



## Rocky Mountains Cooperative Ecosystem Studies Unit

### NEWSLETTER Winter 2024

**RM-CESU Researchers Discuss High Elevation Wildlife Response to Diminished Snow Patches in PNAS Nexus Article:** The National Park Service, Wildlife Conservation Society and Colorado State University collaborated on an observational project in the Northern Rocky Mountains to determine the effects of the loss of snow patches on the alpine populations of mountain goats. They observed the autonomic responses to increased temperatures modulated by wind, ambient temperature, and winter fur on and away from snow patches by mountain goats (*Oreamnos americanus*). Contrary to expectations of reduced thermal stress, respiration rates were not decreased on snow patches, but use of snow was strongly correlated with decreased metrics of insect harassment. Citation is: [Forest Hayes and Joel Berger, 2023. Snow patch refugia benefits for species of periglacial zones—Evidence from a high-elevation obligate, PNAS Nexus, 2023, 2, 1–8](#)

**Consortium of RM-CESU Research and Management Groups Contribute to Ecosphere Article on Elk Population Dynamics in the Greater Yellowstone (GYE):** Data and information on elk pregnancy in the GYE were provided by the following RM-CESU partners: University of Wyoming, Utah State University, National Park Service, US Fish and Wildlife Service, US Geological Survey and Wyoming Game and Fish, and others, to assess the long-term effects of “green-up” on elk in the Greater Yellowstone. In this study, the researchers tracked phenological changes through the growing season and examined how their timing affected the probability of pregnancy in an ungulate population. Data were collected for elk (*Cervus canadensis*) across the GYE by sampling 1106 adult females in winter at 25 sites over a 13-year period. Article citation is: [Bidder, Owen R., Thomas Connor, Juan M. Morales, Gregory J. M. Rickbeil, Jerod A. Merkle, Rebecca K. Fuda, Jared D. Rogerson, et al. 2023. Forage Senescence and Disease Influence Elk Pregnancy across the Greater Yellowstone Ecosystem. Ecosphere 14\(12\): e4694.](#)

**RM-CESU Partners Produce a New Wildlife Migration Documentary, Focused on Grand Teton NP:** *Animal Trails: Rediscovering Grand Teton Migrations* is a [25-minute video available for streaming](#). This film was co-produced by the Wyoming Migration Initiative, which includes the NPS, University of Wyoming, Wyoming Game and Fish, Idaho Fish and Game, and the Shoshone-Arapaho Tribes. [See details on the making of the film](#). The film documents more than a decade of research revealing how Grand Teton National Park’s mule deer and pronghorn actually depend on habitats up to 190 miles away from the park boundaries. Grand Teton National Park has made a dedicated effort to map mule deer migrations since 2013, complementing parallel efforts by the University of Wyoming, Idaho Fish and Game, Wyoming Game and Fish Department, and the Shoshone and Arapaho Tribes Fish and Game of the Wind River Indian Reservation.



**Collaboration by Federal Agency Partners Show How Science Can Support Agency Decision-Making:** Public land management agencies in the US are committed to using science-informed

decision-making, but there has been little research on the types and topics of science that managers need most to inform their decisions. Federal Agency scientists used the National Environmental Policy Act to identify four types of science information needed for making decisions relevant to public lands: (1) data on resources of concern, (2) scientific studies relevant to potential effects of proposed actions, (3) methods for quantifying potential effects of proposed actions, and (4) effective mitigation measures. In this article the USGS, BLM, and USDA-ARS used this framework to analyze 70 Environmental Assessments completed by the Bureau of Land Management in Colorado. Article citation is: S. Carter, T. Haby, J. Meineke A. Foster, L. McCall, L Espy, M. Gilbert, J. Herrick, and K. Prentice, 2023, *Prioritizing science efforts to inform decision making on public lands*, *Front Ecol Environ* 2023; 21(10): 453–460, doi:[10.1002/fee.2672](https://doi.org/10.1002/fee.2672)



**University of Montana Post-Doc Tracks Urban Wildlife with Trail Cameras:** Chris Hansen is a postdoctoral researcher in the Boone and Crockett Wildlife Conservation Program at the University of Montana. His team deployed 178 motion-activated trail cameras at random sites across urban, suburban, exurban, rural and wild regions near to Missoula, Montana during a comprehensive study spanning from May to October 2019-2020. The research aimed to identify how the number of houses in an area affects how many different types of species are present, how common they are and when they are most active during the day. The findings, recently published in the *Journal of Mammalogy*, revealed that as cities get more crowded, there are fewer types of mammals around. Larger animals, in particular, are less common in urban areas. The [citation](#) is: C. Hansen, R. Kays, J. Millspaugh, 2023, *From backyard to backcountry: changes in mammal communities across an urbanization gradient*, *Journal of Mammalogy*, Also, see [news article](#) describing the research..

**Prescribed Fire in Wilderness: Aldo Leopold Wilderness Research Institute (USDA-Forest Service) and Western Colorado University, Center for Public Lands, Publish a Synthesis Paper Based on a 2022 Workshop:** In September 2023 this paper was produced by two of the RM-CESU partners as a framework for understanding how prescribed fire may be used to restore and maintain wilderness ecosystems in an era of intensifying environmental change. It further includes an assessment of current barriers for prescribed fire in wilderness identified by a group of experts in fire and wilderness management who participated in a workshop held in 2022 at Western Colorado University. The synthesis paper, titled “*Prescribed Fire and*

*U.S. Wilderness Areas: Barriers and Opportunities for Wilderness Fire Management in a Time of Change* “ can be found [here](#).

