



Plant Ecology

Boulder County | 2025 Annual Report

Mission

The plant ecology group at Boulder County Parks & Open Space (BCPOS) strives to preserve the health and diversity of our native flora and plant communities, and to restore the vegetation and ecological functioning of our streams, wetlands, grasslands, and forest ecosystems impacted by human and natural disturbances.



Overview

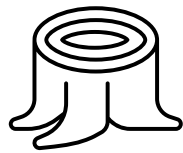
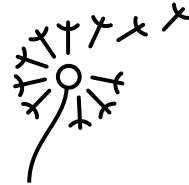
STAFF

Kelsey
Backiewicz
Carrie Cimo
Stephen Hauptli
Anna Havel
David Hirt
Abby Glauser
Brad
Winckelmann
Celeste Valrav



5,540 trees, shrubs and wetland plants installed

1,386 pounds of native seed produced and collected



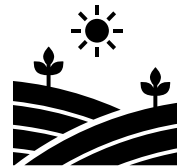
716 non-native invasive trees removed in riparian areas

642 acres of vegetation mapping completed

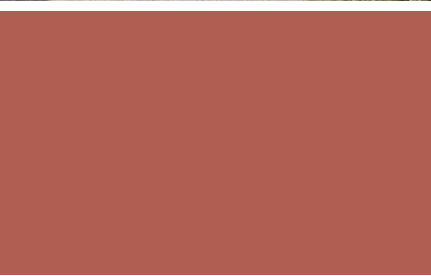


2,595 feet of stream restored

7.75 acres seeded



1,034 volunteer hours logged



Restoration

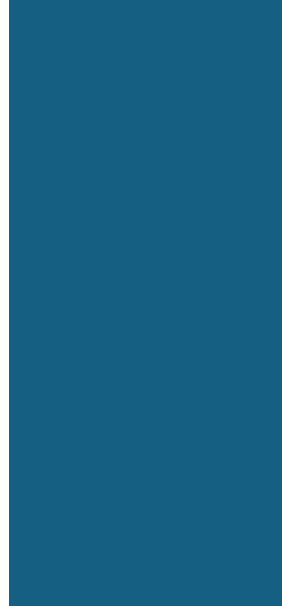


South St. Vrain Creek

In partnership with The Watershed Center, BCPOS worked to restore 2,135 feet along the South St. Vrain Creek on Hall Ranch. The project focused on two areas that had experienced mass deposition of sediment during the 2013 flood. Nearly 8,700 cubic yards of material was removed alongside the stream, and multiple overflow channels were constructed to spread out high flows across the newly expanded floodplain. This connectivity to the floodplain will slow flows to reduce erosion, capture sediment, and create additional aquatic and riparian habitat for numerous species.

- 3.85 acres were seeded with native grasses and forbs, many of them collected locally by staff and volunteers.
- 527 willows, trees, and shrubs were planted, with additional willow plantings and follow-up seeding planned for spring of 2026.

Restoration



Sherwood Creek at the Conger Mine

Sherwood Creek is an intermittent stream that flows between Mud Lake and Caribou Ranch and eventually into North Boulder Creek. At the turn of the century, a stretch of the creek was buried in overburden produced by the historic Conger Mine, once the largest tungsten mine in the state.

After a year of planning and permitting, work commenced in the fall of 2025 to restore this stretch of creek. Working with the Colorado Division of Reclamation, Mining & Safety, and with additional funding from the Colorado Water Conservation Board, 460 feet of Sherwood Creek was “daylighted” by removing nearly 4,000 cubic yards of waste rock and constructing a new creek channel with rock step pools. Locally produced biochar, compost from the county sort yards, and other amendments were added to the rocky soil, and the area was seeded with native grasses and forbs.

Care was taken to preserve adjacent hillside seeps whose iron-rich water is a mecca for dozens of butterfly species in the area, and a historic ore bin, that was safeguarded to prevent public entry.

In 2026, a buck and rail fence will be installed to deter moose from browsing on the hundreds of willows and native shrubs planted alongside the creek.

