

Ucross High Plains Stewardship Initiative

April - May 2016 Report



Shane Cross of the Boot Ranch in Douglas, WY - diversifying with a delicious veggie farm!

Executive Summary

- Western Research Fellows head West!
- Russian Olive mapping with SCLT continues.
- Funding received from WWTLF for RO removal
- Manuscript submissions and acceptances at major scientific journals
- Collaboration with Michigan State culminates in USDA grant application in May
- Cheatgrass mapping with UW



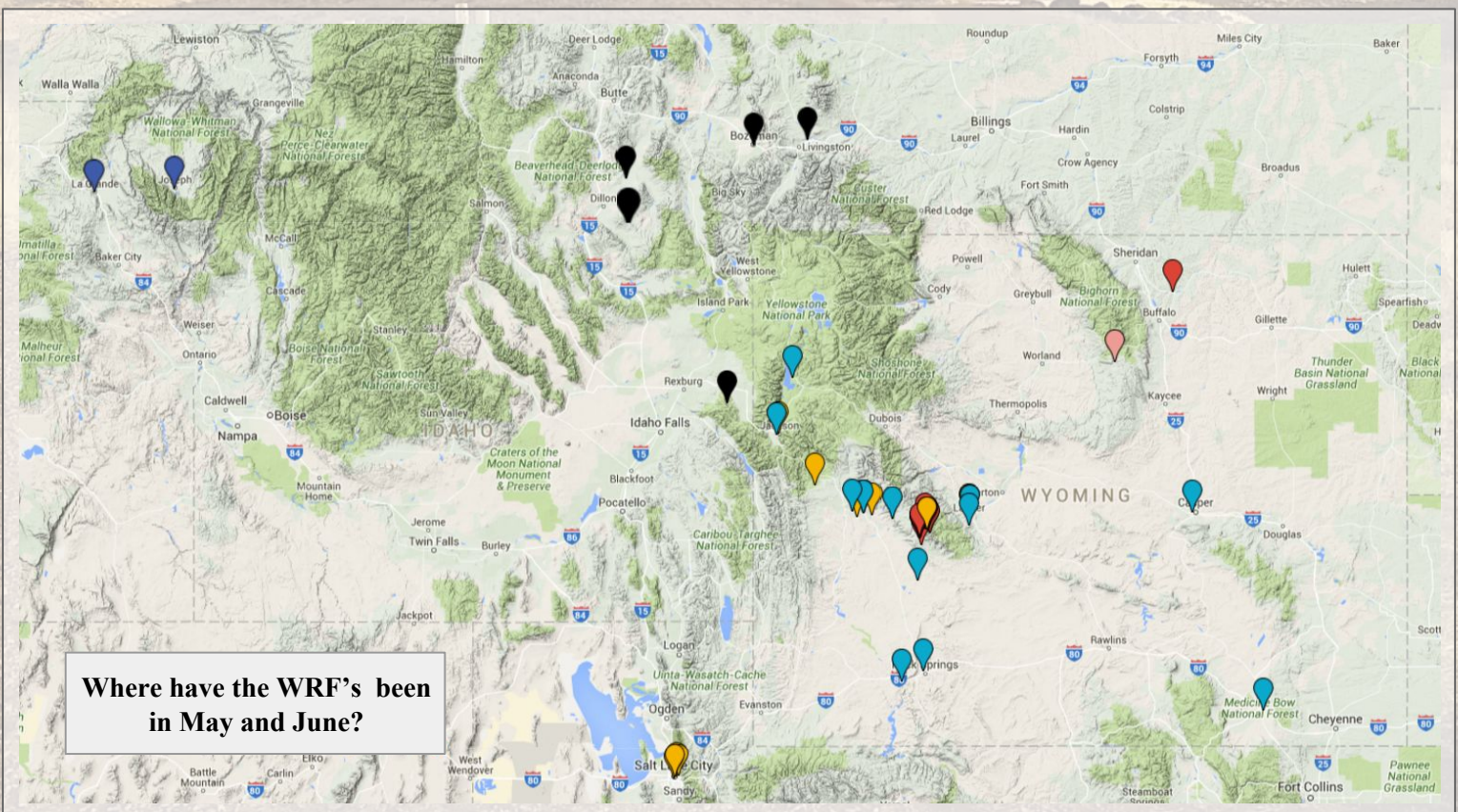
WRF Taylor and research assistant Grace braving snowstorms in the Wind River range while conducting field work

