

University of Wyoming – National Park Service Research Station

39th Annual Report, 2016



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2016 UW-NPS Research Station Personnel

Michael Dillon, Director
Bonnie Robinson, Office Manager
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2016 Proposal Review Committee

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Director's Column

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During the period of this report the University of Wyoming-National Park Service (UW-NPS) Research Station supported and administered research in the biological, physical and social sciences and cultural resources performed in national parks, national forests and surrounding areas in the Greater Yellowstone Ecosystem. The UW-NPS Research Station solicited research proposals from university faculty, governmental research scientists and non-governmental research organizations throughout North America via a request for proposals. Research proposals addressed topics of interest to National Park Service scientists, resource managers, and administrators as well as the academic community. Studies conducted through the Station dealt with questions of direct management importance as well as those of a basic scientific nature.

The Research Station continues to administer a small grants program to fund research addressing applied and basic scientific questions, often related to park management. Research proposals are reviewed and evaluated by the Research Station's proposal review committee, which is composed of University faculty and National Park Service representatives and is chaired by the Director of the UW-NPS Research Station. Research contracts are usually awarded by

early April.

The UW-NPS Research Station operates a field station facility at the AMK Ranch on Jackson Lake in Grand Teton National Park. The Research Station provides researchers in the biological, physical and social sciences and cultural resources an enhanced opportunity to work in the diverse aquatic and terrestrial environments and the cultural resources of Grand Teton National Park, Yellowstone National Park and the surrounding Greater Yellowstone Ecosystem. Station facilities include housing for up to 60 researchers, wet and dry laboratories, a library with internet access, an herbarium, boats, and shop facilities. The research station is available to researchers working in the Greater Yellowstone Ecosystem regardless of funding source, although priority is given to individuals whose projects are funded by the Research Station.

A summary of the 2016 users and activities at the Station is included below. Additional information about the UW-NPS Research Station, including the current year's Request for Proposals, housing and facilities request forms, summaries of past and current research, upcoming seminars and other events, and location information, can be found at the station's web site: <http://uwnps.org/>.

Availability of Research Project Reports

The following project reports have been prepared primarily for administrative use. The information reported is preliminary and may be subject to change as investigations continue. Consequently, information presented may not be used without written permission from the author(s). Reports from past research at the Research Station (1954–present) are available online and full-text searchable from here: http://repository.uwyo.edu/uwnpsrc_reports

2016 UW-NPS Research Station Users and Activities Summary (3,418 total user-days)

Research projects with residence at the station

(*–funded by the UW-NPS/GTNP seed grants program)

27 research teams of from 2 to 15 researchers studying diverse topics in ecology, geology, water quality, wildlife biology, social sciences and cultural/historic resources from UW, WY Community Colleges, and 15 other colleges and universities from all over the US and several federal or state agencies—1849 user-days

- University of Wyoming – Avian ecophysiology – 9 investigators – 15 days
- University of Wyoming – Beaver ecology – 3 investigators – 19 days
- University of Wyoming – Bee biodiversity – 8 investigators – 9 days
- University of Wyoming – Bone weathering analysis – 2 investigators – 2 days
- University of Wyoming – Wildlife migration – 2 investigators – 9 days
- * University of Wyoming – Aquatic invasive species – 2 investigators – 31 days
- * University of Wyoming – Alpine aquatic habitats – 4 investigators – 3 days
- * University of Wyoming – Nitrogen deposition in the GYA – 3 investigators – 37 days
- University of Wyoming-Casper/LCCC – Small mammals and fire ecology – 5 investigators – 3 days
- * Boise State/Cal Poly/U Pittsburg – Sound effects on wildlife – 5 investigators – 36 days
- Clemson University – Pika ecology – 2 investigators – 1 day
- Collin College, Texas – Archaeology – 2 investigators – 4 days
- Frostburg State University/University of Maryland – River otters – 4 investigators – 45 days
- * Idaho State University – Cultural history of Snake River rafting – 5 investigators – 6 days
- * Idaho State University/USGS – Teton fault geology – 7 investigators – 7 days
- Iowa State University – Butterflies and climate change – 6 investigators – 31 days
- Kansas Biological Survey – GIS Mapping – 4 investigators – 1 day
- * Muhlenberg College – Bumblebee and plant phenology – 3 investigators – 22 days
- National Park Service – Native seed harvest – 3 investigators – 2 days
- National Park Service – Water quality monitoring – 3 investigators – 3 days
- S. F. Austin University, Texas – Human dimensions of wilderness use – 15 investigators – 15 days
- St. Louis Schools Biology Class – Cricket ecology – 6 investigators – 13 days
- University of Kentucky – Teton Range geology – 4 investigators – 10 days
- University of Pennsylvania – Historic building conservation – 3 investigators – 19 days
- * University of Pittsburgh – Teton fault mapping – 5 investigators – 4 days
- Utah State University – Butterfly biodiversity and climate change – 7 investigators – 27 days
- * Utah State University – Managing wildlife traffic jams – 2 investigators – 17 days

Classes and field research courses

10 classes on field ecology, field geology, astronomy, watersheds, photography and art from UW, Northwest CC, Nebraska, Oklahoma, Pennsylvania, Missouri, West Virginia, Georgia, and Utah — 511 user days