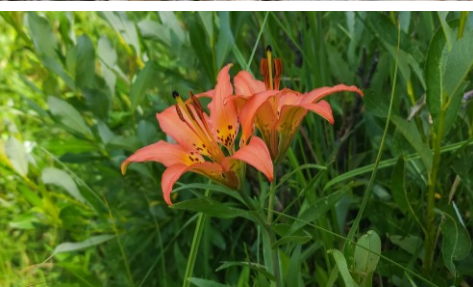
Vegetation Mapping

Plant ecology staff in 2025 mapped a total of 642 acres of vegetation among three properties: Elk Tracks, Fabel, and Dowe Flats-Cemex. Vegetation mapping is the process to delineate, classify, describe, and spatially record the geographic distribution of different vegetation communities. This work is critical to understanding biodiversity patterns, presence of rare or imperiled plant communities and species, and to help better manage Parks & Open Space properties by understanding baseline vegetation presence and condition.

As part of the mapping process, a total of 287 individual nested vegetation cover plots were evaluated to generate a comprehensive species list and to determine vegetation cover classes for each species in the plot.

Of the 642 acres mapped, a total of 80 acres are classified as vulnerable (G3/S3), imperiled (G2/S2), or critically imperiled (G1/S1) across all three properties (55 acres at Dowe Flats-Cemex, 9 acres at Elk Tracks, and 16 acres at Fabel). A total of 53 unique vegetation communities were mapped.

To date, 37,515 acres of vegetation on Boulder County Parks & Open Space properties have been mapped.



Rare Plants

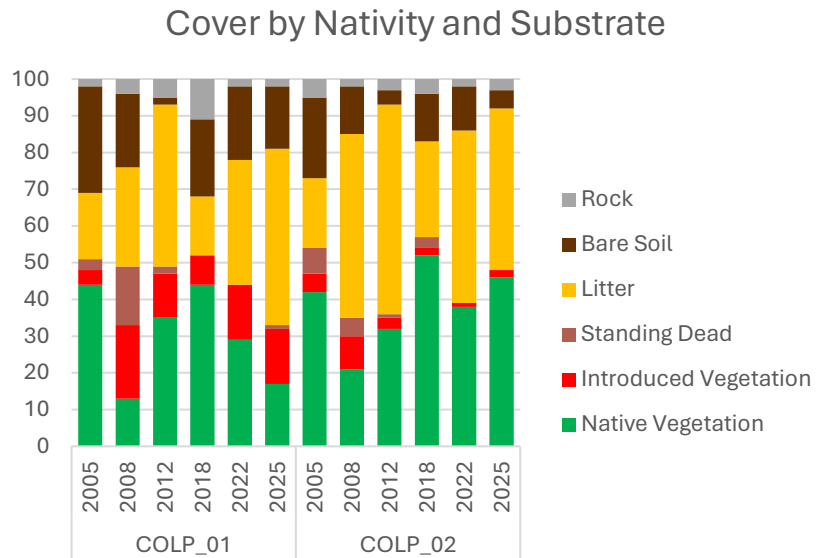
Plant ecology staff continued to document occurrences and populations of rare plants throughout BCPOS properties in 2025. Rare plants include those that have been ranked by the Colorado Natural Heritage Program as vulnerable (G3/S3), imperiled (G2/S2), or critically imperiled (G1/S1), and also include unranked plants that require protections for a variety of reasons. Collectively, these are designated as Boulder County Species of Special Concern.

Among other rare plant monitoring work in 2025, plant ecology staff mapped a previously unknown population of the imperiled prairie violet (*Viola pedatifida*, pictured top left), visited five properties to monitor known populations of the vulnerable wood lily (*Lilium philadelphicum*, pictured middle left), and monitored 18 plots to assess the habitat condition and demographics of the imperiled Bell's Twinpod (*Physaria bellii*, pictured bottom left).

Monitoring

Grassland Monitoring

The Colp property is one of the few properties east of Highway 36 that was not tilled because of its rocky nature; therefore, it is a relic of the mixed grass prairie. It is a diverse community of short and tall grasses and forbs, with uncommon species such as Indian breadroot (*Pediomelum esculentum*). There are five transects on site, and two date back to 2005. Ongoing data collection has shown how much a site can shift year to year, with precipitation being a primary driver in that response, a testament to the prairie's resilience to drought, fire, and other disturbances.



