# **ANNUAL REPORT**

2020





# University of Idaho Rangeland Center 2020 Annual Report

The University of Idaho (UI) Rangeland Center (RC) Annual Report summarizes activities that move the Center toward responding to challenges outlined in the <u>Center's Strategic Plan</u> and is organized around five focus areas:

- Fire/fuels/invasive plants and restoration
- Rangeland uses (including grazing, recreation, energy, etc.)
- Rangeland wildlife
- Watershed function
- Climate variability

Projects and activities in these focus areas speak to the Center's three operational goals:

- Engage partners and stakeholders to jointly provide leadership for discovery of new knowledge and create science-based solutions for rangelands.
- Provide objective and relevant rangeland information for individuals, organizations, land managers, communities, policy makers and others interested in rangelands.
- Offer learning opportunities for rangeland stewardship.

The Center's goals provide the framework for ongoing staff activities, while the focus areas guide the projects we pursue.

Individual projects come out of conversations with members of the Rangeland Center, including our Partner Advisory Council (PAC), faculty, and UI leadership. The project list is turned into an annual operating plan that describes how Center resources are used to support Center members to empower research, outreach, and education to produce solutions for contemporary rangeland issues.











#### **2020 Center Activities**

The Rangeland Center focuses research and outreach around the five topic areas outlined in our strategic plan (2017-2021), emerging topics identified in our yearly spring planning retreat, and emphasis areas suggested by our Partners Advisory Council. This annual report highlights only those activities supported by Rangeland Center financial or staff resources in 2020 and does not include other range-related activities occurring at the UI.

Fire/Fuels/Invasive Plants and Restoration – There is an important need for research and



outreach on topics related to wildland fire/fuels, invasive plant species, and restoration efforts. Our work recognizes the importance of increasing the use and frequency of fire to manage woody plants, such as juniper, in some settings while reducing the frequency and extent of wildfire in other settings, such as cheatgrass-invaded sagebrush steppe. We also study approaches for restoration of systems altered by fire and invasive plants. Specific challenges identified in our strategic plan include rigid post-fire policies that limit restoration opportunities and

the need for ecologically and economically effective approaches to minimize rangeland fire risk/severity and address restoration.

In 2020, the Center continued responding to these challenges with an interdisciplinary team to investigate dormant season grazing effects on annual grasses. The Center also participated in developing a decision-support tool to assess the economic and ecological effectiveness of different types of fuel breaks. These teams secured funding for one PhD student focused on annual grass removal and plant community response, another PhD student studying fire and fuel breaks and an MS student to study the economics of fire, fuels and fuel breaks.

Project Title and Status of 2020 Projects	Participants *Indicates Rangeland Center Member
Dormant season grazing to reduce annual and promote perennial grasses.	A. Hulet*, J. Sprinkle*, K. Lee*, K.
Funding (\$435k) from USFS. In 2020 a PhD student was hired, and baseline monitoring completed. Grazing began this fall. The project will last 4 years and will also support a	Launchbaugh*, E. Winford*
MS student. RC Role-Staff invested significant time to help secure grant and will participate	
in research.	
Assessment of fuel break performance – fire risk, ecology, and economy.	E. Strand*, K. Lee*, T. Prather*, E.
Funding (\$420k) from the Joint Fire Science Program. A PhD student will be hired in	Winford*
fall 2020. Monitoring will begin in 2021. RC Role-Staff worked significantly to coordinate	
proposal and will participate in research and stakeholder engagement.	
Value of grazing to establish fuel breaks in sagebrush-steppe ecosystems.	E. Strand*, K. Launchbaugh*, S.
Project funded by a USDA-NRCS Conservation Initiative Grant and the Little	Jensen*
Endowment was brought to completion with submission of a final manuscript. RC Role-	
Page charges to make publication open-access.	

**Rangeland Uses** – Rangelands provide many uses and values, including livestock grazing, recreation, and sustainable energy production. Challenges identified in our strategic plan included policies that limit management flexibility to account for annual variations in forage, water, drought,



JB Hall

pests, disturbance, and market conditions; a need for greater understanding of how land uses affect rural community stability; and increased public understanding of the complexity of livestock grazing encompassing both unfavorable and beneficial effects.