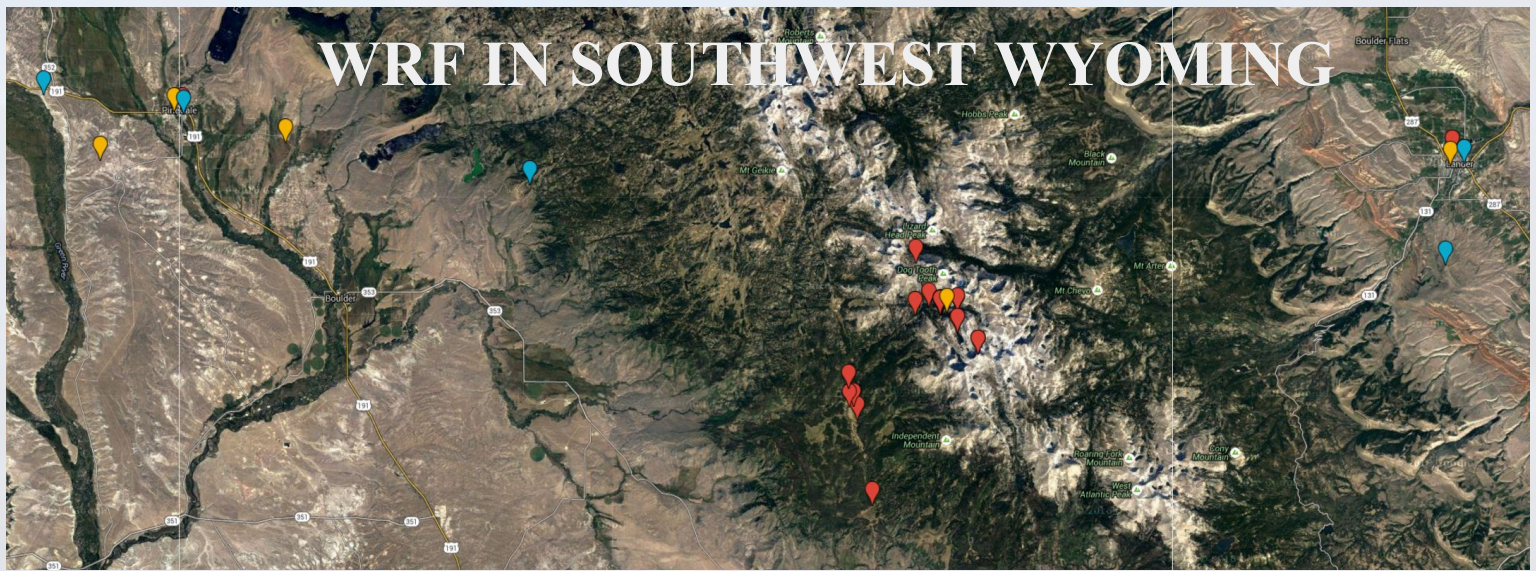
2016 Western Research Fellows

During the inaugural year of the Western Research Fellowship (WRF), UHPSI awarded summer fellowships to a selection of applicants interested in issues pertinent to land management in the High Plains. Ideal proposals targeted high-impact biophysical or social questions with management implications for *private* land management in the West. In addition to a financial award, fellows have been given access to a broad network of partner organizations and properties across the Mountain West, as well as technical, logistical, and publication support.

