An Immersive Practical Training Course Designed to Inspire the Next Generation of Environmental Leaders in the Sky Islands
Our Mission

To foster ecological and cultural place-based learning and leadership, restore and support healthy, regenerating water sources and flourishing plant and animal communities, and support prosperous borderland communities by expanding a vibrant restoration economy.

We seek to do this by:

• Hiring culturally diverse youth living on the US/Mexico border to restore the trans-national watersheds, teaching practical skills to advance future land stewardship;
• Offering a world class Field School, an intensive and immersive practical training course that focuses on the social and ecological issues of the southern Arizona and northern Mexico borderlands region;
• Promoting biodiversity by providing individuals, communities, and land managers access to restoration quality plant materials and guidance for effective use;
• Fostering economic activity that restores degraded systems and bolsters services provided by natural systems, promoting research and practice to support ranchers and others caring for the land and supporting their communities.

Our Vision

Imagine borderlands where communities prosper through livelihoods that support caring for the land and the people on it, where a sense of place brings sense of purpose. Imagine borderlands in which rivers flow freely across borders and back again, where native plants and wildlife abound. Imagine borderlands where cultures, communities, woodlands and families not only survive, but thrive.
The 2019 Field School

The Borderlands Restoration Network Field School is a comprehensive, intensive, and immersive practical training course that focuses on the social and ecological issues of the southern Arizona and northern Mexico borderlands region. The curriculum includes a series of integrated lectures, workshops, field trips, and hands-on learning opportunities in active projects that cover a wide breadth of topics from technical skills in plant propagation to the foundation principles of a restoration economy. The Field School is guided by a diverse set of leading experts from across the spectrum of agencies, non-profits and partner organizations.

Field School Objectives

The 2019 Borderlands Restoration Network Field School is intended to train the next generational of environmental leaders in the southern Arizona/northern Mexico region to think critically about border issues through a comprehensive, solutions-based field course. The Field School incorporates a diverse pedagogy, and incorporates skills training, current best practices, and diverse perspectives.

The field school equips students to:

1) Express a foundational understanding of Restoration Ecology in arid systems;
2) Integrate across multiple perspectives to explain the causes of environmental, ecological, and cultural border issues;
3) Identify and utilize a variety of solutions to address a range of border issues, and critically assess their benefits;
4) Demonstrate basic practical field skills including restoration site assessment, erosion structure control and design, seed collection, cleaning and curation, native plant propagation, and wild plant harvest and use;
5) Apply expanded comprehension and skills to real world problems; and
6) Access a network of professionals and fellow students in the borderlands region.
WEEK 1: FOUNDATION OF RESTORATION ECONOMY & COMMUNITY RESTORATION
JULY 15-19; OPTIONAL WEEKEND ACTIVITY

Students will spend the first week of the Field School developing a sense of place in the Madrean Archipelago of the US/Mexico borderlands. Students will visit with a diverse group of experts and community members representing an array of opinions and livelihoods. Topics include: regional history (natural and cultural), indigenous perspectives, impacts of climate change, humanitarian responses, restored landscapes, and water and food harvesting.

SAMPLE SCHEDULE
DAY 1: An Introduction to the Patagonia area and The Story of Borderlands Restoration

DAY 2: Indigenous History and Cultural Perspectives

DAY 3: Regional Ecology and The Restoration Economy

DAY 4: Binational migration and Arts and Ecology Introduction

DAY 5: Small scale water and food harvesting and Agave Fiber Arts

WEEKEND FIELD TRIP (OPTIONAL): Hike to Lead Queen Mine

PAYMENT FOR ECOSYSTEM SERVICES

“Payment for Ecosystem Services” (PES) is an umbrella term for market-based mechanisms which achieve desired ecological outcomes through transactions in which ecosystem services are purchased from potential providers of that service. PES schemes hold the potential for translating non-market environmental values into real financial incentives and encouraging ecosystem service restoration. The institute is exploring the application of PES schemes in the borderlands, and researching which conditions can increase the effectiveness of these schemes.

