

Natalie Pyrooz

**Botanist**

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Skills Summary

Botanical research methods

Rare plant surveys

Fen assessment

Plant identification + taxonomy

GIS - AGOL, ArcPro, ArcMap

Geodatabase management

Cartography

Spatial data analysis

Botanical Illustration

Voucher collection

Herbarium maintenance

Program/project coordination Wilderness First Responder

Backcountry navigation skills Environmental education

Education

Masters of Environmental Studies, *with emphasis on botany and sustainability*

Evergreen State College, 2009

Bachelor of Arts

*Visual Communication of Environmental Issues*

Evergreen State College, 2006

Professional Summary

Natalie Pyrooz has over 14 years of botanical field and data assessment experience throughout the western United States. After working with multiple agencies she began operating as an independent consultant in 2021.

Natalie’s expertise lies in conducting floristic surveys, locating and mapping rare plants, leading teams to conduct invasive species surveys, conducting assessments of fen-meadow complexes, and collecting monitoring data. She is competent and driven when working independently on projects and is also a great team player, with experience leading crews of various abilities and backgrounds to achieve project goals.

She has experience with using various local and regional dichotomous keys; the majority of her work has been in the Sierra Nevada range, primarily in the southern Sierra and at the junction of the Sierra-Cascade-Great Basin provinces, but she has also worked throughout California, Arizona, Wyoming, Washington, Colorado, and in the neotropics.

Natalie has expertise in building and managing complex geodatabases, and designing and implementing pre- and post-field data management processes to fit project needs. She has provided numerous trainings to help others transition into use of modern field technology including the use of Collector and now Field Maps for tablet-integrated data management, and is also familiar with the use of Avenza and CalTopo.

She worked on multiple BAER (burned area emergency response) teams in high-intensity environments conducting emergency post-fire analysis on local and mega fires. She has worked with tribes and conservation crews to achieve invasive plant mapping at a landscape scale on ancestral lands. Additionally, she has collaborated with expert neotropical botanists and contributed multiple botanical illustrations for use in publications describing new species.

Selected Professional Experience

Botanist | Lassen National Forest | Susanville, CA

2018 - 2021

* + Conducted botanical surveys throughout the one million acres of national forest land managed by Lassen National Forest, working in 7 distinct project areas in 3 districts
  + Mapped and collected data for all sensitive and special interest plants, special habitats (fens, vernal pools) and non-native invasive species
  + Identified all plants to species and subspecies to contribute to complete plant lists
  + Collection of specimens to contribute to herbarium
  + Added multiple new plants to forest wide plant list
  + Found two new populations of Orcuttia tenuis (1B.1)
  + Monitored longer-term datasets, i.e. for Hesperocyparis bakeri (Baker’s cypress, CNPS 4B.2) and Penstemon sudans (Susanville beardtongue, CNPS 1B.2)
  + Implemented the transition from Trimble ArcPad to ESRI Collector for field data collection for LNF botany program
  + Led fen assessment effort, training other botanists and volunteers to learn protocol and recognize key soil, hydrology, and vegetation features; updated LNF fen delineation protocol based on recent literature
  + Completed written reporting requirements including plant lists, documentation for contribution to CNPS Rare Plants Database and the USFS National Resource Information System (NRIS)
  + Provided environmental education to local groups

Biological Science Technician | Sequoia & Kings Canyon National Parks | Three Rivers, CA

2012 - 2014 and 2017 - 2018

* + Identified and delineated fen ecosystems within wet meadows at an elevation of 6-12,000 feet in the southern Sierra Nevada using a hydrogeomorphic key and examining soils, hydrology and vegetation composition
  + Lead author and technician of photointerpretation mapping project of wet meadow and fen ecosystems using NAIP imagery, GIS software, and field accuracy assessment protocol
  + Collected rare and invasive species data (taxa, geospatial data, abundance, vouchers)
  + Managed geospatial databases for multiple projects
  + Data collection for several protocols: species composition evaluation of paired grazed and ungrazed meadows, residual biomass monitoring
  + Observed and recorded stock impacts to meadow ecosystems; evaluated stock camps adjacent to meadows
  + Trained backcountry rangers how to evaluate meadows within their patrol areas for stock impacts
  + Mapped known and new populations of species not native to Kings Canyon National Park, using Android tablets, Collector, and ArcGIS software; added to parkwide invasive species spatial database and executed QA/QC for all records
  + Controlled non-native species using a variety of methods such as hand-pulling, chemical treatment, and burning
  + Made recommendations to program management for target invasive species
  + Collected seeds and cones from over 20 species of native grasses, forbs, shrubs, and trees; spread native seeds in burned and disturbed areas
  + Organized and participated in restoration and planting projects
  + Organized groups of up to 20 volunteers to complete resource management tasks such as invasive species removal, mulching, and seed collection
  + Delivered talks to volunteer groups, conservation corps members, the resources management division orientaiton, trailhead and law enforcement rangers, trail crew and packers, about the background and relevency of the vegetation management program
  + Worked solo in front- and backcountry wilderness situations maintaining high standards for safety and following job hazard guidelines for situations involving risk
  + Planned for week-long field tours in remote backcountry wilderness settings (all logistics, communications, development of maps for trips with all necessary data)
  + Camped for 6-8 days in the backcountry of the southern Sierra Nevada, using the park radio and repeater system for communication

