

Filoha Meadows Management Plan

MARCH 2024 ADOPTED 3.06.2024





Pitkin County
Open Space and Trails
530 East Main Street
Aspen, CO 81611

PITKIN COUNTY OPEN SPACE AND TRAILS BOARD OF TRUSTEES MISSION STATEMENT

The mission of the Pitkin County Open Space and Trails Board of Trustees is to acquire, preserve, maintain and manage open space properties for multiple purposes including, but not limited to, recreational, wildlife, agricultural, scenic and access purposes; and to acquire, preserve, develop, maintain and manage trails for similar purposes.

The Pitkin County Home Rule Charter provision authorizing the Open Space and Trails Program defines open space and trails as follows:

“Open Space” shall be defined as primarily undeveloped lands and waters which meet one or more of the following criteria: Within public scenic view planes; bounding or within urbanized areas; incorporating or protecting significant wildlife habitat; preserving historic agricultural and ranching activities; protecting riparian or wetlands areas; protecting other public lands from the impacts of development, and preserving cultural, historic and archaeological resources lying within properties which are otherwise acquired for their customary Open Space characteristics.

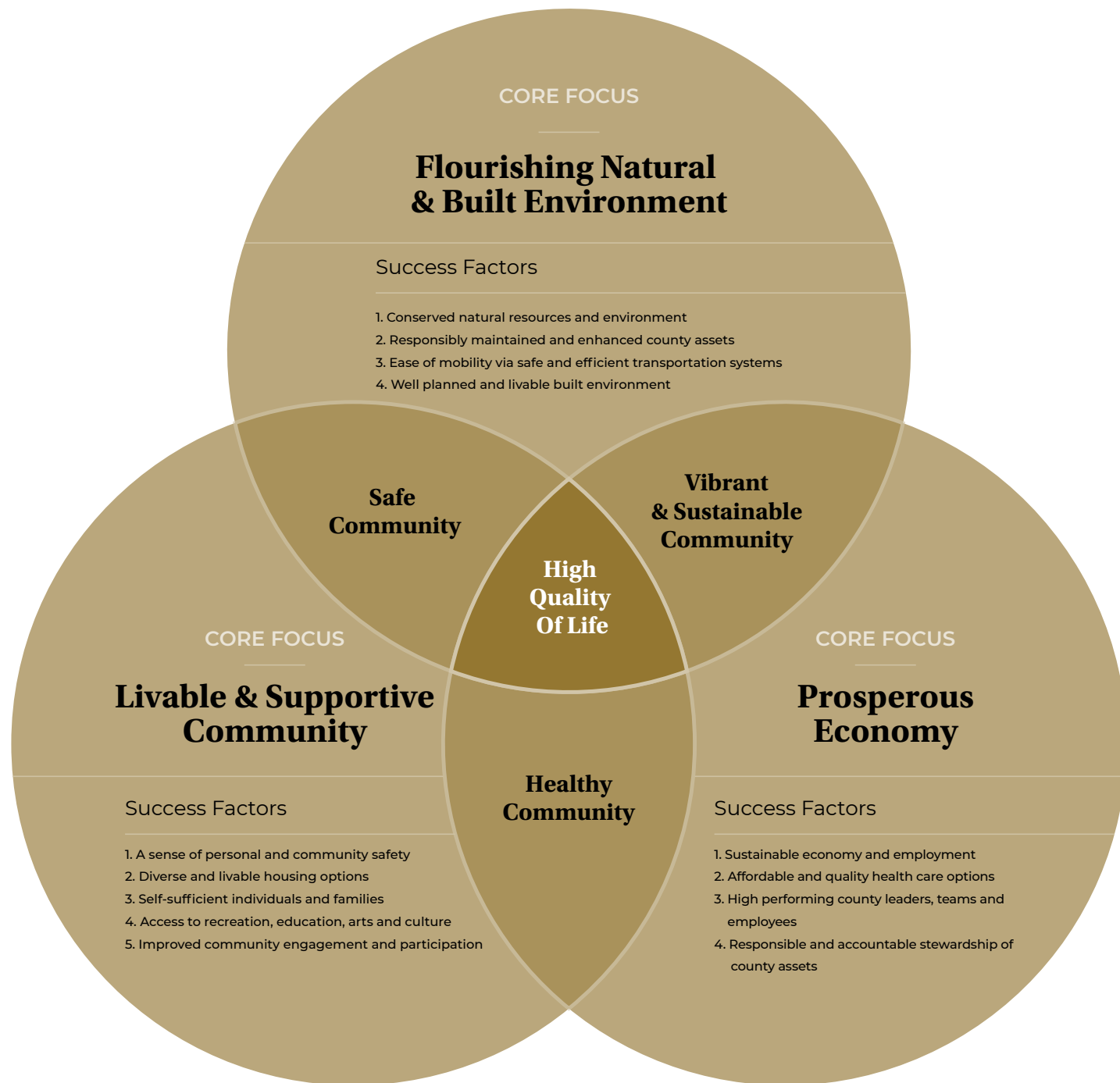
“Trails” shall be defined as access ways, either separate from or within County and State Road rights-of-way, meeting one or more of the following criteria: preserving historic routes of ingress and egress to public lands and waterways; providing access to and from recreational or urban destinations; providing transportation or recreational opportunities throughout the Roaring Fork Watershed.

[MANAGEMENT ACTIONS
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[ACCIONES DE MANEJO EN
ESPAÑOL HAGA CLIC AQUÍ](#)



*Looking north at Filoha
Meadows Nature Preserve.*



The Management Plan for Filoha Meadows Nature Preserve and Administrative Unit aligns with the 2011 Pitkin County Strategic Plan.

The Pitkin County Strategic Plan identifies three core Focus Areas: “Flourishing Natural and Built Environment,” “Livable and Supportive Community” and “Prosperous Economy.” The goal is for the three Focus Areas to work together to achieve the county’s vision and mission.

This management plan update aligns with the strategic plan in various ways:

Flourishing Natural and Built Environment

Success Factor 1: Conserved natural resources and environment

Filoha Meadows Nature Preserve and the Administrative Unit conserve important natural resources and wildlife habitat on nearly 212 acres in the Crystal Valley.

Success Factor 2: Responsibly maintained and enhanced county assets

This plan update builds upon actions identified following original parcel acquisitions, focusing on stewardship and maintenance, as well as safety improvements.

Livable and Supportive Community

Success Factor 4: Access to recreation, education, arts and culture

Management actions support natural resources and biodiversity while providing limited recreation access and strengthening educational partnerships to support and expand access to educational programming to a larger cross section of Pitkin County.

Prosperous economy

Success Factor 4: Responsible and accountable stewardship of county assets

OST strives to maintain and enhance the health, function and resiliency of the natural resources and built environment Filoha Meadows.

Plan Summary

The protection of Filoha Meadows from development has been a major conservation win for ecosystem function and biodiversity on the local and regional scale. Pitkin County Open Space and Trails (OST) has successfully implemented management actions at Filoha that have enhanced ecological conditions. These actions include noxious-weed control, reducing woodland encroachment into the meadows and riparian-forest restoration.

This 2024 management plan update for Filoha Meadows is a continuation of planning in the area, beginning with the original 2008 management plan. The plan update provides management direction for two additional parcels acquired between the 2008 management plan and this update, and prioritizes protection and enhancement of the biodiversity values that abound.

OST has conducted many natural resource studies since the first property acquisition in 2001. These studies have provided the knowledge needed to manage this area for the high level of biodiversity present and ensure its preservation. This updated management plan draws upon these valuable studies, as well as the input and expertise of partners, community members and visitors. Many attributes make Filoha Meadows an important place to protect and careful allowance is made for visitors to experience this beautiful and biologically diverse property.

GUIDING PHILOSOPHY

Filoha Meadows is managed for ecological integrity, education and limited pedestrian recreation.

GOALS

This management plan prioritizes the long-term resilience of the collection of parcels that comprise Filoha Meadows and its surrounding natural ecosystem through careful planning. The following goals have been modified from the 2008 management plan to reflect public and partner feedback collected during the 2023-24 planning process:

- Study, protect and enhance the ecological communities with particular emphasis on those that are unique and rare
- Enhance the outstanding wildlife habitat values
- Provide low-impact environmental education
- Offer recreation access along designated routes and in alignment with seasonal closures.

OUTREACH HIGHLIGHTS

To strengthen management of Filoha Meadows now and into the future, OST facilitated numerous feedback points to collect partner and community ideas. Area partners, including Colorado Parks and Wildlife, the U.S. Forest Service and Roaring Fork Conservancy, provided input on current conditions, trends and partner needs early in the planning process. Staff also engaged the Redstone Community Association and the Crystal Caucus before engaging in broader public outreach.

Public input for Filoha Meadows was collected alongside an outreach process for Redstone area parks and open spaces due to its proximity to Redstone. An online survey helped OST understand general patterns of use, what attributes are most valued, and what community members believe is working well or in need of change. The survey was conducted from mid-April through mid-May of 2023. Draft ideas for the management of the four parcels that comprise Filoha Meadows were tested with community members at three outreach events in summer 2023. In total, 151 responses were collected from the public.

The draft management plan update was released in January 2024 for partner and public comment before it was approved by the Open Space and Trails Board in March 2024.

KEY UPDATES

The 2008 plan provided management direction for the Filoha Meadows and Hot Springs Ranch parcels, which are collectively referred to as Filoha Meadows Nature Preserve. This plan update adds the 9-acre Larson-Grange Loadout to the Filoha Meadows Nature Preserve. It also accommodates administrative activities and facilities for the management of the Nature Preserve and nearby open spaces through designation of the Filoha Meadows Administrative Unit. Though included in the 2008 management plan, Penny Hot Springs is now managed through a separate plan, adopted in 2020.

This plan builds upon past accomplishments and celebrates the investments made to date. The key updates include:

- Maintain the seasonal closure, in effect from October 1 through June 30, and apply it to all parcels that are part of the Nature Preserve ***(Natural Resource Action 1)***.
- Continue natural resource monitoring through established intervals ***(Monitoring and Stewardship Action 1)***.
- Continue emphasis on managing the Nature Preserve for the protection of natural resources and biodiversity through a range of management actions that cover forest health, wildlife, pollinator habitat, protection of rare species and water resources and control of noxious weeds ***(Natural Resource Actions)***.
- Continue existing partnerships and grow new partnerships with educational groups that can implement programs targeted at diversified audiences at the Nature Preserve ***(Education and Outreach Action 1)***.
- Review of cultural resources on the Nature Preserve through a formal cultural resource assessment ***(Monitoring and Stewardship Action 4)***.
- Designate the Administrative Unit, a property acquired in 2019 and accessed from Hwy. 133, and include management actions to support its use as an OST Ranger/Maintenance Station ***(Housing and Stewardship Action 2)***.
- Investigate the feasibility of renovating the existing residential units at the Administrative Unit to a habitable condition to facilitate land steward response and management within the Crystal Valley and/or provide critical affordable housing to county employees ***(Housing and Stewardship Action 1)***.
- Construct an access route from the Administrative Unit to County Road 3b (aka Dorais Way), facilitating direct access to the Nature Preserve for administrative staff and educational tours ***(Access and Recreation Action 2)***.

Quick Facts

Investment: \$5,394,329

**Funding Partners:
Pitkin County Open
Space and Trails
(OST), Great Outdoors
Colorado (GOCO)**

**Total Open Space
Acreage: 210 acres**

**Years of acquisition:
2001-2019**

**Fee-Simple Parcels:
Filoha Meadows Nature
Preserve (2001-2008)**

- *Hot Springs Ranch (2001)
140 acres*
- *Filoha Meadows (2003)
50 acres*
- *Larson-Grange Loadout
(2008) 9.4 acres*

**Filoha Administrative
Unit (2019) 9.9 acres**

**Conservation
Easements:**

**Filoha Greenhouse
Holder: Open Space and
Trails**

**Filoha Meadows
Holder: Roaring Fork
Conservancy**

**Larson-Grange
Loadout
Holder: Roaring Fork
Conservancy**

HOW TO USE THIS PLAN

This plan is a near- to mid-range planning tool to budget for management actions to preserve Filoha Meadows and its resources for future generations. **Section 1** tracks the history leading to the Nature Preserve and Administrative Unit that exist today and celebrates the numerous accomplishments since adoption of the 2008 plan. **Section 2** provides the regional context, including area recreation and natural resources, and updates the current condition of the open space plus the newly added properties, complete with references to relevant studies. In **Section 3**, feedback from area partners and the community is summarized. Appendix A contains the full engagement results. Management actions in **Section 4** are a product of background research, assessment of current conditions and stakeholder input. Management actions for Filoha Meadows Nature Preserve and the Administrative Unit are listed separately. **Section 5** provides an easy-to-use matrix to measure progress in the years ahead.

ADMINISTRATIVE UNIT MANAGEMENT ACTIONS	
NATURAL RESOURCES	
NR.1	Monitor condition of riparian areas and native habitats and protect or enhance as needed.
ACCESS AND RECREATION	
AR.1	Close the Administrative Unit to general public access and parking. This closure does not apply to educational tour access. A route may be designated to support Crystal Valley Trail connectivity.
AR.2	Construct access from the Administrative Unit to County Road 3b (aka Dorais Way) via a two-track access road.
AR.3	Identify a parking area for educational programs and implement necessary site improvements.
HOUSING AND STRUCTURES	
HS.1	Complete necessary renovations to Unit A and Unit B to support housing for land stewards and/or law enforcement and public safety staff.
HS.2	Convert Unit B garage into an OST Ranger/Maintenance Station to provide a workspace for rangers and a touch-down station for partner agencies (law enforcement, public safety, land stewards) and a workshop for maintenance and equipment and material storage.
MAINTENANCE	
M.1	Perform hazard tree mitigation.

FILOHA MEADOWS NATURE PRESERVE MANAGEMENT ACTIONS

NATURAL RESOURCES	
NR.1	Maintain the seasonal closure from Oct. 1 through June 30 and apply to all parcels that are part of the Nature Preserve.
NR.2	Protect, enhance and restore native habitat types as appropriate.
NR.3	Maintain collaboration with partner agencies that require access to the Nature Preserve to manage their public assets.
NR.4	Maintain and promote healthy, resilient forests.
NR.5	Maintain wildlife movement and migration corridors.
NR.6	Support pollinators and pollinator habitat.
NR.7	Monitor and protect rare orchids.
NR.8	Continue riparian restoration.
NR.9	Preserve and protect onsite water resources.
NR.10	Control weeds and promote native plant communities.
NR.11	Implement wolf reintroduction awareness as needed.
NR.12	Allow external research on a case-by-case basis.
EDUCATION AND OUTREACH	
EO.1	Coordinate public education opportunities such as firefly tours and other guided natural-resource tours with Roaring Fork Conservancy (RFC) or similar groups.
EO.2	Install a sign at the entrance to the Nature Preserve.
MONITORING AND STEWARDSHIP	
MS.1	Continue wildlife and vegetation monitoring at regular intervals.
MS.2	Exercise Wilke Ditch water rights.
MS.3	Monitor geothermal wetlands.
MS.4	Conduct a cultural resource assessment to identify and evaluate the cultural resources of the Nature Preserve.
MS.5	Continue to monitor recreational use and non-compliance.
RECREATION	
R.1	Continue to limit public recreation access to pedestrian use only on the Filoha Meadows Trail.
R.2	Prohibit fishing/wading on the Filoha Meadows Nature Preserve and Larson-Grange Loadout riverbanks.
MAINTENANCE	
M.1	Maintain the Beaver View viewing blind as needed.
M.2	Explore potential for under-grounding utilities.

RESUMEN DEL PLAN DE MANEJO EN FILOHA MEADOWS

La protección de Filoha Meadows (pradera) contra el desarrollo ha sido una importante victoria para la conservación de la función del ecosistema y la biodiversidad a nivel local y regional. El Departamento de Espacios Abiertos y Senderos (OST, por sus siglas en inglés) del Condado de Pitkin ha implementado con éxito acciones de manejo en Filoha que han mejorado las condiciones ecológicas. Estas acciones incluyen el control de malezas nocivas, la reducción de la invasión de bosques en las praderas y la restauración del bosque ripario.

Esta actualización del plan de manejo para Filoha Meadows en 2024 es una continuación de la planificación en el área, que comenzó con el plan de manejo original de 2008. La actualización del plan brinda dirección de manejo para dos parcelas adicionales adquiridas entre el plan de manejo de 2008 y esta actualización, y prioriza la protección y mejora de los valores de biodiversidad que abundan.

El OST ha realizado numerosos estudios de recursos naturales desde la primera adquisición de propiedad en 2001. Estos estudios han proporcionado el conocimiento necesario para gestionar esta área con el alto nivel de biodiversidad presente y garantizar su preservación. Esta actualización del plan de manejo se basa en estos valiosos estudios, así como en las aportaciones y experiencia de socios, miembros de la comunidad y visitantes. Filoha Meadows tiene muchas características que lo convierten en un lugar importante para proteger, y se permite cuidadosamente que los visitantes disfruten de esta hermosa y biológicamente diversa propiedad.

ACCIONES DE GESTIÓN DE LA UNIDAD ADMINISTRATIVA	
RECURSOS NATURALES	
NR.1	Monitorear el estado de las áreas ribereñas y los hábitats nativos y proteger o mejorar según sea necesario.
ACCESO Y RECREACIÓN	
AR.1	Cerrar la Unidad Administrativa al acceso y estacionamiento del público en general. Este cierre no se aplica al acceso de visitas educativas. Se puede designar una ruta para respaldar la conectividad del Sendero Crystal Valley.
AR.2	Construir un acceso desde la Unidad Administrativa hasta la Ruta del Condado 3b (también conocida como Dorais Way) mediante un camino de acceso de dos pistas.
AR.3	Identificar un área de estacionamiento para programas educativos e implementar las mejoras necesarias en el sitio.
VIVIENDAS Y ESTRUCTURAS	
HS.1	Completar las renovaciones necesarias en la Unidad A y la Unidad B para apoyar la vivienda de administradores de tierras y/o personal de aplicación de la ley y seguridad pública.
HS.2	Convertir el garaje de la Unidad B en una Estación de Guardabosques/Mantenimiento de OST para proporcionar un espacio de trabajo para los guardabosques y una estación de apoyo para agencias asociadas (aplicación de la ley, seguridad pública, administradores de tierras) y un taller para almacenamiento de mantenimiento, equipo y materiales.
MANTENIMIENTO	
M.1	Realizar la mitigación de árboles peligrosos.

ACCIONES DE MANEJO EN LA RESERVA NATURAL DE FILOHA MEADOWS	
RECURSOS NATURALES	
NR.1	Mantener el cierre estacional en vigencia desde el 1 de octubre hasta el 30 de junio y mantener el mismo cierre a todas las parcelas de la Reserva Natural.
NR.2	Proteger, mejorar y restaurar los tipos de hábitat nativos según corresponda.
NR.3	Mantener la colaboración con las agencias asociadas que requieren acceso a la Reserva Natural para gestionar sus activos públicos.
NR.4	Mantener y promover bosques saludables y resilientes.
NR.5	Mantener los corredores de movimiento y migración de la vida silvestre.
NR.6	Apoyar a los polinizadores y su hábitat.
NR.7	Monitorear y proteger orquídeas raras.
NR.8	Continuar con la restauración riparia.
NR.9	Preservar y proteger los recursos hídricos del lugar.
NR.10	Controlar las malezas y promover las comunidades de plantas nativas.
NR.11	Implementar concientización sobre la reintroducción de lobos según sea necesario.
NR.12	Permitir la investigación externa caso por caso.
EDUCACIÓN Y DIVULGACIÓN	
EO.1	Coordinar oportunidades de educación pública, como recorridos para observar luciérnagas y otros recorridos guiados de recursos naturales con Roaring Fork Conservancy (RFC, por sus siglas en inglés) u otros grupos similares.
EO.2	Instalar un letrero en la entrada de la Reserva Natural.
MONITOREO Y CONSERVACIÓN	
MS.1	Continuar con el monitoreo de la vida silvestre y la vegetación a intervalos regulares.
MS.2	Ejercer los derechos de agua de Wilke Ditch.
MS.3	Monitorear los humedales geotérmicos.
MS.4	Realizar una evaluación de recursos culturales para identificar y evaluar los recursos culturales de la Reserva Natural.
MS.5	Continuar monitoreando el uso recreativo y el incumplimiento.
RECREACIÓN	
R.1	Continuar limitando el acceso público a la recreación sólo para uso peatonal en el Sendero de Filoha Meadows.
R.2	Prohibir la pesca y vadear en la Reserva Natural de Filoha Meadows y las orillas del río Larson-Grange Loadout.
MANTENIMIENTO	
M.1	Mantener la ciega observación de Beaver View según sea necesario.
M.2	Explorar el potencial para enterrar servicios públicos.

Carbondale

Avalanche Creek

The Narrows

Penny Hot Springs / Wildlife View Area



133

Filoha Meadows Nature Preserve

Seasonal Closure
Oct. 1 - June 30

Crystal River



Filoha Meadows Trailhead

Pedestrian Access Only

Hwy. 133 Access

Bridge



Residential Units

Administrative Unit

To Redstone

County Rd. 3b
(aka Dorais Way)

Filoha Meadows Nature Preserve and Administrative Unit



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Relevant Studies

*[Filoha Meadows Wildlife
Monitoring Report \(2024\)](#)*

*[Filoha Meadows Rare Plant
Monitoring - 2021 Growing
Season \(2022\)](#)*

*[Filoha Meadows Rare Plant
Monitoring - 2020 Growing
Season \(2021\)](#)*

*[Filoha Meadows Vegetation
and Wildlife Monitoring Re-
port \(2019\)](#)*

*[Filoha Meadows Ecological
Condition Report \(2018\)](#)*

*[Filoha Meadows - Vegetation
and Stewardship \(2007\)](#)*

1. Introduction

Filoha Meadows Nature Preserve is perhaps the most unique property held within Pitkin County's Open Space and Trails Program. Even its name is unusual.

"Filoha" is the Ethiopian word for "hot water" – a reference to hot springs in the meadow that result from geothermal activity underlying the property. Former owners Dr. Bernarr Johnson and his late wife Dorothy chose the name after spending time in the African country before settling in the upper Crystal Valley.

The hot water is key to the presence of one of the few firefly populations in western Colorado, as well as four species of orchids, including the largest known population of the regionally rare stream orchid in Colorado. Beaked spikerush, a sedge that is known to exist in only a few areas of Colorado, also grows at Filoha Meadows. In addition, the property's geothermal activity results in snow-free meadows, providing critical winter range for bighorn sheep and elk. In spring, the vegetation and access to water provide production areas for many species. A host of other species also make use of the property's varied habitat year-round or seasonally.

Filoha exemplifies the Open Space program's mission of protecting areas with outstanding scenic, natural and wildlife habitat value.

Filoha Meadows Nature Preserve first opened to the public in 2010, a full seven years after the final purchase in a series of acquisitions to protect this stunning swath of the Crystal Valley – the 1.5-acre Penny Hot Springs (1991), 140-acre Hot Springs Ranch (2001) and 50-acre Filoha Meadows (2003).

Careful study of the property's ecological values and a lengthy process of adopting an initial management plan for Filoha preceded its public debut. The 2008 management plan established an unprecedented 9-month closure (October 1 through June 30) in response to the property's importance as a wildlife refuge. It is the longest seasonal closure of any Open Space and Trails property that allows public access. For three months a year, general access is limited to daylight hours on the former railroad grade that crosses the property.

Sixteen years after adoption of the original Filoha management plan, the property and its thermal

wetlands remain critically important habitat. Continued study of Filoha has reinforced the importance and unique nature of the open space and confirmed that limited public access and proper land stewardship are effective in maintaining it as such.

The 2024 Filoha Meadows Management Plan sets forth measures for the continued protection of this special landscape and expands in scope to address two additional parcels – the 9.4-acre Larson-Grange Loadout (acquired in 2008), located across the Crystal River from Filoha Meadows, and the 9.9-acre Administrative Unit (2019), located along County Road 3b (aka Dorais Way), south of Filoha Meadows Nature Preserve. The Administrative Unit provides administrative parking and access to Filoha, and contains two residential units that are addressed within the plan. Penny Hot Springs is now managed through its own plan, adopted in 2020, and is no longer addressed in the Filoha Meadows Management Plan.

1.1 HISTORY

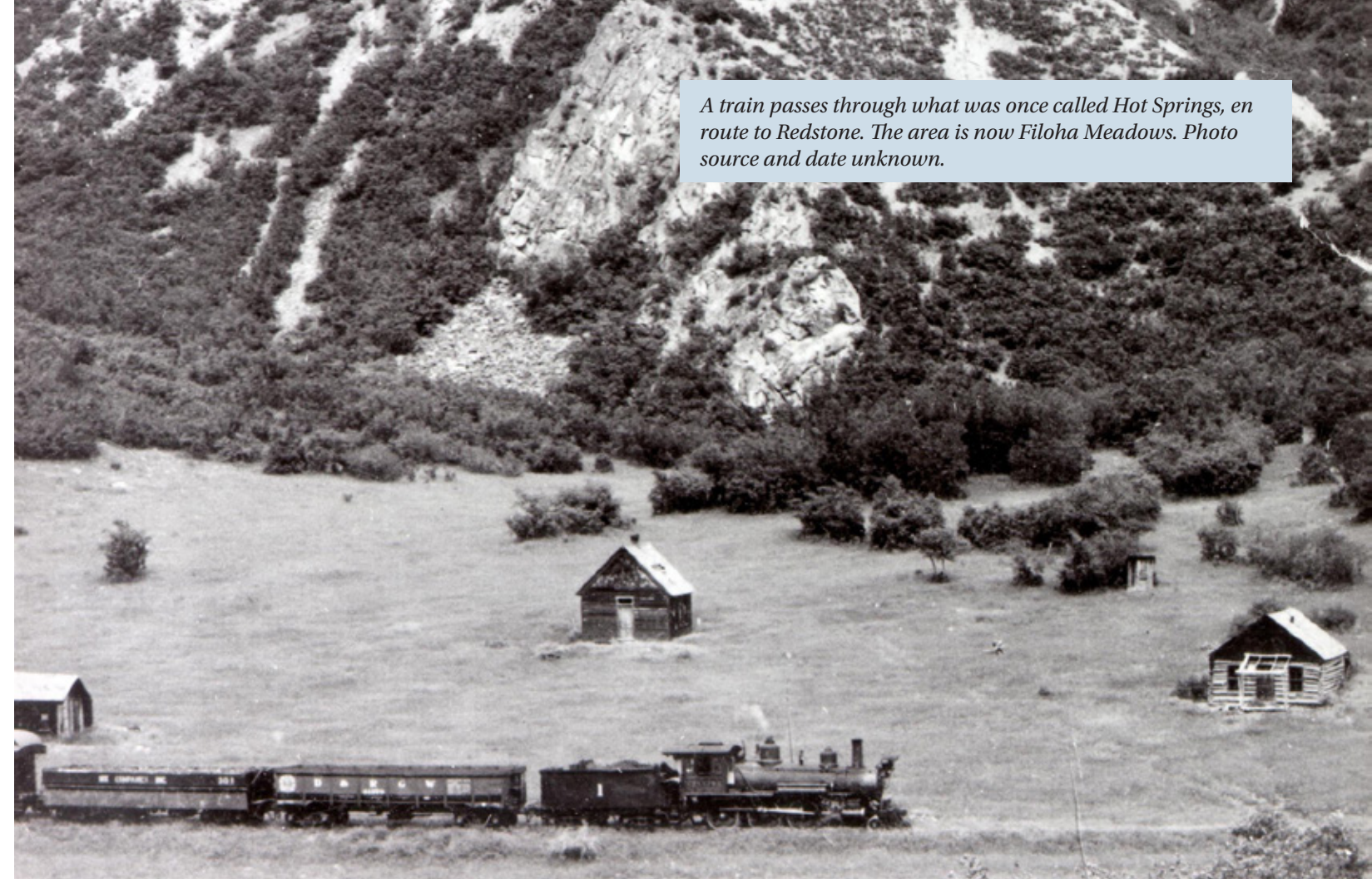
It is likely that Filoha Meadows' sunny exposure, hot springs and gentle river access have always attracted the interest of humans in the Crystal River Valley.

For centuries, indigenous peoples roamed the Crystal Valley. The Utes, specifically the Tabeguache (pronounced TAB-uh-wahch) band, generally ranged between the Uncompahgre, Gunnison, Roaring Fork and Colorado rivers, crisscrossing the Elk Mountains on familiar routes during their seasonal migrations.

In 1873, three years before Colorado gained statehood, famed geologist Ferdinand V. Hayden and his party found "one of the principal Indian trails in the (Colorado) Territory" running the entire length of the Crystal River.¹ Photographic documentation of Utes in the Crystal Valley, if it existed, may have been lost when Western photographer William Henry Jackson's mule, Gimlet, fell during Jackson's travels up the Crystal. Invaluable glass plate negatives were broken in the mishap.² Jackson photographed the landscape of the Rockies in the 1870s for Hayden's survey of the territories.

¹ Report of the USGS Survey of the Territories, 1874.

² Andrew Gulliford, *Garfield County, Colorado - The First Hundred Years 1883-1983*, (Gran Farnum Printing, Glenwood Springs, CO, 1983), 3.



A train passes through what was once called Hot Springs, en route to Redstone. The area is now Filoha Meadows. Photo source and date unknown.

While little physical evidence of the Crystal Valley's first inhabitants remains today, the settlers who displaced them discovered arrowheads and other artifacts up and down the valley³ and early pioneers recalled observing Ute encampments years earlier near what is now called Penny Hot Springs.⁴

The Utes' vast mountain territory encompassed numerous natural hot springs. Only hunting grounds and horses were more coveted.⁵ Yampah Hot Springs at what is now Glenwood Springs were regarded as sacred, but the springs along the Crystal River at Penny Hot Springs and in Filoha Meadows made the area an attractive locale for an encampment during their annual migration to favored hunting grounds in the Muddy Divide area over McClure Pass.⁶

The Crystal Valley was among the expansive lands of western Colorado that had been ceded to the Utes

³ Larry Meredith, *The Utes - Part 1*, historyredstone.org

⁴ Alvin Foote, *Some Facts and Conjectures About the Crystal River Valley in Colorado*, (A & T Co., New York, 1950), 33.

⁵ Charles S. Marsh, *People of the Shining Mountains*, (Pruett Publishing Co., Boulder, CO, 1982), 166.

⁶ Paul Andersen and Ken Johnson, *Elk Mountain Odessey*, (Redstone Press, Carbondale, CO 1998), 15.

in 1868. Roughly two-thirds of what would become Colorado was to be Ute land "for as long as the rivers might run and the grasses might grow," but the untold mineral wealth of the region doomed the territory to an altogether different fate.

The U.S. government ultimately failed to fulfill its obligations and, barely more than a dozen years later, forcibly expelled the Ute People from their land, driving them onto a reservation in Utah in 1881. Nonetheless, Ute Chief Colorow and some of his followers returned seasonally to camp near their beloved Yampah Hot Springs.⁷ Colorow and his band took advantage of a provision of an agreement that permitted the Utes to "hunt upon said lands so long as the game lasts and the Indians are at peace with the white people."⁸ Some said the chieftain returned to the Crystal Valley each autumn to hunt.⁹

With extirpation of the Utes from their native land, settlement of the Crystal Valley was quick to follow. By 1885, a county wagon road had been constructed

⁷ Lena M. Urquhart, *Colorow The Angry Chieftain*, (Golden Bell Press, Denver, 1968) p 39.

⁸ Ibid.

⁹ Larry Meredith, *The Utes - Part 1*, historyredstone.org

through Filoha Meadows, connecting Carbondale to what is now Redstone. One famous traveler on that early road was gunslinger Doc Holliday, who traveled from Glenwood Springs to Penny Hot Springs in the summer of 1887 in an effort to find some cure for his consumption.¹⁰ For a short time, Holliday and his companion, Kate Horony Cummings, stayed at a cabin owned by Alexander and Eva Horony near the springs. Alexander was Kate's brother.¹¹ Kate and Holliday returned to Glenwood Springs, where he died that November. The exact location of the Horony cabin is unclear, but a 1903 map of Redstone places the Horony residence on the north end of today's Redstone Boulevard.¹²

By 1893, the Crystal River Railway had been completed along the same general route as the wagon road, including the reach through Filoha, with a stop at Hot Springs. Travelers found Dan Penny's guesthouse and dining facility built close to the track, along with a bathhouse at the river that was separated for use by men and women.¹³

¹⁰ (Karen Holliday Tanner, Doc Holliday; A Family Portrait, (University of Oklahoma Press, 1998), 216.

¹¹ Ibid.

¹² <https://digital.denverlibrary.org/digital/collection/p16079coll39/id/1150/rec/2>

¹³ Dell McCoy, The Crystal River Pictorial, (Sundance Limited, Denver, 1972) 46.

In 1931, a block of marble cut for the Tomb of the Unknown Soldier rumbled down these tracks en route to the memorial's location at Arlington National Cemetery in Washington, D.C.¹⁴ The railroad served the coking operations at Redstone, as well as the coal mine at Placita, from 1900 to 1909, and transported marble quarried at Marble until 1942, when service was abandoned and the tracks were recycled during World War II. Crystal Valley resident Doug Farris recalled that, during the waning days of this rail line, a Ford Model A was fitted with wheels to haul small freight and mail. This vehicle was affectionately known as "pinkie."¹⁵

Sometime in the late 1880s, a miner named Harry Van Sycle¹⁶ began mining just above the meadow at the north end. A May 1890 map by Frank Monroe depicts Van Sycle's cabin on the east side of the Crystal River across from "Hot Springs," depicted on the west side.¹⁷ These notations correspond with the present-day pools at Penny Hot Springs and the cabin ruins across the river. His diggings opened up hot caverns, which achieved some fame via an 1899

¹⁴ Ibid.

¹⁵ Filoha Meadows Nature Preserve Management Plan (2008), Pitkin County Open Space and Trails, 8.

¹⁶ Some sources use the name "VanDycle."

¹⁷ Filoha Meadows Nature Preserve Management Plan (2008), Pitkin County Open Space and Trails, 8.

story in The Denver Times. The Crystal River Railway desired to construct a resort there, but nothing came of the plan.¹⁸ The mines were apparently reopened for a time during the thirties and early forties, producing lead and iron oxide.¹⁹

In 1939, the U.S. Geological Survey mapped a proposed dam site just below the Penny Hot Springs area. It is unclear whether planning for this dam went beyond an initial survey. The resulting reservoir would have flooded the entire meadow. (USGS map on file with Open Space and Trails.)

Joseph Grange acquired the meadow in the 1940s, and raised cattle and potatoes there. At that time, the Grange holdings included lands above Marble as well as Rock Bottom Ranch, now owned by the Aspen Center for Environmental Studies, and lands near Emma that have remained in the family to the present time. Kelly Grange inherited Filoha while his brother, Emil, ended up with the Emma property. Kelly and his cousin, Billy, both recall taking their draft horses up the Crystal to plow the potato field near the present-day Filoha beaver pond. When the plowing was done, the horses were released to find their own way back to Rock Bottom Ranch. They would reappear at their home feed trough a few days later.²⁰

During this same period, the McClean family reopened the mine above the old Van Sycle cabin, extracting ochre for paint pigment.²¹

Kelly Grange was later employed in the Coal Basin mines above Redstone, and built a house between the highway and the river during the 1960s. In 1978, he subdivided off the southern part of the ranch and sold it to Dr. Bernarr Johnson, who intended to utilize the hot waters for arthritis therapy. Dr. Johnson had practiced in Ethiopia, where "hot water" is called "Filoha," and his wife, Dorothy, so named their land. The name captured the public imagination, as reflected in Open Space and Trails' later decision to formally give this name to the entire meadow.

Johnson had tried also to acquire the old Penny Inn,

¹⁸ "Caves of Colorado," Lloyd E. Parris, Caves of Colorado, Pruett Press, Inc. 1973, 15.

¹⁹ Filoha Meadows Nature Preserve Management Plan (2008), Pitkin County Open Space and Trails, 8.

²⁰ "Memoirs of a river...up the Crystal," Crystal Valley Echo & Marble Times, Memoirs of a river...up the Crystal, March 2007, 12-14, and Filoha Meadows Nature Preserve Management Plan (2008), Pitkin County Open Space and Trails, 8.

²¹ Filoha Meadows Nature Preserve Management Plan (2008), Pitkin County Open Space and Trails, 8.

but the parcel lines were set by Grange to retain this. Sometime later, to Johnson's dismay, this structure was removed. Other historic structures at Filoha have collapsed or disappeared, including a bunkhouse that was still standing when a 1999 inventory of historic structures was undertaken. The survey also documented a collapsed clubhouse and small, collapsed shed. A deteriorating, unhewn-log barn remains standing on the open space. Small bathhouses that once dotted the meadow at other spots where the hot water rose to the surface have disappeared.²² A rustic, two-seater outhouse remains standing on the eastern edge of the open meadow.

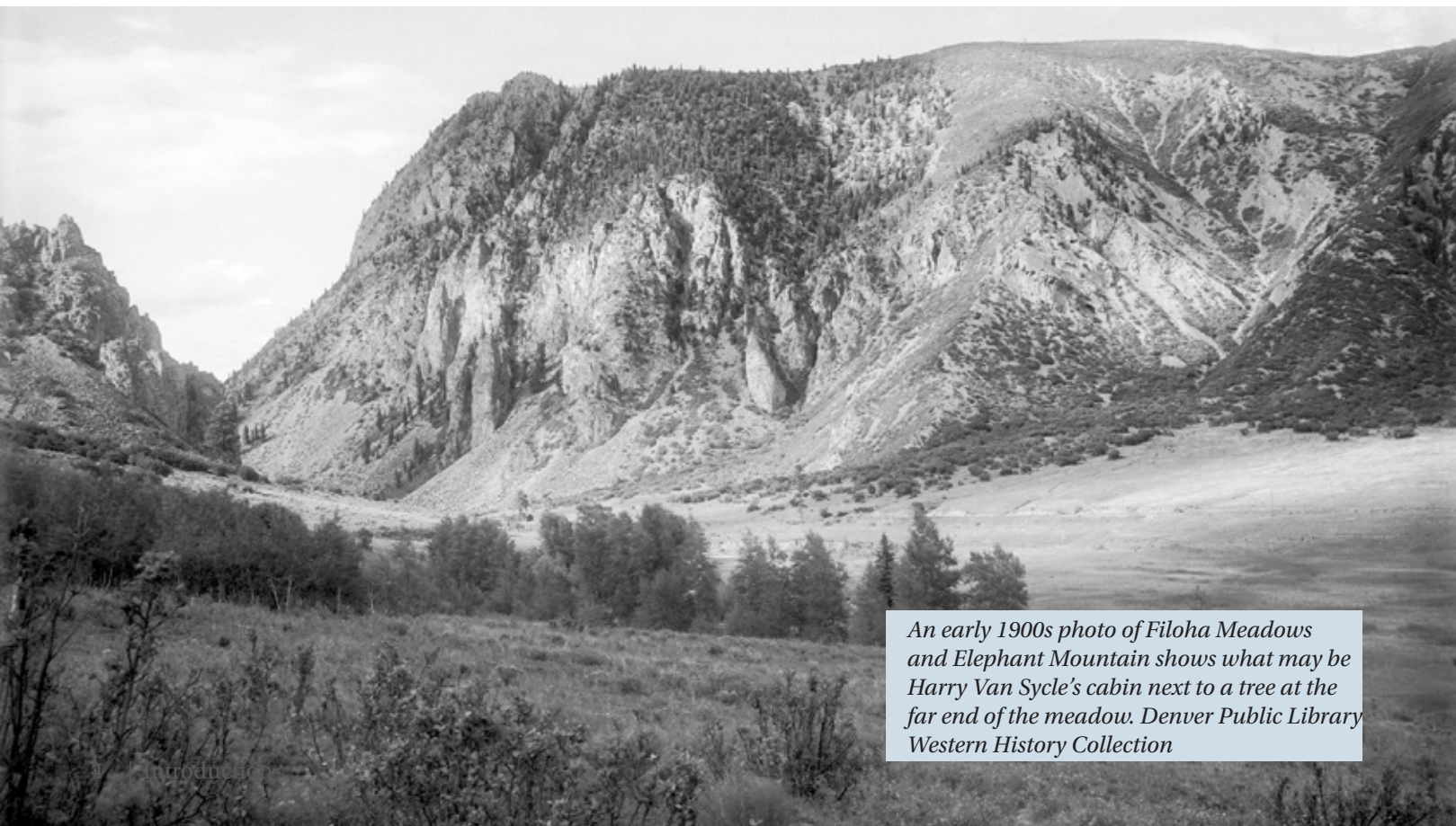
Another relic survives on the west side of the river, where an old cattle chute still stands within view of Hwy. 133 on the 9.4-acre Larson-Grange Loadout parcel, a part of the former Grange ranch that is now open space.

In the early nineties, Grange sold his remaining 140 acres to Gerry Greenwald. Around this time, Disney filmed "Tall Tale" at the site, building a faux homestead in the process. The 1995 release featured a tornado touching down in the meadow, among other cinematic feats. The movie was a flop, but it did result in the undergrounding of overhead utility lines in order to improve the aesthetics of the filming location – a scenic improvement that endures.

Also in the early nineties, Greenwald subdivided his land into four parcels, and sought development approvals for an equal number of luxury homes in the meadow plus three caretaker units and the ability for homeowners to own dogs. He called the proposed development Tabeguache Ranch, a nod to the land's original inhabitants. Greenwald also sought to place a new access bridge over the river in the vicinity of Penny Hot Springs to serve a portion of the development. Hot springs fans decried the bridge idea; wildlife advocates were alarmed by many aspects of the plan.

He eventually abandoned the development plans and listed the property for sale in 2000, thereby allowing Pitkin County to acquire it as permanent open space a year later. In 2003, the county acquired 50 acres from the Johnsons that encompasses a portion of the thermally heated wetlands on the open space. Filoha Meadows Nature Preserve was born.

²² Ibid.



An early 1900s photo of Filoha Meadows and Elephant Mountain shows what may be Harry Van Sycle's cabin next to a tree at the far end of the meadow. Denver Public Library Western History Collection

Filoha Meadows Timeline

“Filoha” is the Ethiopian word for “hot water” – a reference to hot springs in the meadow that result from geothermal activity underlying the property.

1885

A county wagon road was constructed through the meadow, connecting Carbondale to Redstone.

1893

The Crystal River Railway was completed along the wagon road, with a stop at Hot Springs.

1950

Eye witnesses recounted Ute seasonal encampments that occurred decades earlier in the meadow, during the Utes’ annual migration to hunting lands southwest of Redstone.

1990

OST Program founded.

1995

Disney released “Tall Tale,” filmed in part at Filoha Meadows before its purchase as open space. A faux homestead, including a water wheel, was made for the movie. Part of it still stands on a 2-acre parcel protected by a conservation easement.

2001

Development of luxury homes in the meadow at Hot Springs Ranch was proposed, but community members and wildlife advocates mobilized opposition. Development plans were abandoned and OST acquired the 140-acre Hot Springs Ranch.

2003

The 50-acre Filoha Meadows was acquired, encompassing a portion of the area’s thermal wetlands.

2005

Wildlife and vegetation resource studies first completed, regular monitoring and stewardship begins.

2008

The first management plan for the Nature Preserve established an unprecedented 9-month closure (October through June) in recognition of the property’s importance to wildlife during these seasons.

The 9-acre Larson-Grange Loadout was acquired.

Annual education programs began, providing a guided experience for the public to explore the biodiversity at Filoha Meadows.

2010

Filoha Meadows Nature Preserve first opened to the public.

2018

Active restoration of the riparian area at Filoha begins.

2019

OST acquired a 10-acre parcel in the Wild Rose subdivision, containing two residences and an bridge across the Crystal River, later named the Administrative Unit.

2020

Penny Hot Springs managed separately through the Penny Hot Springs Management Plan.

CCO

Area acquisitions of open space parcels and easements represent an investment of approximately \$5,400,000 for the benefit of wildlife and biodiversity, scenic preservation, as well as educational programs and visitors.

1.2 PROPERTIES AND EASEMENTS

Open Space and Trails has acquired roughly 210 acres to create Filoha Meadows Nature Preserve and the supporting Administrative Unit (Map 1). The following parcels are included in this management plan update.

FILOHA MEADOWS NATURE PRESERVE

Hot Springs Ranch

Year of Acquisition: 2001

Acreage: 140 acres

Purchase Price: \$2,250,000

Filoha Meadows

Year of Acquisition: 2003

Acreage: 50 acres

Purchase Price: \$813,484 invested by Pitkin County and a \$235,000 contribution from Great Outdoors Colorado (GOCO).

Larson-Grange Loadout

Year of Acquisition: 2008

Acreage: 9.4

Purchase Price: \$550,000

FILOHA MEADOWS ADMINISTRATIVE UNIT

Formerly known as the Wildin Parcel

Year of Acquisition: 2019

Acreage: 9.9 acres

Purchase Price: \$1,545,845

CONSERVATION EASEMENTS

Filoha Greenhouse

Holder: Open Space and Trails

Year of Acquisition: 2006

Filoha Meadows

Holder: Roaring Fork Conservancy

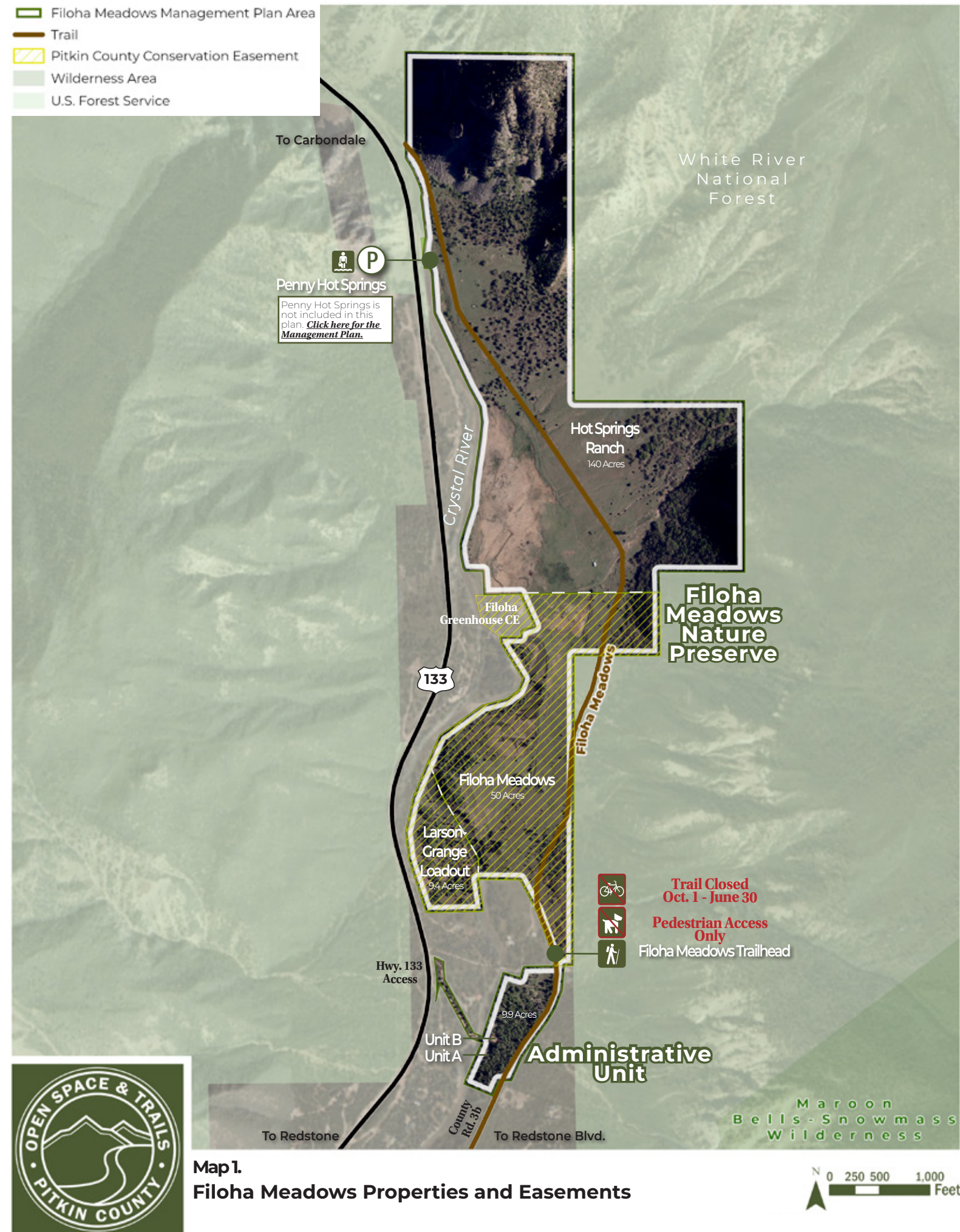
Larson-Grange Loadout

Holder: Roaring Fork Conservancy

1.3 ACCOMPLISHMENTS

This plan update builds on past accomplishments and celebrates the investments made to Filoha Meadows since the first plan, prepared in 2008. The initial plan set forth management actions for natural resources, recreation, outreach and education, monitoring and stewardship, and maintenance. With many of the management actions complete or underway, an update to the conditions of Filoha Meadows is further detailed in Section 3. Listed below are the highlights of achievements.

- Public recreational access has been limited to a single walking path with a seasonal closure from October 1 - June 30 for the benefit of biodiversity and wildlife.
- Noxious weeds have been controlled annually via integrated pest management, with notable improvements across all habitat types.
- Restoration of former agricultural areas on the southern end of the property was initiated.
- From 2004 to 2023, 150 programs were hosted and 2,791 participants were educated at Filoha by the Roaring Fork Conservancy.
- Numerous cross-boundary vegetation treatments have occurred since the 2011 approval of the Aspen-Sopris Wildlife Habitat Improvement Project – a large, multi-year U.S. Forest Service project to improve habitat and browse for bighorn sheep, mule deer, elk and other wildlife.



Map 1.
Filoha Meadows Properties and Easements

2008 to 2023 Accomplishments



Natural Resources

A seasonal closure to all public use is in place from October 1 - June 30 to benefit wildlife.

A Initiated restoration of former agricultural areas.

Through integrated pest management, annual control of noxious weeds that were extremely prevalent at the time of acquisition has greatly improved across all habitats.

B Groundwater wells installed and monitored annually to inform restoration efforts.

C Mechanical vegetation thinning projects have contributed to forest health and quality wildlife habitat and forage.

D Prescribed fire on adjacent National Forest lands.

E Removed all invasive tamarisk on the property.

Recreation

F Limited recreation from July 1 - Sept 30 to one walking path for the protection of biodiversity. No dogs allowed.

Outreach and Education

Roaring Fork Conservancy (RFC) led 150 educational programs between 2004 to 2023 which hosted 2,791 participants.

Monitoring and Stewardship

Mapped and classified plant communities at the Nature Preserve according to current U.S. National Vegetation Classification standards.

Conducted riparian and wetland habitat assessments, noxious weed surveys and a floristic inventory.

Conducted avian and mammal surveys at regular intervals.

G Conducted population surveys of the locally rare stream orchid at regular intervals.

H University research conducted on orchids and fireflies and submission of an orchid specimen to the North American Orchid Conservation Center.

Collaborated with U.S. Forest Service and Colorado Parks & Wildlife to monitor species of concern: bighorn sheep and Townsend's big-eared bat.

Maintenance

Installed signage to OST Signage Standards.

I Repaired bridge abutments and replaced decking/railing at the Administrative Unit bridge.

2. Existing Conditions

Filoha Meadows is one of the most biologically interesting properties in the OST system. The interspersed habitats, geothermal activity, unique plant communities and the wildlife that depend on these elements are unparalleled in the Roaring Fork Watershed. As a Nature Preserve, the primary purpose of Filoha Meadows is to protect the natural resources of the property while providing limited access that allows visitors to learn about the area and experience its natural beauty. The Nature Preserve's Administrative Unit supports the protection of Filoha Meadows and surrounding open spaces.

2.1 LOCATION AND CONTEXT

The parcels that make up the 210-acre Filoha Meadows Nature Preserve and Administrative Unit (jointly referred to as Filoha Meadows) were acquired over a period of nearly 20 years. Located approximately 2 miles north of Redstone and 13 miles south of Carbondale, Filoha Meadows comprises lands at the toe of the slopes that frame the Crystal River Valley, primarily on the east side of the Crystal River and visible to passersby on Hwy. 133.

SURROUNDING USES

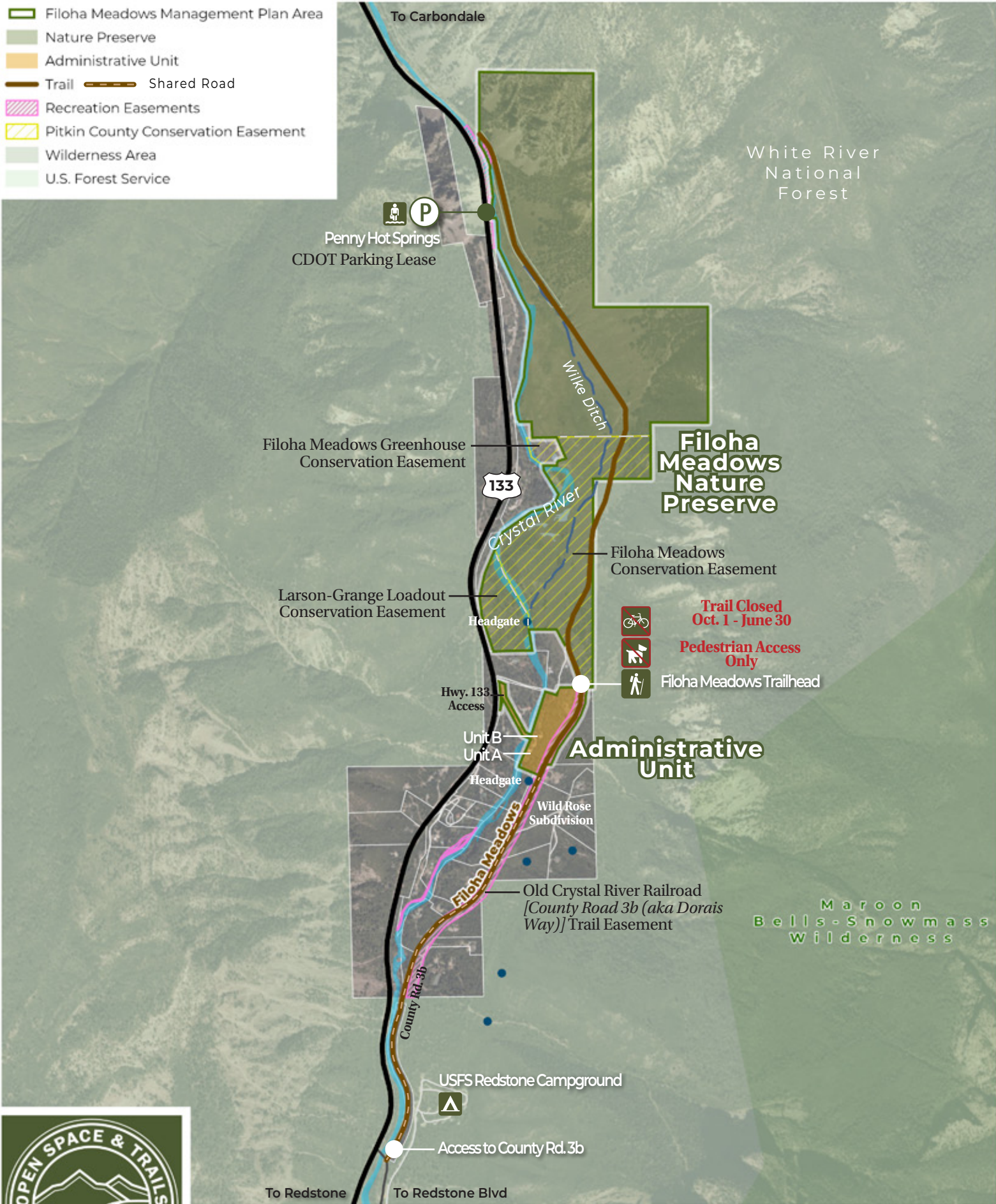
Filoha Meadows is adjacent to significant acreage of protected lands within the White River National Forest that contribute to the conservation landscape of the area. To the north and east of Filoha, the National Forest contains historic mining remains and connects to the Maroon Bells-Snowmass Wilderness Area. South of Filoha is private land and the Wild Rose Subdivision, zoned AR-2 Agricultural/Residential. West of the Crystal River and east of Hwy. 133 are two single-family homes on private lands zoned RS-30 Resource.



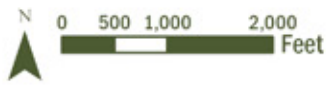
Filoha Meadows Nature Preserve at sunset.

Filoha Meadows is one of the most biologically interesting properties in the Open Space and Trails system.

As a Nature Preserve, the primary purpose of Filoha Meadows is to protect its natural resources while providing limited access that allows visitors to learn about the area and experience its natural beauty.



Map 2
Filoha Meadows Context Map



FILOHA MEADOWS NATURE PRESERVE

Hot Springs Ranch, Filoha Meadows and the Larson-Grange Loadout are collectively referred to as Filoha Meadows Nature Preserve. Hot Springs Ranch is the most visible parcel from Hwy. 133, beyond Penny Hot Springs, on the east bank of the Crystal River. The Filoha Meadows parcel is contiguous to Hot Springs Ranch, continuing south along the east side of the Crystal River. The Larson-Grange Loadout is located across the Crystal River from the Filoha Meadows parcel. Refer to Map 1 for properties and easements.

Property Access and Parking

To maintain the high level of protection for wildlife, Filoha Meadows is closed to public access for nine months of the year (October through June). This closure has not yet been applied to the Larson-Grange Loadout parcel. From July through September, public access is limited to the Filoha Meadows Trail, located on the former railroad grade that crosses the property. A dusk-to-dawn closure restricts public access to daylight hours. The Filoha Meadows trail is accessible by foot via County Road 3b (aka Dorais Way), a road that parallels the Crystal River and is accessed near the intersection of the highway and the north entrance to Redstone Boulevard. No public vehicle access is allowed on County Road 3b (aka Dorais Way) and no public parking is provided at Filoha Meadows.

OST holds an access easement, in addition to the conservation easement, from Hwy. 133 to Filoha Meadows Nature Preserve through the privately owned Filoha Greenhouse parcel on the east side of the Crystal River.¹

FILOHA MEADOWS ADMINISTRATIVE UNIT

This parcel is located on land zoned AR-2 Agricultural/Residential, south of the Filoha Meadows Nature Preserve. The parcel is not a part of the nearby Wild Rose Subdivision. While the bulk of the property lies between County Road 3b (aka Dorais Way) and the Crystal River, the driveway and primary access connects to Hwy. 133. The Administrative Unit boundary is mostly separated from the Preserve by residential parcels; it is contiguous with the southern boundary of Filoha Meadows for approximately 75 feet.

Property Access and Parking

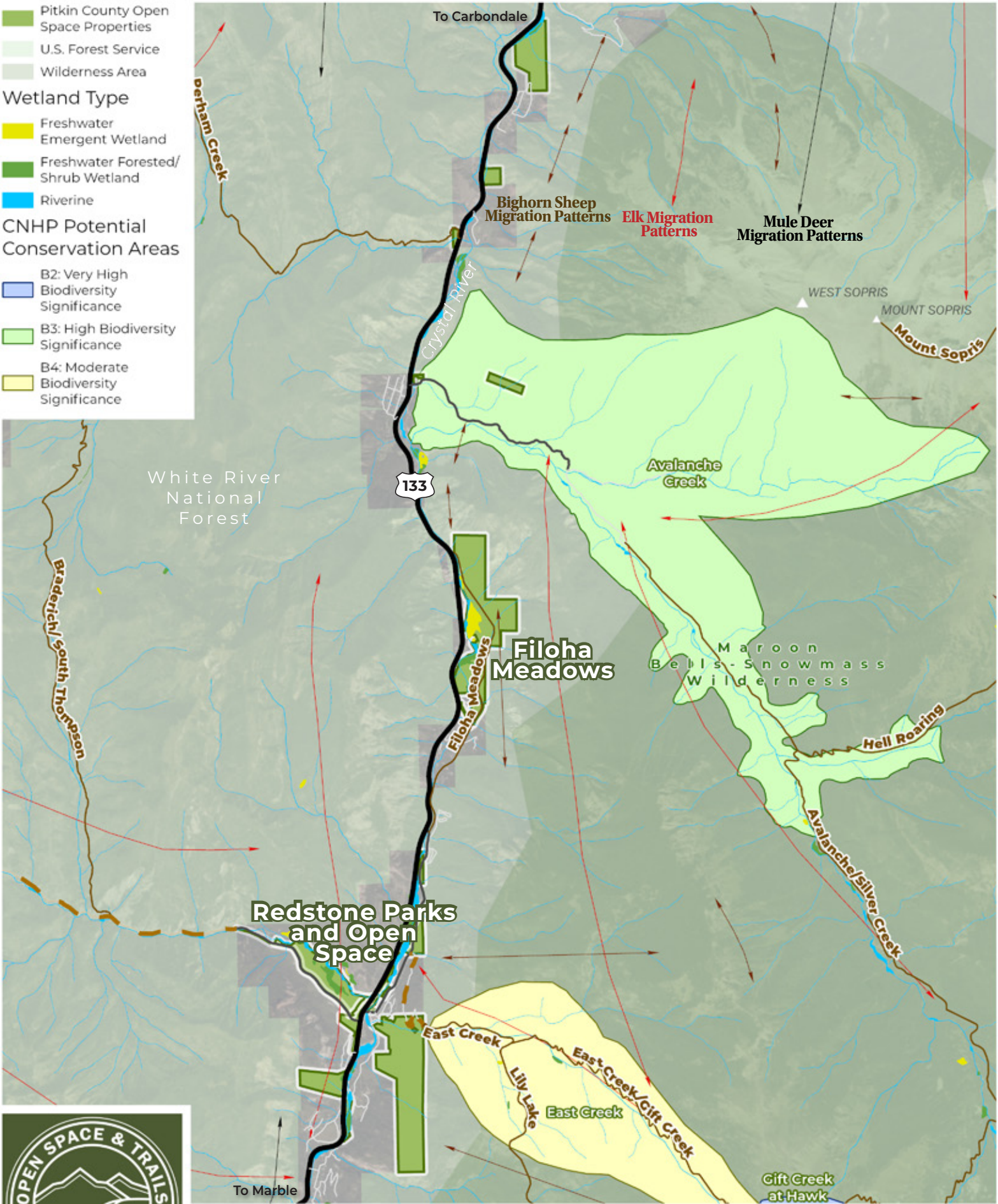
The Administrative Unit is accessed from Hwy. 133, with a driveway that crosses a narrow bridge over the Crystal River, providing access to the existing residential units.

¹ See Exhibit B to the Deed recorded at Book 368, page 733.

Table 1. Area Easements

Easement	Holder	Acres
Filoha Meadows	Roaring Fork Conservancy	44.0
Filoha Meadows Greenhouse (Includes Access)	Open Space and Trails	2.5
Larson-Grange Loadout	Roaring Fork Conservancy	9.4
Old Crystal River Railroad [County Road 3b (aka Dorais Way)] Trail Easement	Pitkin County	9.75
CDOT Parking Lease	Pitkin County	2.3

- Pitkin County Open Space Properties
 - U.S. Forest Service
 - Wilderness Area
- Wetland Type**
- Freshwater Emergent Wetland
 - Freshwater Forested/Shrub Wetland
 - Riverine
- CNHP Potential Conservation Areas**
- B2: Very High Biodiversity Significance
 - B3: High Biodiversity Significance
 - B4: Moderate Biodiversity Significance



Map 3.
Filoha Meadows Ecological Context Map

ECOLOGICAL LANDSCAPE AND CONTEXT

Filoha Meadows contains over a mile of the Crystal River, geothermal wetlands, open meadows, hillslopes of oak brush and steep rocky slopes at the base of Elephant Mountain. Elevations range from 6,900 feet along the river to 7,800 feet at the highest point of the Preserve on the hillsides, which then rise steeply to ridgelines over 9,000 feet above sea level. Filoha Meadows includes mature riparian areas along the Crystal River, a beaver pond and wetland fen complex, mineral-laden hot springs that support rare plant communities, remnant sagebrush shrublands, Gambel oak shrublands, pinyon-juniper woodlands and meadows. The rare plant communities and diverse wildlife supported by the interspersed habitat types are unparalleled in the Crystal River Valley. The geothermal activity in the area and its adjacency to vast tracts of the White River National Forest contributes to the ecological value of Filoha Meadows. The area is by no means pristine, however, with anthropogenic legacies of railroads, mining, settlement and agricultural activities.

2.2 NATURAL RESOURCES AND BIODIVERSITY

Filoha Meadows is managed primarily to protect biodiversity, wildlife habitat, natural processes and to promote ecological resilience. Intensive natural resource survey work was initially conducted in 2004-2007 in preparation for the 2008 management plan, and monitoring has continued alongside additional, focused studies. The area's uniqueness has attracted local attention as well as outside researchers from universities in and out of state, whose studies have been allowed on a case-by-case basis. OST field studies have continued regularly since 2008 to survey wildlife use of the property, document songbird and raptor presence, map plant communities, study rare plants, inform restoration and habitat enhancement projects, and to monitor general conditions on the property. For a complete list of studies completed to date, [see the property website](#).

GEOLOGY AND SOILS

Mount Sopris, the dominant mountain just 3.75 miles to the north and east, consists of an intrusion of igneous rock. The rock, called quartz monzonite,

also includes several dark minerals. This large, Tertiary intrusion is most likely still cooling deep below the surface. This may help explain the presence of the heated mineral springs in the wet meadows and also at the adjacent Penny Hot Springs, river-left of the northwest portion of the property. In the wet meadows fed by hot springs, minerals precipitate out into the topsoil causing nutrient and mineral enrichment locally. These conditions are uncommon and tend to support distinctive and/or rare plants and plant communities. The mineral-laden, hot-spring waters flow year-round, sustaining a good portion of the wetland plant communities. The geothermal warmth of the soils enables insect larvae to survive over winter and likely is the key to supporting the firefly population for which Filoha is locally famous. Additionally, the heat melts snow in the winter, exposing forage for large mammals such as the deer, elk and bighorn sheep that can all be seen throughout the winter.

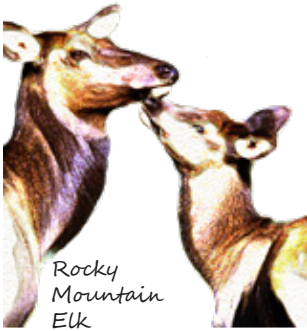
The rocky outcrops and talus areas on the northern end of the property support a unique suite of plant species, provide dramatic scenic relief to the landscape and provide critical habitat for bighorn sheep. The sheep depend on this exposure for safety from predators, both as resting areas and as a travel corridor down to the grassy meadows and river. The assemblage of these habitats are intermittent and infrequent along the Crystal River corridor.

Upland soils are highly unstable on some of the slopes above and within Filoha, and there have been numerous mud and rock slides here, as there have been in other parts of the upper Crystal River Valley. Soils in degraded pasturelands were tested in 2023. Results showed these areas were lower in organic matter and microbially active carbon, and received an overall lower soil health score than nearby reference areas (undisturbed, native plant-dominant areas).

Soil samples were also taken in the beaver pond wetland complex in 2017. The results for this soil indicate that the area does contain Histosol soils to depths greater than 16 inches, meaning that it is an old-growth wetland considered a fen. Specifically, two of the soils analyzed in the wetland contained a peat layer 21 inches thick! Water levels were observed either at or within 12 inches of the soil surface in late September, indicating that the hydrological functioning of the fen appears to be intact.

Filoha Meadows Biodiversity

Did You Know?



Rocky Mountain Elk

Birds and Bats

72 bird species have been detected. Alongside local bats, many of these bird species depend on the numerous insects at Filoha.



Townsend's Big Eared Bat



Mountain Bluebird



Fireflies



Monarch Butterfly

Rare Plants

Mineral-laden hot springs support rare plants, including: beaked spikerush, stream orchid and canyon bog orchid.



Stream Orchid

Animals

At least 13 mammal species occur. The interspersed habitat types and connectivity to the National Forest support diverse wildlife.



Rocky Mountain Bighorn Sheep

Artwork provided by DHM Design.

Filoha Meadows Nature Preserve is managed for ecological integrity, education and limited recreation. For the protection of wildlife, Filoha Meadows Trail is closed from October 1 to June 30 and is closed to dogs.



What makes Filoha Meadows unique?



The unique quilt of habitats makes Filoha Meadows one of the most important natural areas in the Crystal River Valley.

Filoha Meadows protects and connects diverse habitats that support local biodiversity. It includes over a mile of the Crystal River, geothermal wetlands, a beaver pond and fen wetland complex, meadows, sagebrush shrublands, oak brush hillsides and rocky slopes. Human uses including railroads, mining and agricultural activities have left their marks on the landscape. Despite its historical use, rewilding efforts, forest treatments and riparian restoration projects help enhance native plant communities and improve habitat for bighorn sheep, mule deer, elk, birds, insects and all wildlife.

Bighorn Sheep

Filoha Meadows is a hotspot for wildlife and well known for its winter wildlife viewing opportunities. This area is particularly important for bighorn sheep, as it provides crucial habitat during the winter and transition periods. The meadows provide good forage and mineral hot springs, and connect to rocky cliffs that offer direct escape routes for the sheep to avoid predators. The Snowmass West herd has seen a significant decline in numbers over the past few decades, and OST works with agencies and conservation groups to address this issue.



The Snowmass West bighorn sheep herd lives in a large area that ranges from the top of Mount Sopris all the way to Marble.



The stream orchid can be as tall as two and a half feet and grows near hot springs at Filoha.

Orchids and Fireflies

Geothermal activity at Filoha Meadows is key to the presence of one of the few firefly populations in western Colorado, as well as four species of orchids, including Colorado's largest known population of the regionally rare stream orchid. Overall, the orchid population appears to be stable; ongoing study provides important information to monitor and manage changes over time.



Fens, or "old-growth" wetlands, are a special type of wetland that contain organic-rich soil known as peat and can take thousands of years to form.

Monarch Butterfly

Three federally protected or candidate species - Canada lynx, gray wolf and monarch butterfly - may exist on or near Filoha. During a 2022 wildlife survey, Monarch butterfly larvae were spotted for the first time. This discovery highlights the significance of regular monitoring, and it led to adaptive management measures including a milkweed reseeding effort in 2023 to create a habitat for this vulnerable species.



In early July, a milkweed bloom provides ideal habitat for monarch butterflies (this is a monarch caterpillar) and other pollinators.

The USDA Web Soil Survey was consulted for general soil information in the area. The gentler slopes that comprise the majority (73%) of Filoha Meadows are characterized by a thin layer of topsoil over cobbly loam. The parent rock for this area is alluvium derived from igneous and sedimentary rock. The steeper slopes at the northern end of the property near Elephant Mountain are a mix of rocky outcrops and sandy loam/gravel derived from weathered sandstone, comprising 20% of the property. The easternmost section of the property with steeper slopes rising to the White River National Forest has a gravelly loam soil base derived from sedimentary rock.

WATER RESOURCES

Geomorphology

The Crystal River as it flows through or adjacent to Filoha Meadows follows the moderately sloped valley floor and meanders between the residential development and Hwy. 133 to the west and the embankment of the Preserve to the east. The Crystal River cuts through a steep-sided valley and is often constrained by the highway and/or development, but the valley bottom widens at Filoha Meadows. It is one of the few places along the length of the upper Crystal River Valley where the river meanders and has existing floodplain connectivity. Past practices of cattle grazing impacted and denuded riparian areas, leaving some sections of riverbank highly susceptible to erosion. Beaver dams are present in the area and clearly have also influenced the geomorphological and ecological conditions of this corridor.

Today, the river exhibits traits associated with healthy stream systems within the Nature Preserve. To the south, as it flows into the Preserve, the river is characterized by braided, unconfined floodplain segments where the channel meanders are more dynamic. These unconfined channels support wider riparian zones and a greater degree or morphological complexity than in many other locations along the Crystal River. Toward the northern end of Filoha, the river straightens somewhat and, closer to Penny Hot Springs, there is evidence of some streambank and channel degradation due to the highway and historic development at the hot springs.

Both the Crystal River Stream Management Plan

(2016) and the Stream Health Initiative (2007) conducted in-depth, reach-by-reach analysis of the Crystal River, assessing impairment and/or modification of various stream health elements (flow, structure, riparian vegetation, etc.) Details can be found in those documents. Generally, the river stretch through Filoha Meadows shows signs of modification, but is not severely degraded in any category.

River and Wetland Resources

The Crystal River is a tributary to the Roaring Fork River that begins as snowmelt above the Town of Marble. This perennial river is a freestone, or free-flowing river – one of the few remaining in the state. The U.S. Forest Service has determined that the undammed nature of the Crystal River, combined with its lack of transbasin diversions, make the upper 39 miles (from the headwaters to the Sweet Jessup diversion) eligible for designation and protection as a Wild and Scenic River under the National Wild and Scenic Rivers Act of 1968. The Pitkin County Healthy Rivers Board is currently working with the Crystal River Valley community in a collaborative planning process which will measure community support for protecting the Crystal River, identify shared values related to the river, and create a locally customized river protection proposal specific to the Crystal.

Baseline winter flows average around 50 cfs, while summer flows are more variable, based on winter snow accumulation and spring-summer rains. Peak runoff has typically occurred in early June, at around 1,500 cfs, but it can vary significantly. The river's flow is altered by upstream in-basin diversions, but these impacts are minimal compared to diversion impacts farther downstream. The Colorado Water Conservation Board has an in-stream flow right for this stretch of the Crystal River of 40 cfs (October 1 – April 30) and 80 cfs (April 1 – September 30).

There are several small, ephemeral drainages within Filoha Meadows connecting to the primary riparian area along the Crystal River corridor. Beaver-enhanced wetlands on the southern portion of the property provide a critical water storage function as well as a habitat feature. Not only does this dam complex maintain extensive wetland habitat, these riparian and wetland areas are also crucial for recharging groundwater and providing natural surface water storage that is discharged later in the season, helping to maintain Crystal River base flows.

Implementation Update

Riparian Restoration

An area at the southern end of Filoha Meadows Nature Preserve was identified for riparian restoration to help reconnect the riparian canopy and restore native plant diversity to the old pasturelands adjacent to the Crystal River. Careful planning and design sought out the establishment of native woody vegetation, with special consideration given to protecting and enhancing the valuable Rocky Mountain elk and bighorn sheep habitat. Three restoration pods have been created in response to heavy herbivory and a disconnected water table restricting the natural recruitment and establishment of woody native species in the floodplain. The pods are defined by 8-foot-high herbivory protection fencing, but are spaced out to allow animal movement to and from the river. A temporary irrigation system was installed to water two of the pods that were seeing the least natural recruitment. In 2022, over 100 woody shrubs and trees were planted to increase local plant diversity and annual noxious vegetation control has been conducted by OST within the restoration zones. The protective herbivory fencing has been extremely effective so far and seems to be the most dependable way to determine whether native plants are establishing themselves within the project area. The fencing, along with additional irrigation, has encouraged significant plant growth and establishment compared to areas outside the pods. In some species, sapling regeneration has occurred from existing root stock.



According to the *Colorado Wetland Inventory*, approximately 15 acres of emergent/herbaceous wetlands and 5 acres of shrub-scrub wetlands are found at the Preserve. A small area near the beaver pond wetland complex contains Histosol soils to depths greater than 16 inches and thus is considered a fen.² Fens are rare and ecologically significant wetlands in Colorado and the Rocky Mountains and are colloquially known as “old-growth” wetlands because they can be thousands of years old. They are ancient ecosystems (potentially 8,000 to 12,000 years old). Even though they occupy a small percentage of the landscape, they provide important headwater quality functions, including water storage, wildlife habitat, biodiversity and, importantly, fens serve as long-term sinks of atmospheric carbon dioxide since organic matter accumulates faster than it decomposes in them.

The Crystal River as it flows through Filoha Meadows is fairly wide and shallow and thus does not have excellent fish habitat. Rainbow trout, brown trout, mountain whitefish and, likely, sculpin are the main species of fish found here. The streambed is cobbly and not very embedded, creating decent habitat for macroinvertebrates though no sampling has been done on site to date.

Water Rights

The primary water right upon purchase of the Hot Springs Ranch was the Wilke Ditch water right of 1.2 cfs. OST installed an irrigation system in 2021 to efficiently utilize the water rights; the system is adaptable and is currently used to bring water to the old agricultural terrace in the summer months.

The property west of the Crystal River and east of Hwy. 133 retained rights to hot springs located on Filoha to heat their property. There are still wells and piping that provide hot water to the private property and it was a condition of purchase that this infrastructure will remain on the property.

VEGETATION

Filoha Meadows includes noteworthy vegetation resources. A portion of the landscape consists of intact, native plant communities typical of the surrounding area, as well as wetlands and plants that are unusual in the watershed and state. Other portions of the property were hayed, grazed or used for potato cultivation for many years prior to

² 2017 Report

acquisition by OST and its subsequent designation as a nature preserve. The effects of grazing are widespread on the property, with non-native pasture grass being introduced and noxious weeds proliferating. Much of the vegetation restoration focus since the 2008 management plan has been on areas impacted from past land-use activities and fire suppression.

Vegetation surveys were most recently completed in 2018. A total of 198 vascular plant species were observed at the Filoha Meadows Nature Preserve. These include 10 species of trees, 27 shrubs, 48 perennial graminoids, 83 perennial forbs, four fern allies, one cactus species, 23 annual/biennial forbs and two species of annual graminoids. Of the total, 46 or 23% are non-native and 17 species are Colorado State-listed noxious weeds. The floristic quality assessment show that Filoha has a rich floristic diversity across all its habitats (FQA mean C=4.1 for all species and 5.3 for native species).

Plant Communities

Wetland and Riparian Plant Communities

Riparian and wetland communities make up a large portion of the western portion of Filoha Meadows. These productive sites provide varied habitats for numerous wildlife species, birds and ideal conditions for four species of orchid. The riparian area is dominated by narrowleaf cottonwood and blue spruce with thinleaf alder. Other common plants observed include shrubs such as Woods’ rose and dogwood, and herbaceous plants including starry false Solomon’s seal, roundleaf wintergreen, field horsetail and goldenrod. Non-native pasture grasses are also common in some areas. Several riparian areas on the property are degraded and relatively devoid of structural diversity. This is due to an absence of woody vegetation as a result of past land clearing for agricultural production and browse pressure from ungulates. The presence of some mature trees, regenerating shrubs and standing dead snags provides valuable habitat complexity.

There are both fresh water and hot, mineral, spring-fed wetlands. A good portion of the calcareous wet meadows consist of beaked spikerush, a rare species in the state. Approximately 15 acres are currently dominated by beaked spikerush with many more acres also harboring pockets of this species. Other wet meadows consist predominantly of bulrushes, sedges, willows and common reedgrass, each

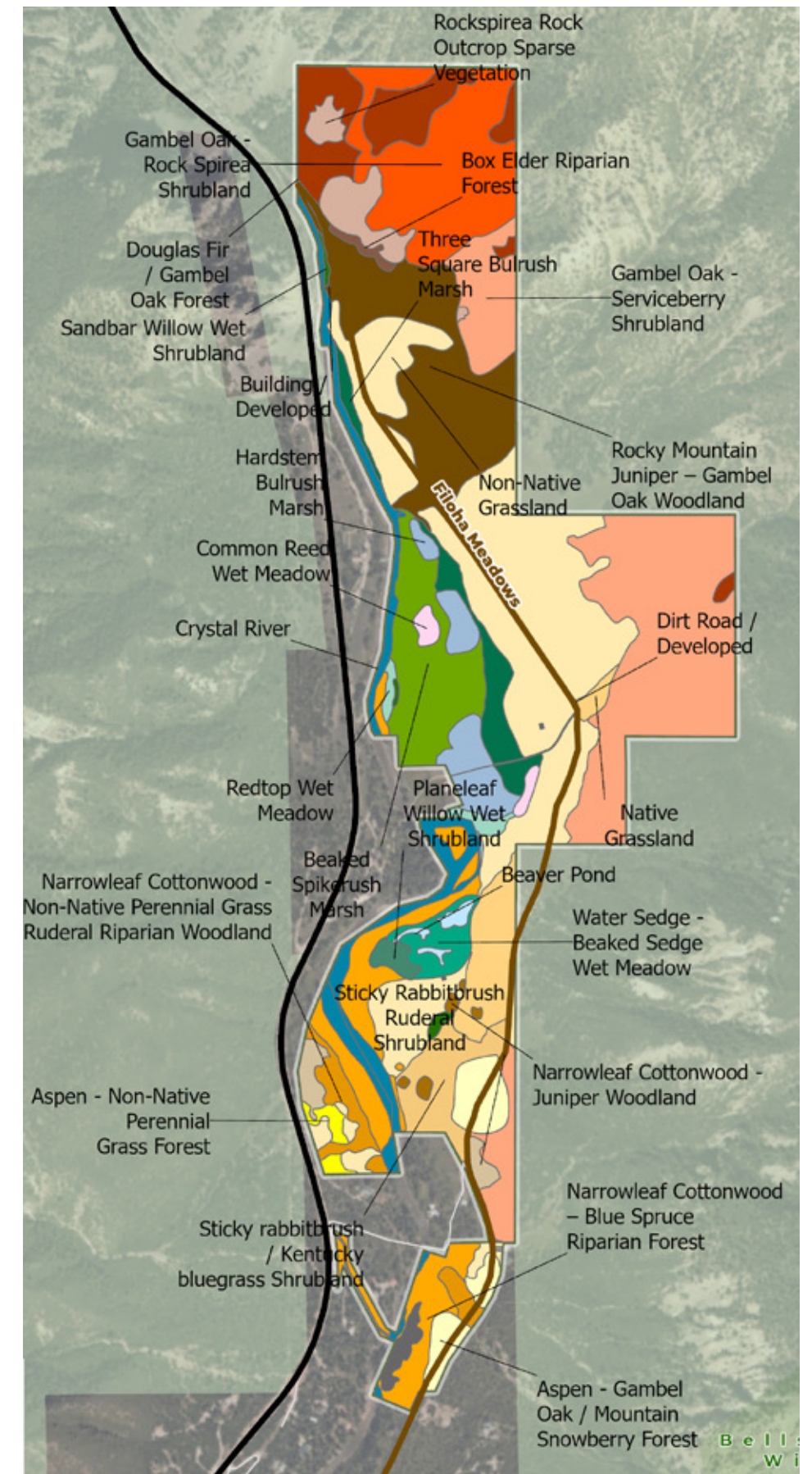
typically mixed with at least some beaked spikerush. The vegetation of the beaver pond/fen complex is dominated by beaked sedge, a common peat-forming sedge of the Rocky Mountains. Less desirable plants include broadleaf cattail, which can form dense monocultures and outcompete other plants; reedtop, a non-native pasture grass; and noxious weeds such as Canada thistle and oxeye daisy.

Shrubland Communities

Mixed montane shrublands dominated by Gambel oak provide essential forage for deer, elk and bighorn sheep, berries and nesting sites for songbirds and blue grouse, as well as acorns and calories for bears. Winter forage in these areas can be essential for area ungulates and is critical winter range for elk and bighorn sheep. Much of the Gambel oak on and adjacent to the property was of a single age class and over-mature or decadent (i.e., old and degenerate growth indicating a general lack of vigor and vitality). Two vegetation mastication projects since 2008 have addressed this decadence and reintroduced disturbance to patches of this Gambel oak shrubland. See Management and Implementation Highlights for additional details on this project.

Forest Communities

Pinyon- and juniper-dominated woodland occupies substantial acreage at the north end of Filoha Meadows. The pinyon-juniper woodland at Filoha Meadows is in excellent condition and, largely due to its location on steep, rocky slopes, is relatively intact with few invasive species. This plant community type has



Map 4. Filoha Meadows Plant Communities



Wetland and riparian communities

been encroaching into the open meadow, reducing foraging zones and obstructing predator escape sightlines for bighorn sheep. OST conducted thinning in this forest type in 2014 and 2023 to maintain habitat heterogeneity for the benefit of wildlife.

Rocky Mountain juniper intermingles with Gambel oak on three south/southwest-facing, sloped, outwash areas where soils are rockier and less developed. Upper, steep, rocky cliffs and hillsides support pockets of Douglas fir intermixed with Gambel oak and oceanspray. The contrast between the vegetation structure of the woodland and the adjacent open meadows provides a mosaic of vegetation that is a critical element keeping the bighorn sheep so dedicated to this area as winter habitat.

A small aspen stand on the southern end of the property is in poor condition with little understory. The poor condition is likely a combination of heavy browse pressure from large numbers of elk that continue to use the property throughout the year and drought/climate change impacts.

Grasslands

The plant community with the greatest area at Filoha is non-native grassland. This habitat type on Filoha supports the lowest species richness of all of the habitats found on the property. The upland grasslands provide very low structural diversity, both horizontally and vertically. However, native forbs and grasses have been increasing in cover over the years. Additionally, the landscape-scale interspersions of the grasslands at Filoha with the extensive Gambel oak-dominated montane shrublands, aspen forest and cliff/rock habitat on the property and adjacent, extensive White River National Forest, results in outstanding year-round habitat for elk and winter habitat for Rocky Mountain bighorn sheep. The major threats to these anthropogenic grassland habitats at Filoha are pinyon-juniper encroachment and cheatgrass and/or Japanese brome infestations.

Threatened, Endangered, Sensitive and Rare Plants

Four species of rare plants currently tracked by the Colorado Natural Heritage Program occur in the wetland meadows in the vicinity of the hot springs. These include beaked spikerush (*Eleocharis rostellata*), giant helleborine orchid (*Epipactis gigantea*), canyon bog orchid (*Platanthera tescamnis*, syn=*Platanthera sparsiflora*) and lesser paniced sedge (*Carex diandra*). Noxious weed populations in the vicinity of the rare plants appear to be their greatest threat. Both Canada thistle and oxeye daisy occur intermixed with portions of the giant helleborine and canyon bog orchid populations. Experimental studies investigating the use of biocontrols, mechanical control and careful use of a selective herbicide have been completed onsite to inform best management practices to protect these rare plants. