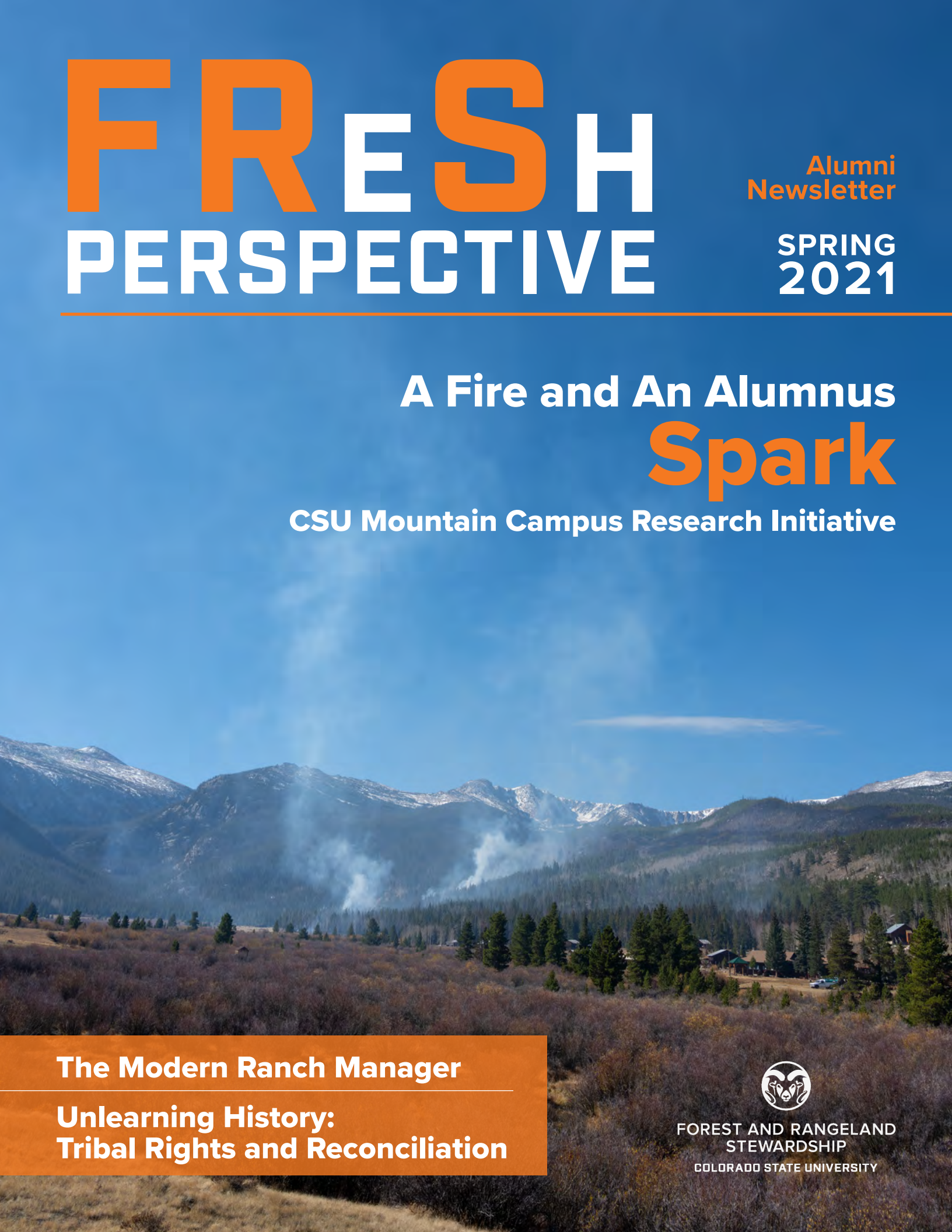
FRESH PERSPECTIVE

Alumni Newsletter

SPRING 2021

A Fire and An Alumnus Spark

CSU Mountain Campus Research Initiative



The Modern Ranch Manager

Unlearning History: Tribal Rights and Reconciliation

FOREST AND RANGELAND STEWARDSHIP
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We are preparing students and professionals to tackle natural resource challenges of the day. With a changing climate, higher wildfire risk, and increasing human demands on lands, this century is already very different from that before.