Rangeland Center faculty conduct significant work on the ecological impacts of livestock grazing to inform management decisions. Each year, RC members present science-based options for livestock management to livestock producers and land managers in several outreach events. Efforts are being made at Rinker Rock Creek Ranch to better understand the multiple values on the ranch and find ways to concurrently consider the ecologic, economic and social implications of management and conservation actions.

In recent years, our Partners Advisory Council emphasized the need to examine outcome-based land management and the influence of range-livestock production on rural economies and communities. The Center worked to increase understanding of the contribution of rangelands to Idaho's economy by partnering on a project with the UI Policy Analysis Group.

Project Title and Status of 2020 Projects	Participants
National Grazing land Information System. Project initiated in 2019 with funding from NRCS Conservation Initiative Grant. UI led a national team to develop an electronic grazingland information system. RC Role-Staff worked significantly in proposal development and are active participants in the ongoing project.	J. Karl*, J. Kenyon*, K. Launchbaugh*, A. Hulet*, E. Winford*, and many others
Idaho Range Livestock Symposium 2020 - Integrating the Needs of Animals, Rangelands, and People. UI Extension day-long symposium presented in four locations across Idaho. More than 300 people attended. RC Role Outreach support and some event funding.	S. Jensen*, B. Glaze*, J. Hall*, J. Sprinkle*, A. Hulet*, L. Lodis*, and many others
Contribution of the range-livestock industry to the Idaho economy. The UI Policy Analysis Group is leading this economic analysis. The project initiated in 2020 and is expected to be finished in 2021. RC Role- Staff provided stakeholder coordination and data procurement.	G. Alward, P. Watson, R.G. Taylor, D. Becker, G. Latta, E. Winford*

Rangeland Wildlife – Rangeland wildlife conservation is an unquestioned and consistently affirmed value of Idaho's rangeland. Specific challenges identified in our strategic plan include: inadequate understanding of how land management practices and uses in sage-steppe ecosystems affect sage-grouse and other sagebrush-obligate species; limited understanding and information about wildlife habitat values that are provided by well-managed rangelands; a need to identify strategies to reduce conflict and competition between livestock and wildlife.



Significant research by Rangeland Center faculty has focused on sage-grouse and sagebrush habitat. Other important wildlife research is being conducted in juniper dominated ecosystems. In 2020, the Center was engaged in long-term research to understand these complex issues; one 10-year project has

so far resulted in seven graduate students receiving training and six publications. Work at Rinker Rock Creek Ranch continues to show that well-managed livestock grazing and sage-grouse can co-exist.

Project Title and Status of 2020 Projects	Participants
Effect of cattle grazing on sage-grouse habitat and demographic traits. Funding in 2020 came from PLC, BLM, IDFG and others (year 7 of 10). Preliminary results indicate no	C. Conway*, K. Launchbaugh*, J. Karl*, and many others
clear evidence for a beneficial or detrimental effect of spring grazing on sage-grouse nest success. RC Role-Travel funds, Little Endowment research funding and staff time for project.	
Sage-grouse habitat use on Rinker Rock Creek Ranch (RRCR). Ground-based surveys continued in 2020. Efforts to collar grouse will continue in 2021 RC Role-Staff managed the Little Endowment which provided funding.	T. Johnson*, A. Hulet*
Relationship between cattle grazing and diet of greater sage-grouse. From study sites across Idaho, > 430 plant specimens and >480 sage-grouse fecal pellets were collected in 2020. DNA analysis will continue into 2021. RC Role-Staff managed the Little Endowment which provided funding.	T. Styhl, D. Tank, L. Waits, C. Conway*
Short-duration vs season-long grazing and sage-grouse brood rearing habitat in	M. Ellison*, T. Johnson*
wet meadows at Rock Creek. This three-year project finished in 2020 and indicated differences in meadow response from short-duration grazing. Funding came from NRCS	
CIG and Little Endowment. RC Role - Staff assisted in developing funding from the CIG award, managed the Little Endowment which provided additional funds, and provided monitoring support.	