DOC MOCK PARK

The 5-acre grassy, dusty public park running through the heart of the Town of Patagonia was once an industrial shipping site. Borderlands Restoration is now leading the effort to turn this park into an urban restoration site, with rainwater runoff diverted off adjacent roads to grow native trees and attract native wildlife, for the enjoyment of local community members. More accessible wildlife attracts more ecotourists, boosting Patagonia’s burgeoning restoration economy.
WATERSHED RESTORATION
JULY 22-26; OPTIONAL WEEKEND ACTIVITY

Students will learn to read the physical landscape and its intricate ecological processes. Topics will include: hydrologic process, the changing interaction between water and landscapes, the future of water in a changing climate, prescribed and wildfire effects, restoration across boundaries, and relevant research and management techniques. We will explore design methodologies that heal the land at multiple scales, from backyards to national forests.

SAMPLE SCHEDULE
DAY 1: Introduction to Watershed Restoration and Regional Watersheds

DAY 2: Erosion Control, Flooding and Water Quality

DAY 3: Riparian Grass Planting Project

DAY 4: Permaculture Demonstration Farm Project

DAY 5: Building Community in the Barrio and Social Justice

WEEKEND FIELD TRIP (OPTIONAL): Building Binational Working Relationships and Medicinal Herbs

PATAGONIA’S WATER FUTURE

The initial project of the Watershed Restoration team is a multi-year watershed effort in Patagonia designed to understand the issues facing the water security of the town of Patagonia and offer solutions to the problems identified.

CUENCA LOS OJOS

Our partners have developed nature-based approaches to restoring hydrologic processes based on the experiences of the Cuenca Los Ojos (CLO) Foundation. CLO has constructed tens of thousands of berms, gabions, and small rock dams to replenish plunging groundwater levels. These structures slow the flow of water, stabilize eroding creeks, increase infiltration, and allow sediments to accumulate to the benefit of struggling native ecosystems.
HABITAT RESTORATION
JULY 29-AUGUST 2; OPTIONAL MEXICO DEPARTURE

Students will learn the importance of genetic diversity to the health and resilience of threatened ecosystems through examining the role of regionally adapted native plant materials as a cornerstone for effective restoration. Not only will students understand that the success of revegetation efforts depends on the adaptive genetic variability of the source material, but they will develop practical restoration skills through working in the Seed Lab and Native Plant Nursery to contribute to filling a major gap in the seed supply chain and nectar landscape of the Madrean Archipelago. Students learn the protocols for seed collection and curation techniques, organic plant propagation methods, and how to ensure effective and efficient restoration work by getting “the right seed in the right place at the right time.”

SAMPLE SCHEDULE
DAY 1: Intro to Eco-region at the Biotic Level and Genetic Diversity in Restoration
DAY 2: Plant Materials for Restoration and Intro to Nursery
DAY 3: Planting and Monitoring Project and Bat Conservation
DAY 4: Wild Medicinal Plants and Medicine Making
DAY 5: Participant Presentations and Celebratory Event
FIELD TRIP (OPTIONAL): Sunday Departure for Sonora Mexico

THE BORDERLANDS RESTORATION NATIVE PLANT PROGRAM

Through years of field observation, nursery propagation, native seed banking, research, and revegetation practice, Borderlands Restoration has developed a systematic approach to producing and evaluating native species for their restoration value. Many of our plant materials are not available commercially and have not been researched, but remain vital to supporting pollinators and thereby stabilizing wild and cultivated systems alike.

HABITAT RESTORATION USING NATIVE PLANTS

Although using native plant materials that can be sourced to their origins is important when factoring in the successful genetics for surviving the wild, which vary from site to site, truly effective restoration depends on the integration of these plants into the landscape using complementary methods and approaches. When paired with rock and wood structures that stabilize wet or dry systems, plants effectively knit the landscape together and root our work in place. Together, the parts integrate to increase moisture levels, support wildlife and humans, and mitigate the potentially disastrous effects of changing climate regions.
Participants will visit various sites in Sonora Mexico and experience first hand the results of cross-border collaboration. The final week of the course is a culmination of watershed, habitat/native plant, food and community restoration. We’ll visit Rancho Los Fresnos which is a working ranch and demonstration site used to model feasible projects that other private landowners in the area can implement to increase watershed health along the San Pedro River. We’ll also be visiting Rancho San Bernardino. Between the two sites, erosion control, eradicating invasive species, habitat restoration, watershed restoration, holistic land management and native species for pollinators have all been implemented.

