



Rocky Mountains

Cooperative Ecosystem Studies Unit

Research, Education & Technical Assistance

NEWSLETTER

Fall 2018

RM-CESU NEWS & EVENTS

Glacier National Park Conservancy - Jerry O'Neal Research Fellowship -2019 Call

Applications are now being accepted for the **Glacier National Park Conservancy - Jerry O'Neal Research Fellowship** for work in Glacier National Park, Grant-Kohrs Ranch NHS, and Little Bighorn Battlefield NM. The fellowship aims to provide educational assistance for students seeking to understand natural and cultural resources issues and how these interact with human values. Special consideration will be given to proposals that address the following:

1. natural resource issues such as aquatic ecology, terrestrial ecology, fire ecology, invasive plants, and climate change
2. cultural resource issues, such as history and architectural studies, cultural landscape reports, ethnographic research and archeology
3. social science that informs resource management about a natural or cultural topic and/or that addresses visitor impacts to park resources

Competition is open to graduate students or superior upper division undergraduate students at RM-CESU universities and colleges only. Awards range from \$1000-5000. Applications must be submitted electronically by February 15, 2019. **Application Process**



Glacier National Park



Grant-Kohrs Ranch NHS



Little Bighorn Battlefield

Rocky Mountain NP Pikas in the News, with Studies Facilitated by the Rocky Mountains CESU

In a July 2018 press release, several University investigators summarize a recent journal publication based on an RM-CESU project at Rocky Mountain National Park (ROMO) related to pika populations. The article was published in the prestigious journal, **PLOS ONE**, titled: *Identification of a contact zone and hybridization for two subspecies of the American pika (Ochotona princeps) within a single protected area*. Authors are **Jessica A. Castillo Vardaro and Clinton W. Epps, Oregon State University, Benjamin W. Frable, Scripps Institution of Oceanography, University of California San Diego, and Chris Ray, Institute of Arctic and Alpine Research, University of Colorado Boulder**. This work was an outgrowth of the National Park Service's Climate Change Program funding for

a large, multi-park project to investigate pika populations and ecology throughout the western United States. Chris Ray, University of Colorado Boulder, received her project funding through the Rocky Mountain CESU agreement.



Credit: Oregon State University

The park-wide assessment of pika populations in ROMO showed that the park provides habitat for not one, but two subspecies of the American pika, a species thought to be closely connected with climate change. There are five known subspecies of the American pika, a small mammal related to rabbits and hares. The subspecies in Rocky Mountain National Park and other parts of the American West evolved due to gradual geographic separation from other lineages as a result of changes in climate over the past tens of thousands of years.

Pikas seek out icy pockets in alpine rock fields or lava flows and live near other pikas in small patches of these cool habitats. One key to their survival appears to be maintaining connectivity among different pika patches, which keeps a satisfactory level of genetic diversity among the broader population and allows for inevitable downturns in survival due to weather, predation, disease and other factors. The investigators analyzed genetic data obtained from fecal pellets and identified a previously unknown contact zone between the northern and southern Rocky Mountain lineages within the park.

The discovery presents a twist in an ongoing debate about listing the American pika or its subspecies under the U.S. Endangered Species Act. In 2010, the U.S. Fish and Wildlife Service, denied the petition, citing a lack of scientific information. Having these two lineages coming back together geographically provides interesting information about the adaptability of these alpine mammal to changes in temperature and snow cover at high elevation, as predicted by climate change models.

For more information on this study, see: Jessica A. Castillo Vardaro et al., Identification of a contact zone and hybridization for two subspecies of the American pika (*Ochotona princeps*) within a single protected area, *PLOS ONE* (2018). [DOI: 10.1371/journal.pone.0199032](https://doi.org/10.1371/journal.pone.0199032)

Rocky Mountain National Park Resource Manager, Mary Kay Watry, Wins Prestigious NPS Award

Mary Kay Watry, Natural Resource Manager at Rocky Mountain National Park (ROMO), was recently awarded the National Park Service's highest honor as "National Natural Resource Manager of the Year". She won the Intermountain Region's Natural Resource Manager Award in the previous year, and just got word that she was selected from the slate of other regional winners to receive the National award, which includes receiving a bronze bison statuette.

Mary Kay's official responsibilities at the park include: Conservation Biologist, Wildlife, Fisheries and Water Rights. She had worked at ROMO since 1993.



During her tenure at ROMO **Mary Kay Watry** has been an integral part of the **Natural Resource Management** Team at Rocky Mountain National Park. In 2015-2016, she "hit her stride" and took on more of a leadership role in the science, research, management, administration and education aspects of wildlife management and fisheries, in addition to being an interface with facilities management and cultural resource management. She was called on to serve as the Acting Branch Chief for Natural and Cultural Resource Management for a year, and took responsibility for staff and program management as the park prepared to welcome a new superintendent (Darla Sidles) and saw the promotion of the Chief of Resource Stewardship (Ben Bobowski) to the superintendent's position at Wrangell-St. Elias NP & Preserve.