We awarded the WRF to eight students -- six master's, one doctoral, and one undergraduate. Their research spans a broad array of management issues from water to soil to policy to finance. The WRF projects are, in fact, a wonderful reflection of the myriad issues facing land managers in the West today. With UHPSI's emphasis on publication and dissemination of research, we're confident that the impact of the WRF projects this summer will extend across and beyond the high plains. We'll introduce you to three of the students on the following pages while highlighting their projects in more detail.

From the map below, it is easy to see the reach this fellowship program has already had in just the past few weeks of field work. As students visit more field sites, ranches, and farms across Wyoming, Montana, and northeast Oregon, points on this map will expand exponentially! Feel free to follow progress and interact with this dynamic map at highplainsstewardship.com/where-are-they-now/.





As you can tell from the map above, we have three students focused on projects in southwest Wyoming. You can read below excerpts from the beginnings of their summer research. More can be found on our website (highplainsstewardship.org) or in the [Pinedale Roundup!](#)



Taylor Ganz (red pins on map) is studying the effects of nitrogen deposition in alpine lakes in the Wind River range and looking at downstream implications for land management.

5/18/16 - I wanted to write and give an update on the research project to those of you who have expressed interest in keeping up to date on our progress. Grace (my research assistant) and I made it to Lander, WY last Thursday night after three long days of driving west from New Haven. Since then we've been busy making sure our gear is organized and all logistics are in place for this project. We've weighed out 80 pounds of food for the next month, calibrated and re-calibrated our research equipment, organized resupplies and acquired skis, sleds, stoves, sleeping bags and the rest of backcountry gear we'll need for the next month.

We're hoping to drive to Pinedale, WY tomorrow to try to get into the field Thursday but it all depends on conditions. Our most recent scout reported back patchy snow between 9,000-9,500' and full snow coverage above that zone. This was from slightly further south in the range so snow-line could be a little lower. Our initial plan was to head up to Deep Lake (10,200') via the Big Sandy Trailhead (9,200'), but right now road access ends 7 miles before the trailhead. We're working with the forest service to adapt to conditions and may now be heading in from the Dutch Joe Guard Station. We'll just have to see. The good news is that this means we should catch snowmelt on schedule. We'll keep you posted on our status and are excited to get into the mountains.

Stay tuned for a text message from us from our emergency communication device if you've asked for this – we'll be sending periodic updates from the field with our GPS location. Once you have this text you can respond at any time to get in touch. I'll be turning the device on at least once a day at 4:00 pm to see if we have any messages. We have unlimited service and solar chargers so don't hesitate to reach out if you want more information on our progress.

----- A Sampling of Taylor's Texts from the Sat Phone -----

5/20/16 - Home for the night at the cowgirl cabin. Heavy packs, unruly sled, wet boots and great start

5/21/16 - Time to turn around and head back to the cabin for the night. Caching gear - slow going and weather moving in

5/22/16 - 12" of snow yesterday! Needed today to dry out but shuttled a load from Dutch Joe to the cabin on skis. Hoping to make deep lake tomorrow.

6/1/16 - Car situation not good! Too warm last night and made no progress this morning. Hiked in and back at clear lk - planning to sample this pm

6/2/16 - Successful first day sampling. Good samples out of the outlet, inlet frozen solid under 120cm snow. Found time to build a snowman in between

6/12/16 - The mosquitoes are coming - must be summer.

6/10/16 - Successfully collected 25 hours of samples - that's 175 samples! Warm night, beautiful skies and everything went smoothly.



Sara Rose Tannenbaum (yellow pins on the map) is working as a reporter for the Pinedale Roundup, while conducting interviews with local landowners for her own fellowship research this summer.

6/25/16 - Greetings from Pinedale, Wyoming! “Where there’s just enough civilization,” reads the sign at the entrance to town. Now, I don’t know quite what that means, but I do know there’s just enough mountains, people, cows and water for me to feel at home.

I’ve taken to dipping my toes in Pine Creek at least once a day. The water flows fast and full of snow melt. A mama and baby moose browse the shrubs across the bank; I see them from the green picnic table where I write and think. On one of my daily pilgrimages to the creek (did I mention that “creeks” in Wyoming look a whole lot more like rivers?) I meet a hydrographer/county water commissioner with a clunky laptop. He gives me a crash course in

Wyoming water law—where the “biggest and best use wins”.