Watershed Function – Sufficient, high-quality water is a rangeland resource important to an array of land users. Research and outreach focused on how aquifer, annual precipitation, and snowpack levels affect rangeland surface water availability are needed. A challenge raised in our strategic plan was the lack of awareness and understanding of the link between rangeland watersheds and ground and surface water abundance and availability for other purposes, including farming, commercial and domestic use. The need for a greater understanding of how management and conservation activities effect riparian health and ground water resources was also recognized.



Mink Creek on Life on the Range https://youtu.be/MfcEUQzf6p8

The Center's investment in developing teams to investigate these issues is beginning to pay off, with several projects starting in 2020. One project, focused on the source of E.coli in a mixed-use watershed, finished this year and has resulted in several publications and outreach events.

Project Title and Status of 2020 Projects	Participants
Assessing the effectiveness of low-tech process-based restoration techniques.	C. Goebel, E. Winford, M.
Funding from NRCS CIG. Monitoring to evaluate techniques like beaver-dam analogs (BDAs) began this year. The project will occur at Rock Creek and other sites in Idaho. The project supports two graduate students. RC Role – Staff helped secure funding and participate in research.	Ellison, J. Karl, C. Jones
Evaluate the social, economic, and ecological impacts of riparian management	M. Ellison*, T. Johnson*, K.
<b>practices.</b> Funding from the USDA–AFRI. In 2020, a PhD student was hired, monitoring will begin in 2021 and last 4 years. RC Role-Staff helped coordinate and develop grant proposal.	Lee*, J.D. Wulfhurst*, J. Aycrigg, J. Ritten, E. Winford*

Identify sources and pathways of <i>E. coli</i> contamination. Funding from the USFS. Project finished in 2020 with multiple presentations and publications. **RC Role-Staff helped to secure funding and participated in research.	N. Joseph, J. Lucas, E. Winford*, J. Sprinkle*, A. Kolok, M. Strickland, R. Mickelsen*, R. Findlay, N. Vishwanath
Monitored riparian change at Rinker Rock Creek Ranch. Drone flights and vegetation surveys were conducted to identify study sites. Faculty and partners monitored sites and sought project funding. RC Role-Staff helped coordinate project and interns assisted in field work.	J. Karl*, E. Winford*, C. Jones, C. Goebel*, A. Morris
Wet meadow restoration along Rock Creek. Funding secured from Idaho Office of Species Conservation for herbicides, seeds, and water developments to improve meadow vegetation for livestock and wildlife at RRCR. All areas have been seeded. Seeding of main meadow seeding with forbs did not establish well in 2020 because of dry spring. Native forbs were seeded adjacent to meadow edges, to potentially provide additional plant resources for sage grouse. RC Role-Staff helped coordinate this project.	T. Prather*, E. Winford*, W. Prescott, C. Packer



Climate Change – Annual climate variation and long-term climate trends are clearly affecting rangeland plant and animal communities. Research and outreach efforts are needed to understand the ecologic and economic implications of climate change on rangelands. Specific challenges identified in our strategic plan include: the need to understand how changes in seasonal temperature and precipitation patterns will affect plant and animal communities on rangelands; and insufficient awareness among land managers and users regarding consequences of climate change and opportunities for adaptive management on rangelands.

The Center has worked to summarize and share information about the impacts of climate change to Idaho's rangelands. There is continued interest in opportunities to use well-managed rangelands to improve carbon sequestration.

Project Title and Status of 2020 Projects	Participants
Climate change FAQ: Climate Change and Pacific Northwest Rangelands.	V. Jansen *, E. Winford*, L.
Rangeland staff helped research, draft and edit the FAQ document. RC Role Staff coordinated	Lodis
committee to frame questions and helped write document.	
Idaho climate-economy impacts assessment. Provided rangeland perspectives to an	K. Himes, K. Lee*, E.
ongoing project to identify climate impacts led by McClure Center with several partners. RC	Winford*, G. Latta, C.
Role Staff actively participated in this ongoing project and coordinate range-related sections.	Wardropper*, et al.
Drought resilience among ranchers and land managers. Survey of ranchers on	J. Brandt, C. Wardropper*,
resilience in response to drought and climate change. RC Role Assisted with stakeholder	K. Lee*, K. Wollstein
engagement	
Fact sheet on livestock and climate change. An effort to answer stakeholder	V. Jansen, E. Winford*, M.
questions for Idaho-specific information and to disentangle competing climate narratives.	de Haro Marti, L. Chen
RC Role Staff coordinated the group that will write the document and will lead stakeholder	
engagement.	