SAMPLE SCHEDULE
DAY 1: Tour and Project Collaboration at Rancho Los Fresnos

DAY 2: Agave Planting Restoration Project at Rancho Los Fresnos

DAY 3: Contrasting Desert and Riparian Ecosystems at Rancho San Bernardino and El Diablo

DAY 4: Sustainable Grazing and Grassland Management at Rancho El Valle

DAY 5: Cross-border Collaborations and Restoration in Douglas, AZ
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FIELD SCHOOL OBJECTIVES

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INTERNSHIP OPPORTUNITIES

Our Field School is central to the success of the Institute and it also serves as a “gateway” to deeper engagement through Internships, rather than as an end in itself. Students successfully completing the Field School have gained the skills necessary to be considered for appointments as interns in one of the four Project Streams. Interns receive further mentoring to advance their personal and career goals in ways that align with critical social and ecological issues in the borderlands region, and as part of an approach that empowers them to be in service to their own communities in the future.

While participants are able to craft their own approaches to learning and contributing with Borderlands Restoration Network, we organize our internship around four major Project Streams that provide multiple points of engagement: 1) Watershed Restoration; 2) Native Plant Materials & Habitat Restoration; 3) Foodshed Restoration; and 4) Community & the Restoration Economy. The interns participate in all aspects of planning and implementation of related projects from design and grant writing to outreach activities to engage the Patagonia community.

To learn more about our short and long-term internship, please contact Juliet Jivanti, our Education Services Coordinator at educationalservices@borderlandsrestoration.org.

“After finishing the field school I’m compelled to reach out to my community and show people that we can make changes ourselves that can have both immediate and long-term benefits.”

— field school participant
This is a proposed list of guest faculty for summer 2019, and is subject to revision.

### LOCAL PARTNERS AND REGIONAL EXPERTS

**Valer Clark:** Valer established the foundation Cuenca de Los Ojos (Watershed of the Springs), and its sister organization (Cuenca Los Ojos) in the U.S. to support a network to manage, research, and restore more than 150,000 acres in the Rio Yaqui watershed of southeast Arizona and northeast Sonora.

**Reverend John Fife:** Rev. Fife is the retired pastor of Southside Presbyterian Church in Tucson and was one of the co-founders of the Sanctuary Movement and No More Deaths. He is currently active in humanitarian aid groups that assist migrants in the borderlands.

**Carianne Campbell:** Carianne worked with the Sky Island Alliance since 2013 and is now an independent consultant specializing in vegetation ecology field methods to develop and monitor restoration projects, designing and implementing invasive species management plans, and the application of low-tech approaches to achieve restoration objectives.

**Francisco Cantú:** “Paco” is a Tucson-based writer and translator whose work focuses on the U.S./Mexico borderlands and his tenure as a Border Patrol agent.

**Gary Nabhan:** Gary is an ethnobiologist and agroecologist. He is the chair of Southwest Borderlands Food and Water Security and written 26 books translated into six languages. He resides in Patagonia.

**German Quiroga:** German is a native of Patagonia, and he is the president of the Patagonia Museum. He is committed to educating and preserving the history of the Patagonia community.

**Laura Monti:** Laura is a Cultural Ecologist at the Prescott College Kino Bay Center for Cultural and Ecological Studies. Her research and practice focuses on bio-cultural diversity and social and ecological health, which a Ph.D from University of Arizona in Arid Lands Resource Sciences-Ethno Ecology and Medical Anthropology, and an M.S. in Community Health and Pediatrics from St. Louis University.

**José ‘Husi’ Cázares:** Husi is a historian, author and faculty member at Tohono O’odham Community College where he teaches history.

**Brad Lancaster:** Brad is an expert in the field of rainwater harvesting and water management. He is also a permaculture teacher, designer, consultant and co-founder of Desert Harvesters, a non-profit organization.

**Jesús García:** Jesús is Director of the Kino Heritage Fruit Trees Project and an Education Specialist who has been associated with the Arizona-Sonora Desert Museum since 1991. He teaches natural history and cultural programs throughout southern Arizona and northern Sonora.

**José Manuel:** Jose is the Director of Cuenca de Los Ojos and has built a career in managing diversified ranches in northern Mexico and has experience in reforestation and restoration of degraded ecosystems in northeastern Mexico.

**Katie Sharar:** Katie has lived in the Borderlands since 2003, when she arrived to study border and migration. The beauty, grit, and resilience of this place, its landscape, and the people who live here have compelled her to stay ever since. She currently works in education and communications at the Kino Border Initiative in Nogales, Arizona/Nogales, Sonora.

“The course was more holistic than I expected and I felt inspired after seeing all the great work that people are involved in.”