Rock Creek Farm Seeding

As part of the Rock Creek Farm management plan, a large section of the property was removed from continued agricultural tillage and designated as natural habitat. In November 2024, staff experimented by seeding 74 acres to native grasses and forbs, within occupied prairie dog habitat. Four small exclosures were constructed to monitor impacts of prairie dog herbivory on the seeding. Follow-up monitoring showed a 96% decrease in seeded vegetation frequency outside the exclosures compared to inside, highlighting the challenges in restoring grasslands within the presence of prairie dogs.



Beaver Co-existence



Beaver activity has increased on Parks & Open Space lands in recent years—a positive sign of these ecosystem engineers that help create healthy riparian habitats. However, some management is needed to protect irrigation infrastructure, prevent flooding, and maintain tree cover for stream stability, cooler water temperatures, and wildlife habitat. To support coexistence, staff and Boulder County Youth Corps protected 85 previously planted trees along South St. Vrain Creek at Hall Ranch and Golden-Fredstrom and lower Boulder Creek at the soon-to-open Prairie Run Open Space.



Boulder County Youth Corps

- Boulder County Youth Corps (BCYC) members planted 600 wetland plugs over two days at Bush Pond to help improve Northern Leopard Frog habitat.
- With a goal to shorten the recovery time after earthwork to restore a degraded high-altitude fen, the BCYC planted 2,058 wetland plugs over two days on the Prescott property situated at an elevation of 8,400 feet, above a popular campground at Peaceful Valley.
- BCYC members installed 28 tree cages to protect planted cottonwood trees from beaver herbivory during revegetation efforts along South St. Vrain Creek at Hall Ranch.
- Corps members removed 2,200 feet of remote fencing at Heil Valley Ranch, protecting wildlife from entanglement and allowing for more diffuse game movement that lessens erosion.



Native Seed Program

Boulder County's Native Seed Program prioritizes the use of locally sourced, ecotypic seed in land restoration. Ecotypic seed is genetically adapted to Boulder County's elevational gradient, unique soils, and climatic patterns. In 2025, the plant ecology team added 1,386 pounds of this ecotypic seed to our seed inventory.

Staff and community volunteers collected 124 pounds of seed by hand from a dozen properties. A little more than half of this hand-collected seed was produced at the Native Seed Garden—Parks & Open Space's small-scale, in-house seed increase program.

Another, 1,262 pounds was produced at a large-scale seed increase operation in Moses Lake, WA., by Benson Farms Incorporated. This producer uses a few pounds of hand-collected seed from Boulder County to sow ¼-1 acre of a single species. In 2025, we grew an acre each of woolly brome (*Bromus lanatipes*), Montana wheatgrass (*Elymus albicans*), Canada wheatgrass (*Elymus canadensis*), and hairy golden aster (*Heterotheca villosa*). These species are considered ecological “workhorses” and have proven successful in multiple restoration sites across the county.



The Native Seed Garden

The Native Seed Garden is a ¼-acre plot dedicated to growing native seed. In production since 2012, this garden is located on the edge of Ollin Farms, an organic produce operation, and adjacent to the Longmont-to-Boulder trail system. The partnership with Ollin Farms and public-facing location have contributed to its success and support over the past 14 years, producing more than 1,500 bulk pounds of native seed in that time. In 2025, we grew 10 different species and harvested approximately 78 bulk pounds of seed.

Instrumental to the success of this program are volunteers. This 10-person team meets at the garden every week from May through October to help staff with garden maintenance and seed collection. This year, the team gave 410 service hours weeding, planting, and collecting seed. All the members of this team have returned to the program for several years and have shared that this time working together has brought them closer to the land and has also grown meaningful friendships among team members.





Volunteer Program

In 2025, the plant ecology team hosted seven episodic (one-time) volunteer events, engaging the public in both native seed cleaning and native seed collection. To clean seed, we separate actual seed from inert plant matter, or *chaff*. This is important to properly store seed and use it on the landscape efficiently. All three seed cleaning events were very well attended, engaging 77 volunteers who gave 231 service hours to this effort.