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Dear FRS
alumni, colleagues and friends,

Faculty, staff, and students created new and impactful opportunities during a challenging 2020-2021 academic year, with many successes to celebrate. Faculty developed and taught courses in new ways and new places (in-person, virtual, and hybrid), while renewing our commitment to teaching excellence and experiential learning. We've built two new graduate programs, with our first class completing the certificate in silviculture, and a new program designed to train western ranch managers ready to launch.

The department furthered efforts to create more inclusive learning environments and curriculum. Our faculty have been engaged in national dialogs, and garnered several prestigious grants, growing our strengths and focus on climate adaptation and resilience, post-wildfire response, and restoration.

This academic year also brings many changes for FRS, with two distinguished faculty retiring while we welcome seven new faculty and staff members to the department. There is so much to celebrate as we look with hope to the year ahead.

Wishing you the very best,

Linda McNozl

FRS Department Head

Announcements

Doug Rideout, Forest and Fire Economics Professor is retiring after 40 years at CSU. He has spent his entire personal and professional life dedicated to forestry. He was integral in developing CSU's fire economics program that is nationally and internationally recognized for technological applications in fire management and policy.

María Fernández-Giménez, Collaborative Rangeland Ecology Professor is changing roles after 18 years as a professor at CSU. She will continue her work in the western U.S. and Mongolia, and focus on community-engaged research that combines scholarship and creative writing as a CSU Senior Research Scholar.

Department News

NEW FRS FACULTY 2020-2021

When the pandemic hit, the department had three faculty searches underway, with additional opportunities for hiring faculty emerging through the growth of FRS online programs. The breadth of these hires is critical for enabling the department to continue meeting its education, research, and outreach missions.

Ethan Bucholz

Colorado State Forest Service and Warner College of Natural Resources Academic Liaison

Dominique David-Chavez

Indigenous Natural Resource Stewardship

Seth Ex

Silviculture and Applied Forest Ecology

Sarah Hart

Applied Forest Ecology and Silviculture

Carrie Havrilla

Rangeland Ecology and Management

Wilfred Previant

Forest Inventory, Analysis, Monitoring, Adaptive Forest Management

Robin Rothfeder

Natural Resource Policy

In Memorium

Archie Allen Dyer
Aug. 1938 - Jan. 2021
Forestry Professor
Forestry College Dean
Interim CSU President

Charles Bonham
Feb. 1937 - Dec. 2020
Professor, Range Science Management

FESA Program

The FRS department is home to CSU Online's Fire and Emergency Services Administration (FESA) Degree program. Over 50 CSU student-professionals have been among front-line defenders in the pandemic's response with 24 graduating since last March.

As certified emergency medical technicians, paramedics, emergency managers, firefighters and officers, and hazardous materials responders, these essential workers have provided initial care and treatment to coronavirus patients in over 40 different U.S. cities while working on their degrees.

In the more than 20 years since the FESA program began, it has trained members of fire departments to respond to more non-fire related situations that now include a global pandemic.

FESA graduates, Fall 2019

A Fire and An Alumnus SPARK

New CSU Mountain Campus Research Initiative

The Cameron Peak Fire sparks action for post-fire recovery efforts that benefit research and teaching.

Sometimes the best ideas happen at the kitchen table.

Last fall, the 2020 Cameron Peak Fire had filled Fort Collins skies with smoke when Warner College of Natural Resources students Travis Croft and friends sat around their kitchen table. They were discussing what they could do for the forests burning around the Colorado State University Mountain Campus, a place that had become their classroom and playground.