There’s no shortage of good conversations to be had here. In fact, I’ve started thinking of my “interviews” as just that: conversations. Some are spontaneous, others planned. But each interaction inevitably sheds light on what it means to live and work land in Sublette County, Wyoming.

For a town that’s 1 square mile, with a population of ~2000, community gatherings and meetings sure do abound. I wrote my first article for the Pinedale Roundup about one of them: a discussion regarding the new speed limit.

Earlier in the month I attended my first cattle branding. I saw some of those same ranching skills at Pinedale’s Ranch Rodeo—where cowboys and girls, young and old, ride broncs, rope calves and load trailers. The event ended with four cowboys trying to stay on a saddled cow the longest. Only one lasted longer than 8 seconds.

Some of my research brings me outside of Pinedale, too. I found myself in Jackson at the Western Governor’s Association annual meeting, wearing a media pass and listening to Secretary of the Interior Sally Jewell speak about landscape level management. “Innovation” was the buzzword of the event.

Then, not too many days later, I hiked into the Wind River Mountains to visit Taylor (fellow Western Research Fellow) and her research site out of Big Sandy Trailhead. There I experienced how to make a home in the backcountry. There, I discovered the magic and poetry of the mountains, learning their names and many faces.

Looking forward to all the learning that’s in store for the rest of my time in Wyoming!





Josh Morse (blue pins on the map) is conducting a socio-politico-economic study of the implications of the 150 mile Red Desert to Hoback mule deer migration. He is travelling up and down the migration corridor, attempting to find creative solutions across stakeholder groups (ranching, energy, conservation, recreation) to this difficult management problem.

6/27/16 - “Be prepared to do a lot of listening”. I’ve gotten this line of advice from every friend, colleague, and mentor who has heard about my work this summer mapping the social, political, and economic context behind the effort to study and conserve the longest big game migration in the lower 48. This reminder of the need for humility was always welcome, but by the time I touched down in Laramie, I had also begun to realize that it was incomplete. Although every peer and advisor had emphasized the importance of listening, all had assumed that I knew best what questions to ask and what outcomes to work towards. The thing about

humility in qualitative research is that it begins well before the interview, in acknowledging that the researcher may not even know what is worth listening to, or reporting on.

When I charted my field season from the confines of a snug library during the slushy New Haven spring, I had planned to leap immediately into formal, recorded interviews for data collection. 10 weeks is not a lot of time to collect a solid sample of hour-long conversations with individuals scattered across all of western Wyoming. This holds especially true because for my project, no official list of potential interviewees impacted by the Red Desert to Hoback migration exists. In such cases, a researcher must instead rely on the “snowball effect” to gain access to an increasingly broad community of suitable participants through word-of-mouth networking.

With the clock ticking, I was anxious about giving up a week of data collection. But, in the spirit of truly listening, I decided to go off-script. For my first week in the West, I met with key informants—folks who already knew something about my project and were interested in seeing it develop—in each of the participant communities I am focusing on: ranchers and landowners, NGO staff and board members, hunters, scientists, energy professionals, and state and federal managers. In each meeting, I asked a simple question: “how can I make sure this project produces something useful to you”?

The diversity of answers was remarkable, and taking them in was an exercise in humility itself. Feedback ranged from a frank and concise “you can’t... just focus on learning for yourself”, to a contemplative encouragement to focus on the human stories behind the policy positions I uncover, to a passionate and forceful assertion that a project like mine is only worthwhile if it helps unify people around their common interests. Across the board, responses carried perspectives and kernels of wisdom that my carefully-compiled series of questions on stakeholder values and problem definition would never have uncovered. And across the board, they helped me prepare to use the rest of the field season to gather data that is not only academically interesting, but politically and socially relevant to the people on the ground who live and work in the path of the Red Desert to Hoback migration.