- University of Wyoming Art Department – Outdoor Studio Art Class – 11 students/1instructor – 4 days
- Agnes State College, Georgia – Jackson and AMK Astronomy Instruction – 1 instructor – 60 days
- Chadron State University – Geoscience Field Class – 6 students/2 instructors – 5 days
- Northwest Community College – Powell – Wildlife Photography – 6 students/1 instructor – 2 days
- Oklahoma City University – Vertebrate Ecology Field Class – 11 students/1 instructor – 6 days

Southeast Missouri State University – Mammalogy Field Class – 8 students/1 instructor – 7 days
University of Nebraska – Teacher Education in Geoscience – 18 students/2 instructors – 2 days
University of Pittsburgh – Field Ecology/Geology – 17 students/3 instructors – 3 days
Utah State University – Watershed Science – 21 students/2instructors – 2 days
West Virginia University – Nature Photography Art Class – 15 students/2 instructors – 4 days

Workshops and meetings

17 workshops and meetings about invasive species, bear immobilization and management, air quality, climate modeling, ,GRTE Park Rangers, GYE Science, landscape painting, wildlife migration, research station management, water quality and biomedical topics from UW and WY Community Colleges, Jackson Hole, and GYA federal and state agencies – 849 user days.

University of Wyoming INBRE Meeting/Workshop, 70 UW & WY CC faculty and students, 3 days
University of Wyoming International Program Meetings, 2 participants, 4 days
University of Wyoming Neuroscience Planning, 4 participants, 2 days
University of Wyoming & 6 US and Chinese Univ., Air Quality/Climate Models, 30 participants, 4 days
University of Wyoming & Utah Valley Univ., Station Management workshop, 3 participants, 4 days
University of Wyoming Water Quality Research Meetings, 2 participants, 3 days
University of Wyoming Wildlife Migration Atlas Workshop, 8 participants, 1 day
13th Biennial GYA Science Meetings, 50 graduate student participants, 3 days
Grand Teton National Park Ranger Staff Meeting, 15 participants, 1 day
Greater Yellowstone Ecosystem Multi-Agency Bear Immobilization Workshop, 35 participants, 3 days
Jackson Wild Meetings, 4 UW participants, 3 days
Multi-State/Federal Agency Aquatic Invasive Species Workshop, 25 participants, 3 days
National Park Service Science and Resource Management Meeting, 35 participants, 1 day
Teton Plein Air Painters Landscape Painting Session, 20 participants, 1 day
University of British Columbia – UW Fish Physiology Meeting, 3 participants, 5 days
Wyoming Game and Fish Department Brucellosis Workshop, 10 participants, 1 day
Yellowstone Ranger Book Release Event, 40 participants, 1 day

Interns resident at the station (*–funded by UW-NPS/GTNP)

2 Grand Teton National Park interns co-funded by UW and Grand Teton NP and selected competitively for work with Grand Teton National Park staff; 3 guest interns/faculty in Nature Writing – 209 user-days

Nature Writing – 3 MA students and 1 faculty member from the University of Wyoming MFA Writing Program – 16 days

- * Bat Ecology – undergraduate student from Middlebury College – 94 days
- * Mapping Historic Irrigation Ditches – graduate student from University of Montana – 67 days

Harlow Summer Seminars – UW-NPS Research Station at the AMK Ranch

Weekly Thursday evening seminars from mid-June to mid-August with a \$5 donation for a BBQ dinner followed by a seminar –8 seminar events in 2016 drew an average audience of 104 members of the general public from the Jackson Hole / Greater Yellowstone Area

Conservation's best friend: How a bunch of shelter dogs are saving the world

Pete Coppolillo, Working Dogs for Conservation, Bozeman, Montana (June 23)

Oh Deer! The problem of wildlife-vehicle collisions and roads as barriers to wildlife in Wyoming

Corinna Riginos, University of Wyoming and NRCC, Jackson (June 30)

Earthquakes, glaciers, and the evolution of landscapes along the Teton fault

Glenn Thackray, Idaho State University, Pocatello (July 7)

Assessing aquatic resources in Kelly warm springs, GTNP: Have native fish been displaced by non-native aquarium fish?

Aida Farag, USGS, Jackson, and Sue Consolo-Murphy, GTNP, Moose (July 14)

On the Move: Seasonal Trekking of Grand Teton Mule Deer

Sarah Dewey, Wildlife Biologist, GTNP, Moose (July 21)

Gravity Waves 100 Years after Einstein

Danny Dale, University of Wyoming, Laramie (July 28)

The science behind avalanche initiation

Andy Hansen, University of Wyoming, Laramie (August 4)

Grand Teton National Park: Past and present challenges

Robert Righter, Southern Methodist University, Dallas and Jackson (August 18)

Outreach

2016 Special Events Celebrating the Centennial of the National Park Service

The Wyoming Festival - New Music in the Mountains: NPS Centennial Celebration Concert – A group of 6 winning composers and 5 world-class musicians from the Grand Teton Music Festival Orchestra collaborated from August 2 to 11 on creation and performance of new classical music inspired by nature and the parks. These new Wyoming Festival works were performed in concert on August 10th in the Berol Lodge for an enthusiastic audience.

Spiders! Interconnectedness, Innovation & Stewardship – A group of 10 ecologists and artists worked together at the UW-NPS Research Station from August 17-28 to create a public exhibit to share the beauty and wonder of spiders, all to celebrate the centennial of the National Park Service. The collaborators hosted an opening reception for exhibit visitors on August 21st in the Berol Lodge and the exhibit remained open to the public through August 27th.