The “[story map](#)”, is a companion piece to the Wilderness and Fire Workshop synthesis paper, and presents the main themes of this paper alongside visuals.

**Boise State University Announces Seminar Series for Spring 2024, The Idea of Nature:** Starting on February 9, 2024, Boise State will hold four hybrid seminars designed "to promote interdisciplinary inquiry and to foster dialogue across the campus and community, based on the premise that big questions need interdisciplinary answers". The listing of speakers and dates can be found at <https://scholarworks.boisestate.edu/ideaofnature/> At this website you can also download some of the previous years' lectures. Registration is required for the Zoom events, please send an email to [ideaofnature@boisestate.edu](mailto:ideaofnature@boisestate.edu), and a Zoom link will be emailed to you prior to the lecture. All lectures will begin at 6 PM MST.

**Partners Participate in Whitebark Pine Ecosystem Foundation's Monthly Webinar Series:** The "High-Elevation, Five-Needle White Pines: Science and Management Webinar Series" occurs the third Tuesday of each month from 12–1 p.m. Mountain Time during the academic year. All webinars are held by Zoom. This year's talks will cover a range of topics on high-five pines including: using drones to predict forest mortality, physiological responses to abiotic stressors, identifying high-priority areas for conservation, and restoration projects underway. You can [register for the entire monthly series](#), and the Zoom link will be the same each month. Seminars in February-May 2024 will include researchers from Montana State University, University of Colorado Denver and the US Forest Service. For more information, go to [webinar page](#).

## **STUDENT OPPORTUNITIES**

**Whitebark Pine Ecosystem Foundation (WBEF) Offers Two Student Research Grants:** The WBEF is accepting applications from undergraduate and graduate students conducting research on whitebark pine. WPEF will provide \$1000 - \$2000 to one grant recipient, and John Van Gundy is offering a separate \$1000 grant for research on whitebark pine dynamics under climate change. Applications are due March 1st, 2024. Learn more about the [grant program](#).

**Rocky Mountain Conservancy and Rocky Mountain NP (ROMO) announce Bailly Research Fellowship – Applications due February 1, 2024:** Graduate students who want to conduct research in ROMO have until the beginning of February 2024 to apply for this annual fellowship, a collaborative program between Rocky Mountain Conservancy (RMC) and the Continental Divide Research Learning Center (CDRLC) of Rocky Mountain NP. [Stipend information and "how to apply"](#).

## **FUNDING OPPORTUNITIES**

### **UW-NPS Research Station announces the 2024 Small Grants Program RFP**

The small Grants Program is funded by the National Park Service and the UW-NPS Research Station at the University of Wyoming. It is limited to US academic institutions, government, and NGO researchers conducting their studies in the Greater Yellowstone Area. See [uwnps.org/funding-opportunities](http://uwnps.org/funding-opportunities) for more information, a list of past awards, and a link to annual reports of research going back to 1954.

Grants will be evaluated by a panel of park personnel and faculty in diverse fields based on intellectual merit (will the study advance our understanding in some keyway), and relevance to the Greater Yellowstone Ecosystem. We welcome proposals that address [Grand Teton National Park research priorities](#) and [Yellowstone National Park research priorities](#), but that is not necessarily a requirement for funding.

We encourage grant submissions by and/or for graduate student research support as these small grants can be a vital source of support for students working in the GYE.

For RFP details and to submit a proposal, go to [2024 UW-NPS Small Grants in InfoReady](#). Proposals due 1.31.2024.

**2024 Western National Parks Association (WNPA) Request for Proposals** WNPA supports the acquisition of knowledge by providing grants in support of research that benefits the management, preservation, and interpretation of National Park Service (NPS) resources served by WNPA. The research grant program supplements research programs of the NPS. Grant proposals are reviewed annually by WNPA's Research Committee, which consists of board members and other volunteers with extensive backgrounds in science and other relevant experience. For fiscal year 2024 funding consideration, all proposals must be submitted through

the [WNPA web portal](#) from October 2, 2023 through February 29, 2024 or until notice of allocated funding being exhausted, at which time the cycle will close.

## **JOB OPPORTUNITIES**

[Assistant or Associate Professor in Critical Minerals for the Energy Transition](#), School of the Environment, Washington State University, Pullman, WA (closes 1.31.2024)

[Social Scientist \(Science Coordinator\), GS-0101-13](#), National Park Service, Intermountain Region, Duty Station: Remote (Apply at USA Jobs in February 2024).

[Applied Science and Engagement Specialist](#), Human-Environment Systems, Boise State University, Boise, ID (closes 2.4.2024)

[Assistant Professor - Urban Forestry](#), Quinney College of Natural Resources, Utah State University, Logan, UT (review begins 2.5.2024)

[Assistant Teaching Professor in GIS](#), WA Franke College of Forestry and Conservation, University of Montana, Missoula, MT (review begins 2.14.2024)

[Assistant Teaching Professor Department of Society and Conservation](#), WA Franke College of Forestry and Conservation, University of Montana, Missoula, MT (review begins 2.14.2024)

[Assistant Professor of Forest Sciences](#), WA Franke College of Forestry and Conservation, University of Montana, Missoula, MT (review begins 2.28.2024)

[Ted Scripps Fellow in Environmental Journalism](#), University of Colorado, Boulder, CO (closes 3.1.2024)

**If you would like to post an announcement in the next RM-CESU Newsletter or on the website, please send to [rmcesu@cfc.umt.edu](mailto:rmcesu@cfc.umt.edu).**