# **Crosscutting Activities**

Many activities and projects of Rangeland Center faculty, staff, and PAC cut across focus areas, topics, and needs for outreach and research. These crosscutting activities are important to accomplish our mission of creating knowledge and fostering understanding for the stewardship and management of rangelands. Crosscutting activities the Rangeland Center engaged in during 2020 are listed below.

*Rangeland Fall Forum* – The 7<sup>th</sup> Annual Fall Forum was held in October with over 140 land managers, scientists, and ranchers in attendance. Due to Covid-19 restrictions, the event was held virtually over the course of two days. Three sessions highlighted how we could Review, Reimagine, and Reposition ourselves to meet emerging rangeland challenges. The Rangeland Center partnered with the UI McClure Center for Public Policy Research, and the Idaho Chapter of the Society for Range Management. Sessions were recorded, edited, and made available on the Center Website.

Outcomes Based Land Management (OBLM) – The Center has worked to identify obstacles to and opportunities for OBLM on Idaho's rangelands. In 2020, Center Director and staff worked as part of the Idaho Rangeland Conservation Partnership on an OBLM initiative and a session focused on OBLM at their annual meeting. Also, in 2020 several Center faculty, PAC members, and others worked on the Rinker Rock Creek Ranch BLM grazing permit renewal. The team, under the direction of Dr. John Hall, is working to actualize a NEPA option in permit renewal based on OBLM principles.

**Rinker Rock Creek Ranch (RRCR)** – Rangeland Center faculty are central to the research and outreach mission at RRCR. In 2020, Rangeland Center staff and financial resources provided project support and coordination in several ways:

- Worked to increase the visibility of the ranch and associated faculty with a series of videos about the ranch. UI Communications and Marketing recorded videos expected to be completed this fall. The Center provided funding and coordination support.
- Showcased recent research and the collaborative partnership at the summer meeting of the Idaho Chapter of the Society for Range Management. Center staff coordinated the webinar, which had nearly 50 participants. The session was recorded and is available on the <u>Center website</u>.
- Dr. Tracey Johnson was named Research Director of RRCR and Rangeland Center funding supported her travel and miscellaneous expenses during 2020.
- Participated in working groups. Drs. Tim Prather and Tracey Johnson chair the Research and Monitoring working group and Eric Winford chairs the Fish and Wildlife Habitat working group.
- Director Launchbaugh secured a grant for one summer intern and Eric Winford supervised intern and assisted in setting up and maintaining facilities.
- Summer residence options at the ranch were added. Tim Prather, Eric Winford, Cameron Packer and range interns helped construct new platforms at Cow Camp and purchase additional tents.

**Developing Rangeland Technologies** – Advancing technologies for rangeland management is also a Rangeland Center focus with staff time and resources used to facilitate several projects. Karen Launchbaugh and Jason Karl worked with an interdisciplinary team of faculty and students to design and test elements of a virtual fencing system. Jason Karl led several research projects to test remote

sensing tools to assess forage availability and utilization. Rangeland Center Interns were involved in assembling GPS collars and other technologies under Dr. Karl's direction.

**Providing Rangeland Information** – The Rangeland Center continued to promote the Field Guide to Idaho Grasses and Grass-like Plants and the Backpack Guide to Idaho Range through Extension Publishing. Online promotion, social media posts, and flyers taken to events resulted in 219 copies of the grass book and 55 copies of the backpack guide sold during fiscal year 2020. The Center also supports the development of the Idaho Grasses mobile app, which is currently available for all mobile devices. Other resources published by Rangeland Center faculty such as our FAQ documents continued to be available through the <u>Rangeland Center website</u>. A new field guide called "Pasture and Range Plants that Endanger Livestock in Southwestern Idaho" was written by a team that included Tim Prather and Scott Jensen and published in 2020 through <u>UI Extension Publications</u>.

