



## 2019 ANNUAL REPORT



65

Students involved

43

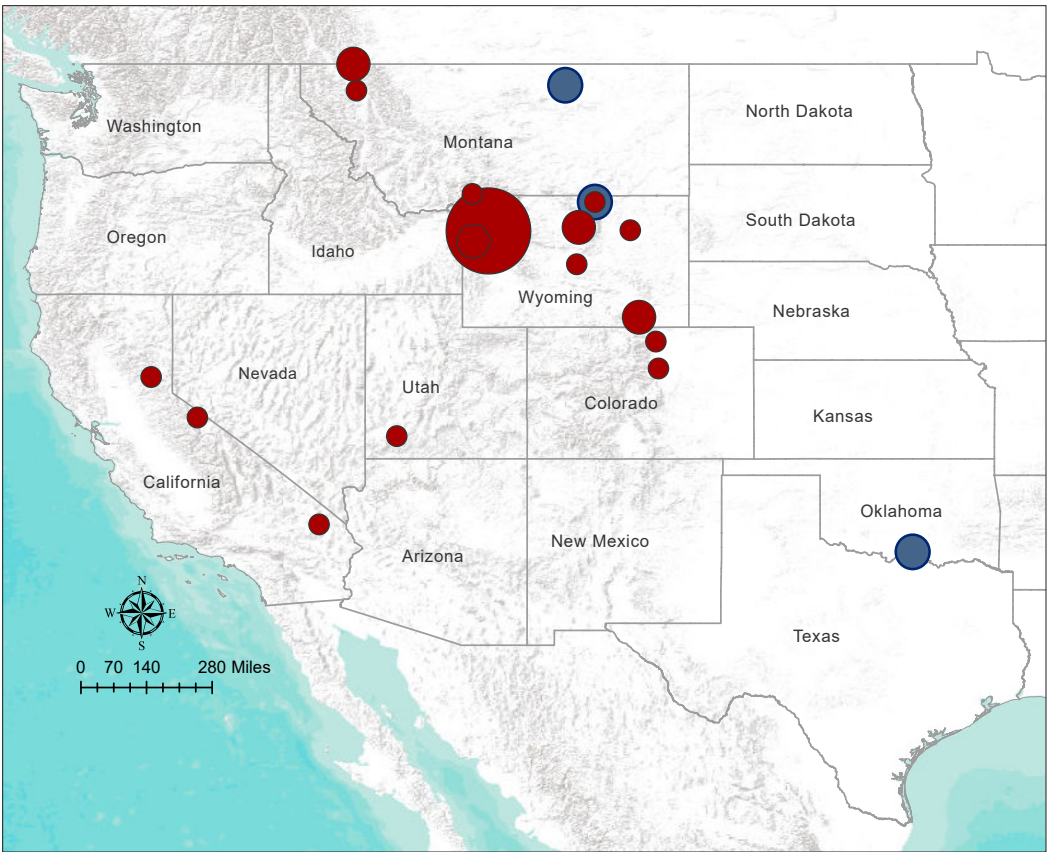
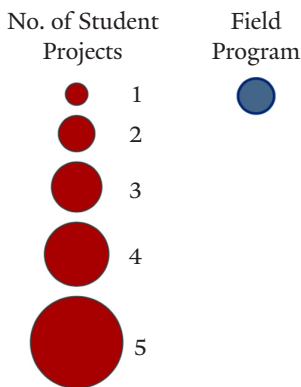
Partners engaged

34

Stewardship and conservation deliverables completed

**IMPACT AREA**

We provide students with opportunities to develop the skills needed to be leaders in land stewardship and conservation. Students participate in field programs and work closely with western partners and our staff to complete applied research and management projects.



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## OUR MISSION

Fostering land stewardship and conservation in the American West through teaching, research, outreach, and leadership.

Since its founding over a century ago, The Yale School of Forestry & Environmental Studies (Yale F&ES)\* has been tackling the evolving environmental challenges facing the West. This history of dedicated conservation work is supported through faculty and staff research, innovative student internships, and the Wyss Scholars Program, a scholarship awarded to students for their leadership potential and devotion to western conservation. Over the last six years, we have been able to grow this support even more through field programs, summer fellowships, and applied research projects made possible by the Ucross High Plains Stewardship Initiative. Our work in the West, which operates on the forefront of conservation solutions, provides students a living laboratory in which to explore questions, experience its landscape and people, and build a passion and land ethic. The learning and collaborations achieved here build the strong foundation that will support our students as they become our future scientists, practitioners, policymakers, business operators, innovators, and leaders.

