
3. Humanities Building (opening reception)
4. Hughes Hall (Lichenology workshop)

Food Options

1. Osprey (in Ruby River Hotel, riverfront patio)
2. Thomas Hammer (in Jepson Center, coffee)
5. Hemingson Center (market & fast food options)
6. Hamilton Street (multiple restaurants)
7. No-Li Brewing & Bangkok Thai (riverfront patios)
8. Division & Ruby Streets (multiple fast food options)