We partnered with the Wildland Restoration Volunteers (WRV) and Volunteers for Outdoor Colorado (VOC) to host four native seed collections. These nonprofits engaged 131 volunteers, generating 393 service hours in these events. The plant ecology team has been partnering with WRV for more than 25 years and began a partnership with VOC in 2024. In 2025, BCPOS was awarded Land Manager of the Year by VOC.

From the Voices of Volunteers ...

“Why did you attend this project?”

“Love seeds!” ... “Love being outside and helping the environment”

“What did you like most about the project?”

“Being outside with like-minded people improving the environment.”

“What did you like least about the project?”

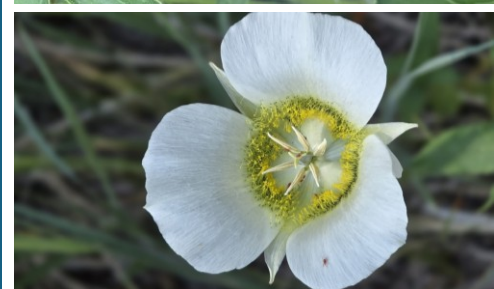
“Not long enough; we could have collected twice as much.”

iNaturalist Plant Challenge

As part of the 50th Anniversary of Boulder County Parks & Open Space, we created a challenge on iNaturalist for the public to discover and document 50 native plants on BCPOS lands, from spring through fall, and from the plains to the mountains.

iNaturalist is the premier online citizen science platform enabling anyone to photograph or record sounds of a life form, pin the location, and have it verified to a species by other users.

65 participants found 67 of the 69 possible plants in our list and documented 1,869 observations. 115 people online helped verify observations. Two users met the challenge of documenting 50 or more species from the list, garnering them a prized 50th Anniversary T-shirt.



Research, Planning, & Collaboration

The plant ecology work group actively participates in internal projects and cross-boundary projects with other county departments and outside agencies and provides input in the planning and design phase, as well as ongoing research with consultants, students, universities, and government agencies. Final papers of funded research projects can be found on our public website. In 2025, some of those efforts included:

- Working on ongoing design and construction oversight for the new Prairie Run Open Space near Erie.
- Reviewing design for Boulder Creek and Coal Creek stream restoration on Kenosha Open Space.
- Conceptualizing design alternatives to reduce maintenance needs and reduce trail flooding at Pella Crossing.
- Working with Mile High Flood District, the City of Boulder, and staff from multiple work groups at BCPOS to engineer an alternative for a water diversion structure on Boulder Creek to allow for fish passage and reduce the need for annual creation of a gravel push-up dam.
- Participating on an interdisciplinary team of staff and tribal members from the Southern Arapaho and Cheyenne to explore the potential to reintroduce buffalo to County lands.
- With funding from the EPA, resulting from penalties linked to a gasoline spill in 2021, staff began planning efforts with The Watershed Center, neighbors, and the public to create additional riparian habitat on two flood buyout properties along North St. Vrain Creek west of Lyons.
- Supporting graduate research investigating the impacts of fire retardant on soil nutrients and vegetation; floral nectar defense by ants on blazingstar (*Mentzelia*) plants; and understory composition of vegetation and the soil seed bank across different fire severities within the 2020 Cal-Wood Fire.
- Funding research on soil amendments and revegetation success.
- Facilitating and tracking oil and gas company compliance on 20 plug-and-abandon projects and continuous maintenance on another 164 wells; updated revegetation specifications.
- Working with Mile High Flood District to remove 203 Russian olive and crack willow along Coal Creek outside of Louisville.
- Maintaining and irrigating the Niwot Ditch Project restoration site and maintaining project fencing.
- Working with wildlife staff and the Boulder Watershed Collective to install low-tech process-based wood structures (log jams) in DeLonde Creek at Caribou Ranch.
- Working with GIS staff to create layers of vulnerable and imperiled Significant Natural Communities, that will allow for easier and more responsive use in management decisions.