The Rangeland Partnership – Dr. April Hulet and Mr. Jeremy Kenyon are Rangeland Center members active in The Rangeland Partnership and Dr. Barbara Petty serves as Administrative Advisor for this national group. This Partnership is a unique organization of rangeland extension specialists and librarians who provide public and private land managers, researchers, Extension professionals, educators, and the public with information and tools needed for rangeland management. In 2020, Associate Director Winford gave a presentation on ways to improve the impact of information on websites and social media. Additionally, the Center provided letters of support for grants associated with the Partnership and was involved in promotion of the initiative for an International Year of Rangelands and Pastoralists.

Supporting the Next Generation of Rangeland Managers – Students seeking degrees in agriculture and natural resources are a major workforce for rangeland projects conducted by our faculty. In 2020, the Rangeland Center supported and supervised four undergraduate interns on campus during the academic year and one summer intern at Rinker Rock Creek Ranch. These interns helped eight different rangeland faculty with twelve different projects performing tasks such as monitoring, data correction and entry, analysis. Funding for these interns came from endowments and competitive grants.

Increasing Rangeland Awareness Among Idaho High School Students - Drs. April Hulet and Karen Launchbaugh with PAC member Gretchen Hyde conducted a summer workshop for 17 teachers to help them include rangeland information in their classrooms and participate in FFA Rangeland Career Development Events (CDE). April and Gretchen hosted a live Rangeland CDE for Idaho students in October. Karen Launchbaugh worked with Dr. Kasee Smith on a project funded by the Little Endowment which developed 11 training and education videos to prepare for the Rangeland CDE. A team that included April Hulet, Karen Launchbaugh, Jason Karl, Gretchen Hyde, Sue Poland, the RC interns and 8 UI students developed a Virtual Rangeland CDE for the Western National event in November. Over 60 students from Idaho, Nevada, Utah, and Wyoming participated in this FFA event.

**Society for Range Management** – The annual meeting of the society was held in Denver in early 2020. The Center uses this opportunity to connect with colleagues, stakeholders, and future rangeland managers. Director Launchbaugh gave a plenary session speech at the meeting, and Associate Director Winford co-facilitated a discussion about the role of rangelands in climate change. Also in 2020,

Director Launchbaugh was elected to be the Vice President (2<sup>nd</sup>) for the Society. In that role, she is coordinating the 2021 SRM meeting, to be held virtually.

#### **Center Communications**

In 2020, the Rangeland Center worked to provide information and updates to internal and external stakeholders. Sadly, the Center's communication specialist, Lindsay Lodis, left early in the year and that position has not been filled.

**Newsletters** – A newsletter series was developed to communicate with stakeholders, partners, and friends outside of the university. The "external" newsletter was issued twice in 2020 to an audience of ~730. The



audience for this newsletter grew by ~40 through the year via events sign-up sheets, online promotion, and a subscription form added to the Rangeland Center website.

We also delivered a semi-regular internal newsletter to Rangeland Center members and university leadership. This internal newsletter – the most consistent correspondence we have with our members - focused on upcoming Center activities, opportunities for funding, requests for engagement (RSVP links, post-event surveys, etc.) and highlighted Center member accomplishments.

*Websites/Web pages* – In 2020, we drove visitors to our website via social media posts, by linking to partners' websites, and by hosting online events that made use of our website as a landing page.

**Social Media** – The Rangeland Center relied on Facebook as its primary social media outlet and grew our audience from 832 to 910 followers in 2020. We worked closely with colleagues in the College of Agricultural and Life Sciences (CALS) and the McClure Center to cross-post relevant stories.

**Project Updates/Stories** –Research video updates of Rangeland Center faculty were created for the 2020 Rangeland Livestock Symposium. Video subjects included:

- Courtney Conway on effects of spring grazing on sage-grouse nesting.
- John Hall comparing livestock production on rangeland and irrigated forage systems.
- Katherine Lee discussing several rangeland economics projects across Idaho and the region.
- Jason Karl introducing a project called RangeSAT which uses satellite remotely sensed data to aid in grazing management decisions.