"I was taking a wildfire behavior course, and it made me think more critically about the fire in our backyard," Croft said. "It hit me that I could tap into this communal sense of Warner community and its collective knowledge and resources to start some kind of tree regeneration project."

The senior was just weeks away from graduation, having taken advantage of every opportunity he could find at CSU. Granted, this required extra time to complete a double major in Natural Resources Management and Ecosystem Science and Sustainability, but an additional year gave Croft the chance to be part of new post-fire restoration efforts. This would be something beneficial to his Warner family for years to come.

Croft knew the CSU Mountain Campus area, having spent a month there as a student in the NR 220 course learning the ins-and-outs of natural resource management methods. He had also taken a natural resource sampling class from Wade Tinkham, an assistant professor in the Forest and Rangeland Stewardship (FRS) department. His initial thoughts involved personally planting trees for forest regeneration at the site. Croft crafted a CSU Sustainability Fund project proposal together with Tinkham and CSU Mountain Campus Director, Seth Webb.

It's been a whirlwind for Croft since last December when he received his sustainability grant and bachelor's degree, he said. He combined his efforts with those that faculty members in the FRS department have been envisioning for CSU's high-elevation campus.

"Over the last several months the project has evolved into something bigger that connects to broader opportunities for long-term research and monitoring across Warner College," Croft said.

Two years ago, faculty members in the Forest and Rangeland Stewardship department began leading Warner College discussions about possible research opportunities at CSU's Mountain Campus. Once COVID-19 hit, the pandemic put these discussions on hold, but Croft's project in tandem with the Cameron Peak Fire helped jumpstart them back up. Virtual discussions continued around kitchen tables. Wade Tinkham and FRS Fire Ecologist Camille Stevens-Rumann saw Croft's proposal about post-fire regeneration as part of their greater ecological research and teaching endeavor.

"The overall hope is to establish a research and management demonstration of how to study high-elevation

Left: Travis Croft, Fall 2020 CSU Graduation Right: CSU Mountain Campus circa 2018. (photos courtesy of Travis Croft)

forest systems susceptible to climate change," Tinkham said.

High-elevation forests have been understudied because they aren't heavily managed, residing in wilderness areas that are often difficult to access. The 2020 Colorado wildfire season was unprecedented because it burned in forest types that have been minimally impacted by people or wildfires overall in recent decades.

CSU Mountain Campus offers a unique environment for research and monitoring because interactions between multiple disturbances can be openly studied. The 1994 Hourglass Fire burned around 1,700 acres in the surrounding forests, and now the Cameron Peak Fire reburned similar areas providing new research opportunities and challenges. Not to mention these same forests have also been hit with mountain pine and spruce beetle epidemics that swept through during the 25-year gap between the two fires.

"All these disturbances offer an opportunity to see how these places have adapted," Stevens-Rumann said. "We want to see if the same kind of recovery we've seen since the Hourglass Fire will happen after the Cameron Peak Fire."

Travis Croft will become a senior technician on a field crew advised by multiple FRS department faculty members. The team will spend several weeks camping out at CSU Mountain Campus this May and June establishing experimental vegetation plots and collecting information about trees and understory plants. These areas will be used for long-term teaching and research ventures at the campus.

FRS faculty identified forest areas that burned once or twice in both high- and low-fire severities where the field crew will establish nearly 100 plots. Each plot will consist of four subplots with one control plot, and three others respectively planted with lodgepole pine saplings, ponderosa pine saplings and an herbaceous seed mixture of forbs and native grasses. The field crew will collect the initial baseline data this first post-fire growing season, with future NR 220, F 230, and Warner College capstone course students contributing to future data collection efforts.

"This initiative provides another hands-on learning experience for future students who will eventually get to compare their annual observations and data with those taken by peers from years ago," Wade Tinkham said. "They'll appreciate that a fellow student-alumnus was involved in getting the project on the ground."

This long-term research and teaching initiative will be important for understanding how vegetation grows and changes over time, as well as how managers can use this data to decide when management efforts are needed. These methods and corresponding information gained can also be extended to establish vegetation monitoring across all vegetation types and disturbance conditions.