The West is home to iconic landscapes, precious natural resources, rural towns, modern cities, and more than 1,200 Yale F&ES alumni. These alumni create a network of professionals that are integrated across the grasslands, forests, sagebrush-steppe, waterways, and communities of the West. They can be found woven into the fabric of agencies, businesses, non-profits, and educational institutions. In collaboration with their local communities, our alumni are creating and developing solutions for both present and future environmental challenges. Our alumni are visionaries such as Gary Tabor, both Founder and President of Center for Large Landscape Conservation; Carli Kierstead, Program Director with The Nature Conservancy - Wyoming spearheading collaborative conservation in Wyoming; and Tonja Opperman, a U.S. Forest Service fire behavior specialist who has dedicated 18 years to fire management in the West. They are not only helping lead the way, but also giving back to the Yale F&ES community that built their foundation. Alumnus Ben Williamson, Executive Director of Northern Rockies Conservation Cooperation, is a M.E.M '19 graduate, Wyss Scholar, UHPSI researcher and now a collaborator. Ben's partnership with us post-graduation resulted in our students studying recreational impacts in the Greater Yellowstone Area, and Ben plans to host Yale students this summer as research associates for the Northern Rockies Conservation Cooperative in Jackson, Wyoming.

We are proud of the exceptional achievements of our past and present students. We aspire to deepen our engagement in the Intermountain West and herein report here on our 2019 accomplishments.



A handwritten signature in black ink that reads "Indy Burke".

Indy Burke, *Carl W. Knobloch, Jr. Dean*

\*On July, 1 2020, we will become the Yale School of the Environment (YSE).



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## PROGRAM HIGHLIGHTS

### Land Management Field Practicum

Yale students worked alongside University of Wyoming, Sheridan College, and Texas A&M University-Kingsville students to complete a two-week field practicum in Wyoming and Montana. After five days of field and research training, the team collected data to determine if native grassland seeding efforts on cropland were successful in Montana. Students then analyzed data and authored a report that is being used by western conservation groups to inform grassland restoration efforts. Students gained skills in natural resource management, field study design, ecological restoration, and collaborative decision-marking.





## Prescribed Fire and Landowner Engagement

Students spent four days with Noble Research Institute staff in Ardmore, Oklahoma implementing prescribed burns on rangelands and learning techniques for engaging with private landowners. In addition to learning why, when, and how to conduct prescribed burns, students worked closely with livestock producers and wildlife managers to understand the importance of stewardship on private lands and management practices used to achieve land management goals.





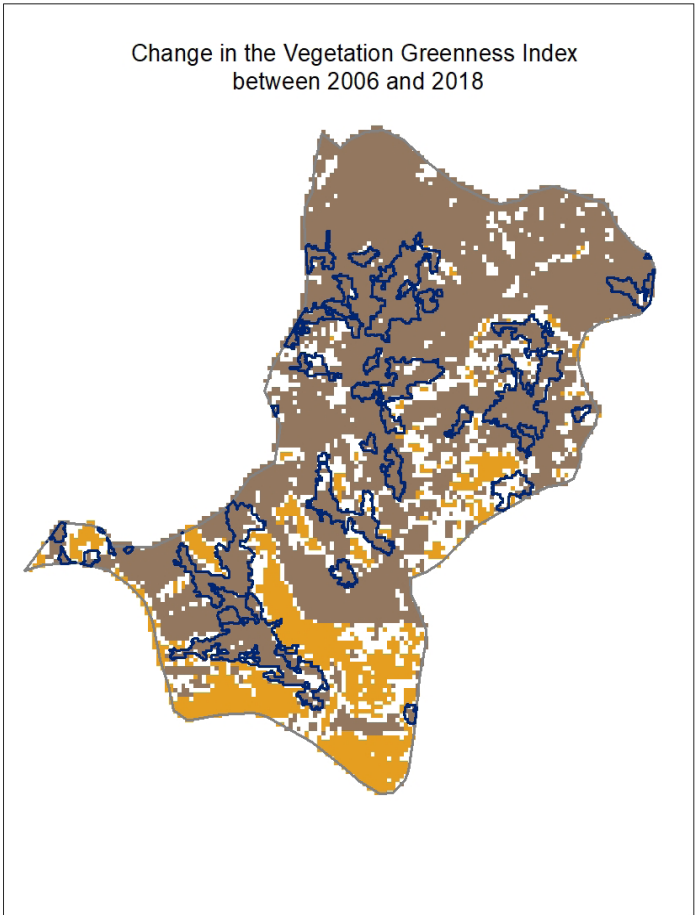
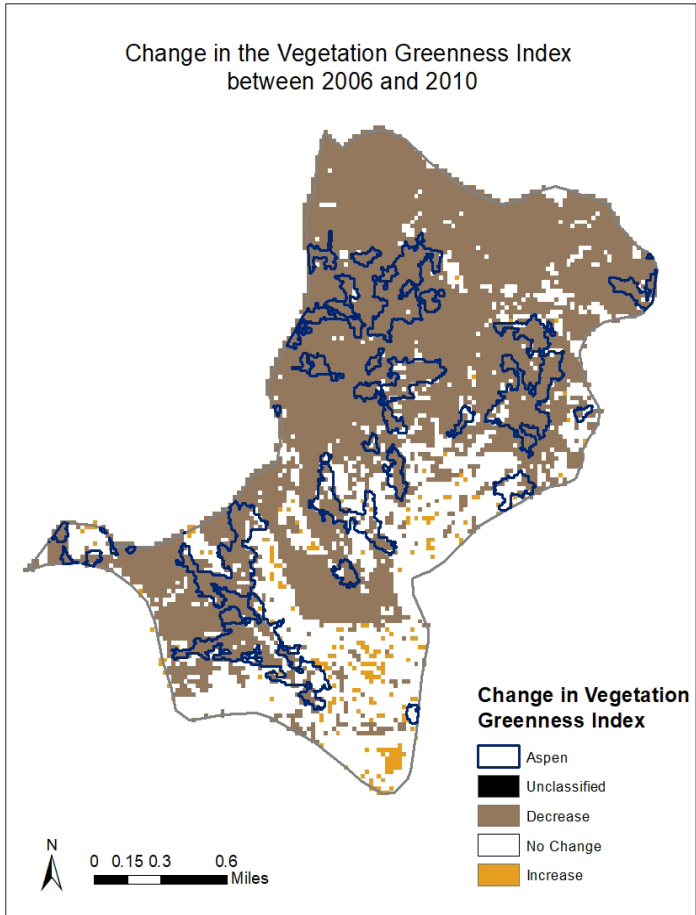
# Tracking Post-Fire Forest Regeneration

Our student research assistants, Zhi Li and Mark Foster, collaborated with the U.S. Forest Service’s Bridger-Teton National Forest to study forest policy and test how new geospatial methodologies can be used to evaluate forest regeneration post-fire. Improving these methods will allow land managers to identify vegetation changes across time and space using remote sensing. Managers can then use this information to guide forest management decisions and appropriate resource allocation. The sample map below tracks vegetation change (i.e., greenness) during 2006 – 2018 in an area that burned during 2009, with greener areas appearing in yellow.



TIANA WILSON-BLINDMAN

Change in the Vegetation Greenness Index (NDVI) After a Fire in the Bridger-Teton National Forest





## Solar Energy Feasibility for Tensleep Preserve in Wyoming

Student research assistants, Emilé Newman and Erik Anderson, completed a solar energy feasibility study for the Tensleep Preserve, a research and educational preserve in the Bighorn Mountains operated by The Nature Conservancy - Wyoming (TNC). Their study contributed to TNC's design of a renewable energy strategy that aims to strengthen energy independence in this remote area prone to wildfires. Establishment of solar energy on the preserve will allow the preserve to serve as a learning laboratory for remote ranches in Wyoming contemplating solar energy.

## Governance and Storytelling Along the Colorado River

Lucas Isakowitz, one of our fellows, provided support to The Nature Conservancy's Colorado River Program over the summer. He studied potential environmental fund models for the Colorado River Delta by working with stakeholders and coordinating with existing funds. Lucas published four articles, including one in *Time*

*Magazine*, to highlight conservation success stories and where work is still needed along the Colorado River. His written work addressed restoration efforts, management of water demands by farmers, and an endangered fish recovery program.



## Conservation in the Tetons through Collaboration

One of our summer fellows, Shea Flanagan, initiated several community-driven conservation efforts in partnership with LegacyWorks Group in Jackson, Wyoming. Shea's work resulted in a landowner assessment guide for a critical mule deer migration corridor and a report describing the community's vision for a local

wetland meadow that was based on interviews she conducted. Shea was instrumental in setting up a certification program to support crop conversion to specialty malt for improved water quality, a pilot program that will launch in 2020.



TIANA WILSON-BLINDMAN



*"As environmental coordinator for the Shoshone National Forest, every day I apply the skills and abilities developed during my time with UHPSI and at F&ES. I lead an interdisciplinary team of resource specialists analyzing project impacts, activities, and programs across the Forest. Achieving sustainable solutions for the Forest requires open communication, collaborative thinking, and innovative approaches. UHPSI and F&ES provided me a framework for generating such an atmosphere, and after only a few months this framework is resulting in efficient science-based decision making."*

**- MARK FOSTER (M. F. '19)**



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## ADDITIONAL PROJECTS

Read more about these projects at [highplainsstewardship.com](https://highplainsstewardship.com)

- Impacts of Recreation on the Greater Yellowstone Ecosystem
- Interface of Religious Life and Environmental Politics in Montana
- Evaluating Feasibility of a Grassbank in Thunder Basin, Wyoming
- Climate Vulnerability in the Crown of the Continent
- Surface Water Impact on Desert Bighorn Sheep Movement Patterns
- Organizing and Implementing the Western Speaker Series
- Incentivizing Wildlife-friendly Ranching in the Greater Yellowstone Ecosystem
- Reconciling Landownership and Sage-Grouse Management Designation Data
- Exploring the Ecological Impacts of Wildfire in Coniferous Forests in Sierra Nevada
- Investigating Socioecological Importance of Pinyon Forests for Paiute Communities in the Great Basin
- Understanding Socio-economic Change and Implications for the Future of the Bridger-Teton National Forest
- Engaging Youth and Underserved Communities in Land Management and Project Review Processes for the Bridger-Teton National Forest
- Canyon Creek Benthic Macroinvertebrate Study for Tensleep Preserve in Wyoming