# **Rangeland Center Budget**

The primary budget for the Rangeland Center is provided through legislative funding managed by the College of Natural Resources (CNR), which in calendar year 2020 amounted to \$136,399. This can be broken down to:

Salaries & Fringe: \$100,714Operating and Travel: \$35,686

Endowments managed by the Center included the David Little Livestock Range Management Endowment, which provided \$27,500 to support four research and outreach projects.

Endowments established by the Soulen, Little, and Brackett families provided funding for Rangeland Center interns, which included 4 students each semester working about 20 hours per week to assist faculty and conduct projects that helped maintain the Center.

Gift funds that support the Rangeland Center included the Launchbaugh Family Fund and the Rangeland Center gifts account. These accounts received over \$12,600 in 2020 to support student research and other Center activities and needs.

Center staff helped develop projects that received \$483,000 in external funding in 2020. Center members participated in projects that total \$2.8 million in funding.

## **Center Staff and Faculty**

The Rangeland Center included 34 faculty members and 3 staff in 2020 from the Colleges of Natural Resources (15) and Agricultural and Life Sciences with many faculty holding UI Extension appointments. Faculty and staff worked in locations across Idaho with 19 housed on campus and 16 in other locals. A full list of faculty and staff is listed below can be viewed on our website.

**Faculty** – Rangeland Center faculty included 19 faculty from CALS in the Departments of Animal & Veterinary Science, Agricultural Economics & Rural Sociology, Entomology, Plant Pathology & Nematology, and Plant Sciences. Fifteen faculty were from CNR in the Departments of Forest, Rangeland & Fire Sciences, Fish & Wildlife Sciences, and Natural Resources & Society. One faculty member in the Center was from the UI Library.

**Extension Faculty** – Eighteen Rangeland Center faculty hold appointments with UI Extension. These Extension faculty hold specialist positions or are county faculty from Adams, Bannock, Custer, Jefferson/Clark, Idaho, Lemhi, Lincoln, Oneida and Owyhee counties.

**Staff** – During 2020, the Rangeland Center lost Lindsay Lodis as our Communication Specialist. This position has not been refilled. Center functions continue with Director Karen Launchbaugh, Senior Associate Director Tim Prather, and Associate Director Eric Winford.



# **Reporting Metrics**

Metric	Impact
The number of interdisciplinary research teams the RC helped develop.	In 2020, the Center assembled a team that submitted, and was awarded, a proposal for \$74k to help understand the impacts of techniques like beaver-dam analogues. One \$409k proposal that was submitted in 2019 to conduct research on the effectiveness of fuel treatments was awarded this year. Center staff are working on developing two additional teams for work on riparian-related research and work on the interactions of wolves and livestock.
The number of interdisciplinary projects that have funding and are ongoing.	The Center is participating in 9 ongoing research projects, totaling over \$2.8 million in grant funding. Six projects have multi-year funding and will continue into 2021. Three projects were completed in 2020.
The number of outreach and education project teams the Center leads or assists, the number of events held, and audience participation.	The Center worked with 4 teams that jointly held 4 events in 2020. The total audience was more than 500 people.
The number of articles and publications produced with RC support.	The Center produced 1 article, 4 internal-focused newsletters, and 2 external focused newsletters. The total estimated audience reached by these products is 800+. Center affiliated faculty published 16 peer-reviewed articles in 2020.
The number of students involved in Center activities, the mentors, and the funding.	In FY 2020, the Center enlisted 5 undergraduate students (4 during the school year and 1 for summer at Rock Creek).

# **Rangeland Center Members 2020**

### College of Agricultural and Life Sciences

UI Extension - County:

- Sarah Baker Livestock, Range, and 4-H, Custer County (Challis)
- Jim Church Livestock and Range, Idaho County (Grangeville)
- Nikki Dalton 4-H Youth, Bannock County (Pocatello)
- Scott Jensen Livestock, Range and 4-H, Owyhee County (Marsing)
- Tyanne Roland Livestock and Range, Adams County (Council)
- Joseph Sagers Agronomy, Livestock and Range, Jefferson/Clark County (Rigby)
- Shannon Williams Livestock, Range and 4-H, Lemhi County (Salmon)
- Carmen Willmore Livestock and Range, Lincoln County (Shoshone)