— field school graduate
This is a proposed list of guest faculty for summer 2019, and is subject to revision.

### LOCAL PARTNERS AND REGIONAL EXPERTS (continued…)

**Kate Tirion:** Kate is the founder and Executive Director of Deep Dirt Farm Institute. She attended the Center for AgroEcology and Sustainable Food Systems at the University of California at Santa Cruz where she was certified in Eco-Horticulture, the gold standard for organic food production in the United States.

**Laura Norman:** Supervisory Research Physical Scientist with USGS at the Western Geographic Science Center. Her research is being used to help establish best management practices in arid lands; characterize trade-offs between ecological, economic, and social values for land use decision support; and the establishment of a binational monitoring and tracking strategy for mitigation of flood risk.

**Elise Gornish:** Elise is Cooperative Extension Specialist and runs a lab at University of Arizona. Her current research foci include addressing restoration and weed management strategies that mitigate effects of climate change (particularly warming and decreasing precipitation), and designing financially & and logistically feasible restoration strategies.

**Nelda Ruiz:** Community Organizer with Tierra y Libertad, a grassroots organization committed to creating sustainable communities. Nelda is a South Tucson resident originally from Ambos Nogales. She started organizing with Tierra y Libertad in 2010.

**Claudio Rodriguez:** Claudio Rodriguez joined the Tierra y Libertad collective in South Tucson in 2007. Members taught him how to grow food in the desert, and how to organize for community action. He also works for the Community Food Bank of Southern Arizona as the Farm and Garden Program Manager.

**Gooch Goodwin:** Patagonia native born to a ranching family in the San Rafael Valley. Avid naturalist and photographer who strives to use his knowledge of the Patagonias to connect others with their humble beauty and secrets.

**Marty Lawrence:** Marty is the Patagonia-Sonoita Creek Preserve Manager which is owned by The Nature Conservancy.

**Carla Vargas-Frank:** Carla is the herbalist behind Yerba Nomadica and has been immersed in the study and practice of herbal medicine for over a decade. Born and raised in the Sonoran desert, it was the familial lineage of the use of botanical medicines from Arizona’s diverse bioregions that first inspired her to pursue a greater understanding of the interaction between plants, place and people. Carla studied formally at Wildflower School of Botanical Medicine, Blue Otter School of Energetic Herbalism, and informally with many other influential instructors, not least of all the plants themselves.

**Daniel Toyos:** Daniel works for the non-profit conservation organization, Naturalia, A.C., and is the environmental technician at Rancho Los Fresnos in Sonora Mexico.

**Debbie Buecher:** Debbie is a Wildlife Biologist and Project Manager at her consulting business, Buecher Biological Consulting. Debbie specializes in bats and will bring her bat friends to Borderlands for her presentation.

**James Callahan:** James is a winemaker in Sonoita, where he founded the off-grid tasting room of Rune Winery in 2015.

“The quality of the instructors was the best part of the field school...[they] were continually asking thought-provoking questions, which initiated good conversation among the students.”

— field school graduate
In addition to the guest faculty, the field school will be guided by the expertise and hands-on experience of the staff of Borderlands Restoration Network. These professionals work in Patagonia and the broader Sky Island region to explore and activate creative solutions to natural resource challenges.

**Kurt Vaughn:** Executive Director, Borderlands Restoration Network (BRN). Kurt has an educational background in Cultural Anthropology, as well as Physiology from the University of California, Santa Barbara. He earned his doctorate in Restoration Ecology from the University of California, Davis.

**Ron Pulliam:** Borderlands Restoration and Wildlife Corridors Founder. His former positions include President of the Ecological Society of America, Director of the National Biological Service, Science Advisor to the Secretary of Interior, and Director of the Institute of Ecology.

**David Seibert:** BRN Consulting Scientist and Senior Fellow. David is co-founder and Managing Partner at Borderlands Restoration L3C and Wildlife Corridors LLC, also offers private consulting though Seibert Ecological Restoration LLC. He received his doctorate in Anthropology from the University of Arizona.

**Francesca Claverie:** BRN Native Plant Nursery Manager. Francesca hails from an alfalfa farm in Calexico, CA where her family has strong roots on both sides of the U.S.-Mexico border. She started working with native plants at the UC Davis Arboretum while in college and after graduating with degrees in Native American Studies and International Agricultural Development.