This opens up the possibility for new interdisciplinary collaborations around CSU and the state. Academic departments across scientific disciplines can find common ground. Partnerships and collaborations with other Warner College units such as the Colorado State Forest Service and Colorado Forest Restoration Institute will be strengthened. Opportunities to work with managers from the Arapaho-Roosevelt National Forest and the ability to connect with the national Adaptive Silviculture for Climate Change program led by FRS Department Head Linda Nagel are also on the table.

Croft said he is amazed that his own idea complemented these greater efforts in Warner College.

"We've all felt a special attachment to Mountain Campus, and to see and hear it burn was heartbreaking," Croft said. "Staying involved since graduating makes me feel like I'm still a part of CSU, and sets up something that lives beyond me." ~

Photo credits clockwise from top: CSU Photography, Wade Tinkham, CSU Photography

The Modern Ranch Manager

CSU launches new multi-disciplinary ranch management program

Managing a ranch is about much more than cattle.

Land ownership values in the western U.S. have been changing over the last few decades. Traditional ranches in the Rocky Mountains that primarily raised cattle are now being viewed or purchased as conservation or investment properties.

Ranch owners see their lands through multiple lenses: as a financial business for traditional livestock and hunting purposes, as a natural resource with forest management and preservation needs, and as a place of retreat for themselves and their guests. These proprietors need someone on site who can manage hundreds to hundreds-of-thousands of acres for various economic and ecologic objectives year-round.

Colorado State University's new Western Ranch Management and Ecosystem Stewardship Program (WRMES) is designed to train future ranch managers to be this jack or jill-of-all-trades now in high demand but in short supply.

"Every rancher knows they have to diversify their operations to live with the land," said Paul Evangelista, a CSU research scientist who assisted with formalizing the WRMES program for the university. "This program is founded on a basic ecological knowledge of the ranch itself before deciding how to manage for it."

The WRMES program was established in the Warner College of Natural Resources and is built on a three-legged stool that features units across the university. One leg is a new Western Ranch Management and Ecosystem Stewardship specialization for the Master of Natural Resource Stewardship degree in the Forest and Rangeland Stewardship Department. The second leg fosters research on these working landscapes with the Natural Resource Ecology Laboratory (NREL). The third leg partners with CSU Extension to develop an apprenticeship program that builds boots-on-the-ground knowledge and skills for a working ranch.

Evangelista said ranchers recognize that values, needs and technologies they face are different from those their grandparents experienced. The additional knowledge and professionals this program will produce can ensure ranching practices continue working in tandem with the changing land.

The Western Ranch Management and Ecosystem Stewardship program is unique in that the program itself was largely informed by the Colorado ranching community. Tim Haarmann, a jack-of-all-trades himself, saw the need for a specially trained western ranch manager due to the state's diverse terrain.

"Colorado is unique because of the Rockies. We have a lot of ranches with varied elevations and topographies," Haarmann said. "These high elevation areas provide a unique set of challenges and opportunities for ranching."

No one more qualified could have approached Paul Evangelista and emeritus faculty member Bill Romme about organizing a formal program to develop managers with the necessary breadth of knowledge and experience for these landscapes. Haarmann earned a Ph.D. in Ecosystems Ecology, worked for the federal government as a land manager, operated a personal cattle business, and has been a ranch manager for the last 15 years.

This connection between ranchers and scientists became the first step in figuring out how to develop a community-led program that benefitted the landscapes and livelihoods of the ranching community while also fulfilling the university's land-grant mission.

"CSU is doing an excellent job in providing a hands-on approach to experiential education," Haarmann said. "Ranches don't usually have the resources or ability

to conduct the training or research that these areas need, and the university can offer this."

The ranching community and university found a unique balance. All members of the program's steering committee that inform the program's objectives work in the ranching community. The university will provide the formal education and training for students. The ranching community will provide expertise, offer their land as classrooms, and even help fund the program through private donations for instructor salaries, research financing, and scholarships that provide equal opportunities to join the program.