Agricultural Economics and Rural Sociology Department:

- Katherine Lee Natural Resource and Environmental Economics (On Campus)
- Paul Lewin Agricultural Economics and Rural Community Development (Extension Specialist On Campus)
- Hernan Tejeda Applied and Production Economics (Twin Falls)

Animal, Veterinary and Food Sciences Department:

- Melinda Ellison Range Livestock Production (Extension Specialist Salmon)
- Benton Glaze Livestock Production and Genetics (Extension Specialist Twin Falls)
- John Hall Ruminant Nutrition and Reproduction (Extension Specialist Salmon)
- James Sprinkle Rangeland Monitoring and Beef Production (Extension Specialist Salmon)

Entomology, Plant Pathology, and Nematology Department

• Steve Cook – Entomology, Insect Ecology and Management (On Campus)

Plant Sciences Department

- Tim Prather Invasive Plant Ecology/Mgmt. and Rangeland Restoration (Extension Specialist On Campus)
- Glenn Shewmaker Forages Management (Extension Specialist Kimberly)

## College of Natural Resources

Forest, Rangeland, and Fire Sciences Department

- Jason Karl Landscape-scale Monitoring, Management and Data Science (On Campus)
- April Hulet Rangeland monitoring/mgmt. and restoration (Extension Specialist Boise)
- Karen Launchbaugh Range Animal Behavior and Nutrition (On Campus)
- Tim Link Wildland Hydrology and Watershed Management (On Campus)
- Eva Strand Landscape, Fire and Rangeland Ecology (On Campus)

Fish and Wildlife Resources Department

- Courtney Conway Wildlife management, Conservation biology, and Behavioral ecology (On Campus)
- Tracey Johnson Livestock-Wildlife Interactions, Wildlife Habitat Ecology (On Campus)
- Janet Rachlow Wildlife and Habitat Ecology (On Campus)

Natural Resources and Society Department:

- Travis Paveglio Naturel Resource Collaboration and Communication (On Campus)
- Lee Vierling Biogeochemistry, Landscape Ecology and Remote Sensing (On Campus)
- Chloe Wardropper Natural Resource Decision Making (On Campus)
- J.D. Wulfhorst Rural Sociology, Social Assessments and Community Resilience (On Campus)

#### Library

Jeremy Kenyon – Natural Resource Information (On Campus)

#### Emeriti Members

Tom Page

Jason Pyron

- Steve Bunting Rangeland and Fire Ecology (On Campus)
- Ed Krumpe Recreation and Wilderness (On Campus)
- Paul McDaniel Soil Science and Land Resources (On Campus)
- Penny Morgan Wildland Fire Ecology & Management (On Campus)
- Neil Rimbey Range Economics and Natural Resource Policy (Extension Specialist Caldwell)

# **Partners Advisory Council 2020**

•	Tim Murphy	PAC Chair, Retired Idaho BLM State Director, Idaho Fish and Game Commission
•	Wendy Pratt	PAC Vice-Chair, Rancher near Blackfoot, Idaho Soil & Water Conservation Commission
•	Merrill Beyeler	Rancher, Lemhi Land Trust Board of Directors
•	Mark Davidson	Executive Directors, Blaine County Recreation Department
•	Brett Dumas	Idaho Power Company, Director of Environmental Affairs
•	Tom Dyer	Retired Idaho BLM State Director
•	Jeff Foss	Retired Idaho BLM Deputy State Director for Resources
•	Gretchen Hyde	Executive Director of the Idaho Rangeland Resources Commission
•	Laurie Lickley	Rancher, Idaho legislator, Past-president Idaho Cattle Assoc.
•	Matt Lucia	Executive Director of the Sagebrush Steppe Land Trust
•	Charlie Lyons	Rancher, Rangeland Fire Protection Assoc., Past-president Idaho Cattle Assoc.
•	Rob Mickelsen	US Forest Service, Ecosystems Branch Chief, Caribou-Targhee NF Curlew NG

Big Creek Ranch, Western Landowners Alliance, Central Idaho Rangeland Network

US Fish and Wildlife Service, Branch Chief - Conservation & Consultation (Partnerships)