**Allegra Mount:** BRN Seed Lab Manager. Allegra is a passionate botanist and has studied systems across the country from Midwestern tall grass prairies and wetlands, to coastal Redwood forest, and now the Sky Islands of Southern Arizona. She has a Bachelors degree in Environmental Science from Northwestern University and trained in seed analysis at the National Seed Laboratory.

**Caleb Weaver:** Borderlands Earth Care Youth Director & Community Restoration Manager. Caleb is an ecological restorationist, environmental educator, and landscape designer. He earned Bachelor’s degrees in Ecology/Evolutionary Biology and Geosciences from the University of Arizona.

**Perin McNelis:** BRN Native Plant Nursery Assistant Manager. Perin grew up exploring the ecological beauty of the Sonoran Desert. She graduated from New York University with degrees in Dance and Anthropology, and received a permaculture design certification through Living Routes, a program of UMass at Amherst.

**Audrey Rader:** BRN Watershed Restoration Project Manager. Audrey’s interests center on developing and implementing ecological restoration projects in arid landscapes, facilitating public understanding of restoration practices, and promoting community ties through the lens of natural spaces. She holds a BS in Geosciences and an MS in Restoration Ecology from the University of Nevada, Las Vegas.

**Richard Pritzlaff:** Biophilia Foundation, Founder. Richard earned a PhD from Prescott College, a M.S. degree in Environmental Sciences and Policy from Johns Hopkins University, and a B.S. in Engineering Science from Vanderbilt University. In addition to the Biophilia Foundation he is the Managing Partner of Borderland Restoration L3c.
**Tuition**

Tuition for the four-week course is $1,600; this covers all lectures, activities and field trips during the course. Limited full and partial scholarships are available to cover the cost of tuition. Participants are responsible for expenses related to their own food and lodging.

**Housing**

A variety of housing options are available for students and faculty. Participants may camp near the Borderlands campus for free; however, camping gear is not provided. We also provide dorm style housing at the BRN campus for $200 for the entire course. Additional budget options with local residents (e.g. in guest houses, communal living spaces, etc.) exist as well, and are approximately $250-$400/month. Finally, Patagonia is a town that attracts many tourists, and there are many options that reflect this demand, ranging from bed-and-breakfast, cottages and a hotel. These cost between $80 and $140/night. Laundry facilities are available in the town of Patagonia. Borderlands administrative staff has a full list of options and is happy to discuss options with individual students.

**Food/Dining Options**

Students may prepare their own food at their lodging site; there are several small grocery stores in Patagonia. We are fortunate to have a local grocer that provides fresh, local and organic produce. For a greater selection, numerous options are available in Nogales, approximately 20 miles away, and Tucson, 60 miles away. Additionally, there are several cafes and restaurants in Patagonia as options for dining out. Borderlands staff has a list of local options and can discuss any questions with students prior to and during the course.

**Facilitator**

Sara Fetterly will be facilitating discussions and supporting participants throughout this year’s field school. Sara is currently an elementary school teacher at a Montessori school in Mexico City. She is a graduate of the 2018 field school and is very excited to continue working with the program this year. She uses she/her or they/them pronouns. Sara brings experience both as an experienced facilitator and field school alumni. She graduated with a B.A. in Anthropology and Sociology.

"I understand so much more about the practical aspects of restoration. We also got SO many great contacts and were exposed to many places and learning opportunities!"

- field school graduate
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BORDERLANDS RESTORATION NETWORK

CONTACT INFORMATION
Juliet Jivanti
Education Services Coordinator
educationalservices@borderlandsrestoration.org

PO Box 121
100 School Street, Patagonia, AZ 85624

Other educational opportunities include: paid internships, volunteering, and high school programs with Borderlands Earth Care Youth (BECY)

www.borderlandsrestoration.org
“The trip to Mexico showed true binational communication and how similar human interactions are across borders.”

- field school graduate

www.borderlandsrestoration.org
Borderlands Restoration Network is both an independent public charity, 501c3 and a collaborative of multiple organizations that are working to build a regional restoration-based economy in which diverse, fulfilling livelihoods support the restoration of thriving natural ecosystems and build prosperous, vibrant, healthy communities in the US – Mexico borderlands.

MEET OUR NETWORK OF PARTNERS

Borderlands Restoration Network
Borderlands Restoration
Wildlife Corridors
Cuenca Los Ojos
Deep Dirt Farm Institute