My research is taking me across the sagebrush landscape that the Sublette County mule deer herd calls home. There is something wonderful in sharing a landscape and route of travel with the deer whose migration is behind the policy challenges I’m seeking to understand.

Russian Olive Identification in the Tongue River Watershed

In late February, we worked with the Sheridan Community Land Trust to put in a grant to the Wyoming Wildlife and Natural Resources Trust, to translate the results of this mapping work into on-the-ground eradication and reclamation — improving riparian habitats and water quality for landowners and river-users. In June, we received word that the project has been funded, providing **95% of the cost** of removal and reclamation for landowners interested in improving riparian environments on their properties. We're excited to be moving forward with our partners on this project!



Developing Collaborations

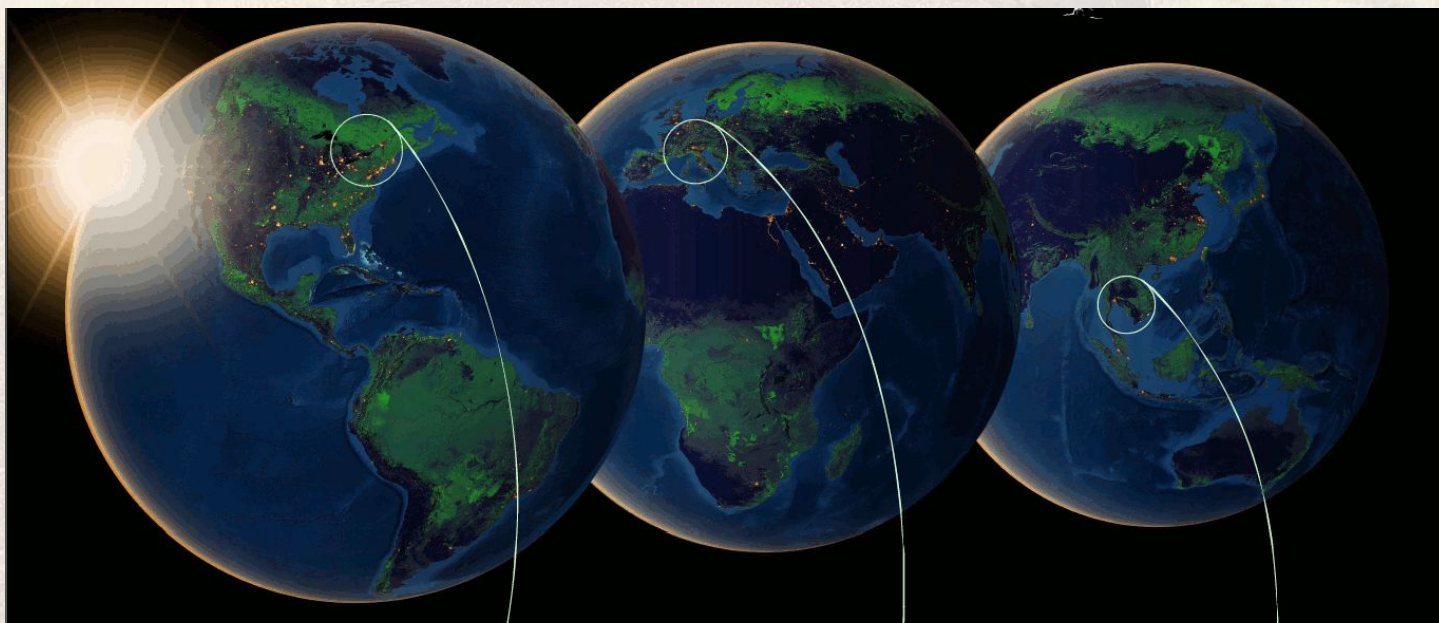
-- In partnership with faculty at Michigan State University we have submitted a USDA Higher Education Challenge grant to help fund a collaborative teaching and research program between MSU and Yale, which would bring undergraduate and graduate students from both programs to on-the-ground research projects in the American West and beyond. Most significantly, this funding will help jump-start an experimental grassland at Yale, which will allow UHPSI students to develop cutting edge research methods that will hopefully help land managers in the high plains more efficiently manage their properties.

-- We continue to work on developing collaborative research projects with Brian Mealor, Director of the Sheridan Research and Extension Center. Primarily, we intend to lend our remote-sensing expertise to mapping the distribution of cheatgrass across the state of Wyoming, leveraging an enormous field-collected dataset put together by Dr. Mealor's team.



Publication Updates

- Accuracy Assessment paper accepted for publication in *Photogrammetric Engineering & Remote Sensing*
- Leafy Spurge paper reviews received back from International Journal of Remote Sensing with good feedback
 - we will be re-submitting later in the summer with a much improved product
 - Scientific Data methodological paper accepted for publication June 2016
- Henry presents a beautiful global map (shown below) at ESRI conference June 2016



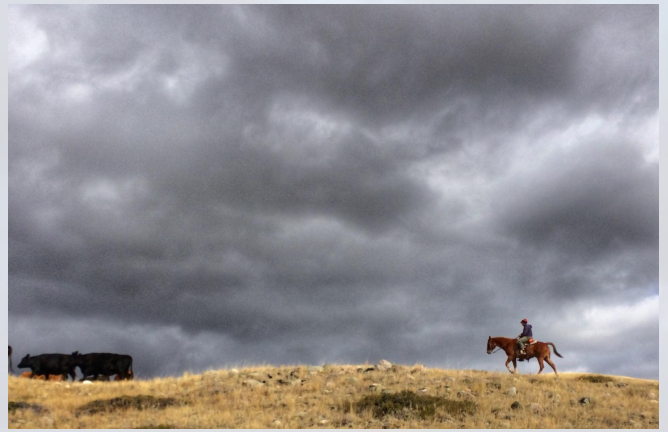
Notes from Charlie Bettigole, Program Director of the Ucross High Plains Stewardship Initiative

As I write this, gazing out over the eastern slope of the Big Horns, it's hard to imagine that we would be where we are today. Thinking back to the first summer at the Ucross Ranch, Henry, Devin, and I headed West from Yale with big hopes, open minds, and a blank slate for research and stewardship - an amazing opportunity presented to us by Raymond Plank and Professor Chad Oliver.

With the support of students, staff, and faculty, the UHPSI program has grown to become the go-to Yale F&ES resource for research and experiential learning in the West, specifically in the high plains of Wyoming and Montana. Over the past three years, we've become recognized as both leaders in geospatial analysis at the school, and as a place where students can come to gain practical experience pertinent to large-scale western land management.

With our first round of Western Research Fellows hitting the long road West over the past month, our reach and impact is larger than ever. I'm incredibly impressed with the projects the eight WRF's have put together, and proud of the way they've interacted with community members, land managers, and researchers here in Wyoming and beyond. I can't wait to see what they're able to accomplish over the course of this summer, and I'm eager to work with them to put together high impact publications that share the incredible work they're doing.

In addition to the WRF's, I'd like to thank UHPSI faculty and staff (Chad, Henry, Devin, Kris, Nick, Sabrina), our students this spring & summer (Leanne, Martin, Elizabeth, Laurel, Lucyann, Becca, Kyle, Charlie, Taylor, Jay, Josh, Dan, Sara Rose, Eamon, Jeff), and our collaborators (TNC Wyoming, Sheridan College, Sheridan Extension, MSU, Yale Landscape Lab, the Bradford lab, Boot Ranch, Ucross Foundation, Plank Stewardship Initiative, Apache Foundation, Savory Institute) for a fantastic spring - none of this would be possible without you all. I'm really looking forward to seeing where we go over the coming academic year!



Charlie surveying some high plains in Wyoming

Best wishes,

A handwritten signature in black ink, appearing to read 'Charlie Bettigole'.

UCROSS
HIGH
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Yale SCHOOL OF FORESTRY
& ENVIRONMENTAL STUDIES