"This says a lot about how invested the ranching community is with this program in belief and need," Paul Evangelista said.

The program will be offered at the graduate level allowing students to apply the backgrounds they've gained from past ecology, agriculture and natural resource courses and experiences directly on these ranches.

"This program is multifaceted and complex," said Tony Vorster, a postdoctoral fellow in NREL who helped develop the program. "It allows you to bring all these different disciplines together. Ranch management and ecosystem stewardship can be intimidating topics, but all backgrounds can help add knowledge to these conversations and different skills to these solutions."

Evangelista and Vorster have first-hand experience applying their own scientific expertise while developing ranching skills during their participation in the program's development. This included learning how to fix a broken tractor.

"We feel like ranch managers and not just scientists now," Evangelista said.

This exchange of knowledge is at the core of how the Western Ranch Management and Ecosystem Stewardship program will develop the modern ranch manager. The next generation will be equipped to make a living as well as live sustainably with the land. Ranchers, natural resource professionals, and academics will also learn something new. Evangelista said these private lands offer new and exciting conservation and management strategies for land stewardship.

"This program shows that ranchers are tinkering and finding new ways of doing things," he said. "It's a great way for science and management to come together."

The program awaits Board Of Governors approval.~

UNLEARNING HISTORY

Recognizing Tribal rights on public lands

by: Mary Guiden

New class offers a discourse correction

CSU students are discussing land acknowledgements from universities, the future of Bears Ears National Monument, and the historic appointment of former Rep. Debra Haaland of New Mexico as the first Indigenous person to serve as secretary of the U.S. Department of the Interior in a new university course.

"Natural Resource Rights and Reconciliation" covers hundreds of years of history, policy and land stewardship in the United States. The class was created and is led by Dominique David-Chavez, the provost's postdoctoral fellow who will be joining the FRS department as a new assistant professor this summer.

There has been a longstanding assumption that tribes are just another minority stakeholder group in the U.S. But David-Chavez said tribes are rights holders in many contentious situations where officials are trying to determine what to do on public lands.

Recognition of tribal nations' rights was growing during President Barack Obama's time in office, she noted. The Haaland appointment hints at the federal government potentially considering accountability for past and future actions affecting Native peoples.

"When you look at the environmental and climate crisis we're facing in this nation, we need to find new ways of thinking to address these issues," said David-Chavez. "But we also have to use 'old' ways of thinking to guide the decisions we make, especially as we think about natural resources or, rather, our nature relations."

David-Chavez, a researcher and instructor, identifies as a multicultural Indigenous Caribbean American, and a member the Arawak Taíno community. She said she has found teaching the class and engaging with students on these topics to be healing.

"Having these conversations with engaged students is helping me deal with a lot of frustration and angst I felt in my own education, not having access to an accurate history," said David-Chavez. "When I was in college, there was not even an opening in class on how to address a lot of concerns around oppression and reconciliation for Native peoples."

David-Chavez said there are parallels between what her students are learning this semester and what is occurring right now in the nation, such as momentum from the Black Lives Matter movement and historic inclusion of women and people of color in top positions in the Biden Administration.

"This really connects with the class that I'm teaching and the larger aim that we have yet to really embark very far on this pathway of reconciliation in the U.S.," she said.~

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Forest & Rangeland Stewardship

Connect with us during our annual FRS spring seminar series.

The Society for Ecological Restoration CSU Student Chapter found multiple opportunities to plant a pollinator garden, and clean up rebar posts and barbed wire at the Waverly property during a 2020-2021 academic year unlike any other.

Ecological restoration improves the environment you're given, and this group of students found ways to complete projects amidst pandemic restrictions and a historic 2020 wildfire season that made for difficult planting conditions. They prepared the site for future projects, and prepared themselves for the less than ideal environmental conditions and ecosystems they will restore in the future.