GIS / Science Coordinator - Ancestral Lands Program | Southwest Conservation Corps | Durango, CO

2015 - 2017

* + Designed and coordinated programs which met several objectives:
    - Teach Native American youth how to accomplish conservation goals such as mapping invasive species and describing vegetation communities in the Four Corners region and on the Navajo Nation
    - Deliver real data (spatial, ecological, vegetation) to project partners such as Bureau of Indian Affairs (BIA), National Parks Service (NPS), Bureau of Land Management (BLM)
  + Determined program budget needs for equipment and supplies, oversaw program purchasing and determined gear required to accomplish project objectives
  + Created and delivered trainings on plant identification and taxonomy, data collection procedures, GIS/GPS best practices, applied use of ArcGIS, ArcGIS Online, and Collector, Leave No Trace Principles, and safety in backcountry settings
  + Prepared digital and print maps for navigation and orientation for crews in the field Oversaw geodatabases file management, and reporting for 10 projects in two seasons
  + Managed the logistics and data collection of a field supervisor and up to 4 crews at a time (consisting of 1 crew lead and 4 crew members)
  + Organized a robust QA/QC of all data, executed data analysis and development of statistics and spatial data resulting from seasonal work
  + Coordinated with range managers, landowners, and agency representatives for access to project areas, and logistics of camping and trainings
  + Prepared reports of all work to provide to project partners
  + Delivered presentations about project scope and results at regional, national, and international conferences (i.e. annual ESRI conference)
  + Developed a metric to assess social program benefits to Native youth

Selected Publications, Posters, Presentations

Engaging Native Youth to Map Invasive Species on Ancestral Lands. Pyrooz, N. Presented at: Tamarisk Coalition Conference. February 2017. Fort Collins, Colorado.

Invasive Species Mapping on Tribal Lands: Engaging Native Young Adults in a Collaborative Pilot Program. N Pyrooz, C. Robles, and A. CIocco. Tamarisk Coalition Research and Management Conference. February 2016. Grand Junction, CO.

Using ArcCollector to Engage Native Youth and Map Invasive Species. N. Pyrooz. 2016 Esri User Conference. June 2016. San Diego, CA.

Mapping weeds on Ancestral Lands: A Collaborative Pilot Program Engaging Navajo and Hopi Young Adults. Pyrooz, N., C. Robles, and A. Ciocco. 13th Biennial Conference of Science & Management on the Colorado Plateau & Southwest Region October 2015. Flagstaff, AZ.

Mapping Fens and Wet Meadows in Sierra Nevada National Parks. Sierra Nevada Network Inventory and Monitoring Program. Nesmith, J., N. Pyrooz, C. Cann, A. Dickenson, E. Frenzel, P. Hardwick, S. Haultain, L. Jones. Presented at: California Native Plant Society 2015 Conservation Conference.

Conference Presentations

Pyrooz, N.N., C.R. Cann, J.C.B. Nesmith, E. Frenzel, S.A. Haultain, and P. Hardwick. 2014. Wet Meadow and Fen Mapping of Sequoia and Kings Canyon National Parks: A photo interpretation mapping project of wetland resources. Natural Resource Technical Report. National Park Service, Fort Collins, Colorado. In Prep.

Reviewer for: Cornejo, Xavier (ed.). 2014. Plants of the South American Pacific Mangrove Swamps. Publicaciones del Herbario GUAY, Facultad de Ciencias Naturales de la Universidad de Guayaquil

Pyrooz, Natalie. 2013. Plantas del Bosque Seco: Cordillera del Balsamo, Bahia de Caraquez, Ecuador. A Rapid Field Guide. Chicago Field Museum