During this time Mary Kay also became the foremost proponent and park representative to stakeholder groups working on a myriad of important park issues, including black bear management, restoration of greenback cutthroat trout (GBCT) and boreal toad populations in park waters and beyond. And she has developed into one of the NPS' technical experts on wildlife disease, with a focus on Chronic Wasting Disease in elk at ROMO. She is the NPS leader on interagency Recovery Teams, and is the NPS field representative to the amphibian conservation group, *Partners in and Amphibian and Reptile Conservation (PARC)*, and in 2016 she got an Albright-Wirth grant to expand participation in the PARC program. She has been an invited speaker at national meetings and regional forums. Mary Kay was able to balance these national and regional responsibilities with in-park projects, student and volunteer mentoring and park staff training. She celebrated ROMO's Centennial by organizing a special session on bear management at the Biennial Science meeting, by presenting on the greenback cutthroat trout controversy at a recent George Wright Society meeting, and by publishing a journal article with her science collaborators on the innovative recovery program for the boreal toad.

She has been one of the "power users" of the Rocky Mountains CESU agreement, with most of her projects dealing with wildlife issues with partners at Colorado State University, University of Montana, and University of Colorado, Boulder. She has been able to leverage NPS funds to engage the USGS, Colorado Parks and Wildlife, and University partners on such projects as GBCT reintroduction, boreal toad recovery, development of non-invasive techniques to estimate bighorn sheep populations, and black bear management within the park and the surrounding communities. For example, in working on the recovery of boreal toad populations in the park, Mary Kay recruited two local experts, Dr. Erin Muths, USGS-Fort Collins Science Center and Dr. Larissa Bailey, Colorado State University, to join the NPS team to collect and contribute toad "stock" to the captive breeding effort by Colorado Parks and Wildlife and to reintroduce tadpoles (8600 of them in 2014) to restored habitats in ROMO.

Congratulations to Mary Kay Watry for outstanding service to the National Park Service and partner agencies.

RM-CESU Partners Discuss Whitebark Pine Ecology at the Annual Technical Meeting of the Whitebark Pine Ecosystem Foundation in Stanley, Idaho, September 20-22, 2018

The 2018 Whitebark Pine Ecosystem Foundation (WPEF) Annual Science and Management Workshop, titled *Central Idaho Whitebark pine: High, Dry and Burned - a focus on forest restoration following wildfires and mountain pine beetle in a changing climate*, was held on September 20-22, 2018 in Stanley, Idaho. This meeting was organized by

the WPEF, with considerable local support from the USFS, Sawtooth National Recreation Area. This meeting was co-sponsored by the Northern Rockies Fire Science Network

RM-CESU partners who assembled for the day of presentations, and two days of field trips in Central Idaho National Forests included: USFS, NPS, BLM, University of Montana, Montana State University, Boise State University, University of Colorado Denver, and partners from Parks Canada. The keynote address by Dr. Diana Tomback from University of Colorado Denver focused on the "National Whitebark Pine Restoration Plan", which is a joint effort of the Federal agencies, the WBEF and American Forests to plan for restoration of these high elevation forests throughout the western U.S. Technical talks by North American investigators and graduate students included information on the forest threats and restoration efforts throughout the



Field Trip to Galena Summit, Sawtooth National Forest.
Photo by Cyndi Smith

range of whitebark pine and other five-needle pines found in the forests of the US and Canada. For a copy of the agenda, go to <http://whitebarkfound.org/annual-meetings/this-years-conference/>. The 2019 technical meeting will be held in Pablo, Montana, hosted by the Confederated Salish and Kootenai Tribes.

The Friday field trip, guided by USFS scientists, included observations of the Galena Summit and Rainbow Creek Project Areas. This trip focused on approaches Sawtooth National Forest staff have available to them to manage whitebark pine. The second field trip was to Basin Butte Lookout, where USFS staff discussed Fire and Lookout History, blister rust ID, and identification of resistant whitebark pine trees.

The National Park Service just released the current version of the status of "vital signs" at Yellowstone National Park, including work with RM-CESU partners.

The State of Yellowstone Vital Signs and Select Park Resources, 2017 includes information on the status of ecological indicators, including species like beavers, bison and grizzly bears, ecosystem-altering forces like climate and fire, and status of whitebark pine populations. NPS Yellowstone Center for Resources staff compiled the report with input from park and outside researchers, including researchers from RM-CESU partners, such as Montana State University, Colorado State University, University of Montana, University of Wyoming, University of Utah, USFS and USGS.

Download the report at www.nps.gov/im/gryn/recent-publications.htm. Yellowstone NP previously published Vital Signs reports in 2008, 2011, and 2013.



Beavers are identified as "vital signs" in the 2017 report by the National Park Service. Photo by the NPS

This report was widely cited in the popular press and was the topic of discussion at the recent *14th Biennial Scientific Conference on the Greater Yellowstone Ecosystem* held at Big Sky, Montana on September 11-14, 2018. For more information on this conference, titled "Tracking the Human Footprint", go to <https://www.trackingthehumanfootprint2018.org>

About the same time there was an article published in the journal *Ecosphere*, August 2018, authored by Montana State University researchers on vital signs and the health of wildlands in the Greater Yellowstone, *Trends in vital signs for Greater Yellowstone: application of a Wildland*

Health Index. This article by Andrew Hansen and Linda Philips includes vital signs modelling and management recommendations. The work was funded by NASA, NSF EPSCoR and the USGS North Central Climate Science Center. The article can be downloaded at <https://esajournals.onlinelibrary.wiley.com/doi/10.1002/ecs2.2380>

CALENDAR:

November 29–December 1, 2018: 2018 Rocky Mountain Citizen Science Conference, Cody, WY. Citizen Science is an increasingly popular way to bring together scientist and science-minded people to support evidence-based decision-making on our public lands and in our communities. This conference will bring together project coordinators, participants, students, teachers, and those with general interest to discuss the challenges and rewards of citizen science in the rural west. [Citizen Science](#)

March 4–8, 2019: 84th North American Wildlife and Natural Resources Conference, Sheraton Denver Downtown, Denver, CO. The North American Conference sessions, workshops and more than 150 separate meetings and functions serve as the annual forum to set conservation policy in North America. [84th Conference Website](#)

May 6–9, 2019, 2019 National Outdoor Recreation Conference – *Storytelling in Outdoor Recreation: People Places, Landscapes, Cultures*, Rapid City, SD. Showcases innovative and creative approaches to outdoor recreation research, planning and management. [2019 National Outdoor Recreation Conference Website](#).

JOB OPPORTUNITIES

For details, visit [Job Opportunities](#)

Assistant Professor/Associate Professor in human–environment systems science. Boise State University, Boise, ID (closes 2/1/2019)

Assistant Professor of Geosciences, University of Idaho, Moscow, ID (closes 12/20/2018)

Assistant Professor of Human Dimensions of Natural Resources, specializing in Natural Resource Tourism, 9-month Tenure-Track, Colorado State University, Fort Collins, CO (closes 12/3/2018)

Director, Office of American Indian and Alaska Native Student Success, Montana State University, Bozeman, MT (review of applications will begin 11/26/2018)

Assistant Professor/Associate Professor of Landscape Architecture, Washington State University, Pullman, WA (review of applications will begin 11/6/2018)

Lecturer - Geosciences, Boise State University, Boise, ID (closes 11/16/2018)

CIRES/Earth Lab Post-Doc to Understand Disturbance dynamics: from Trees to Ecoregions, University of Colorado Boulder, Boulder, CO (review of applications will begin 11/16/2018)

Assistant Professor: Large-scale Ecologist, University of Colorado Boulder, Boulder, CO (review of applications will begin 11/15/2018)

Assistant Professor/Associate Professor in Ecological Genomics, Boise State University, Boise, ID (closes 11/12/2018)

Assistant Professor/Associate Professor in Population Ecology, Boise State University, Boise, ID (closes 11/12/2018)

Spatial Analyst, Wyoming Cooperative Fish and Wildlife Unit, University of Wyoming, Laramie, WY (closes 11/11/2018)

Clinical Assistant Professor in Recreation, University of Idaho, Moscow, ID (applications received by 11/9/2018 will receive first consideration)

Rocky Crate/Wild Sheep Foundation for Wild Sheep Disease Research Endowed Chair, Washington State University, Pullman, WA (review of applications will begin 11/7/2018)

Natural and Cultural Resource Specialist, Center for Environmental Management of Military Lands (CEMML), Kaena Point, HI (closes 11/5/2018)

Wildland Fire Specialist/Fire Planer, Center for Environmental Management of Military Lands (CEMML), Englin Airforce Base (closes 11/5/2018)

Small Acreage Outreach Educator - this position will develop and coordinate educational programs for Clark County residents to increase their awareness of the connection between their property management and non-point pollution of stormwater runoff, Washington State University, Pullman, WA (review of applications will begin 11/5/2018)

Postdoctoral Fellow, Center on Colorado River Studies - this position is part of a collaborative to explore a wide range of future Colorado River Basin reservoir and water-supply management strategies while considering ecosystem impacts, Utah State University, Logan, UT (review of applications will begin 11/3/2018)

Geospatial Consortium Coordinator - the Geospatial Consortium is a new centralized hub for geospatial information and resource collection, organization and dissemination at USU this position is part of a collaborative to explore a wide range of future Colorado River Basin reservoir and water-supply management strategies while considering ecosystem impacts, Utah State University, Logan, UT (review of applications will begin 11/3/2018)

Social Scientific Assistant at the Social and Economic Sciences Research Center, Washington State University, Pullman, WA (closes 10/28/2018)

Assistant Professor in Geographic Planning and Sustainability, Montana State University, Bozeman, MT (review of applications will begin 10/25/2018)

If you would like to post an announcement in the next RM-CESU Newsletter or on the website, please contact the RM-CESU Coordinator at rmcesu@cfc.umt.edu.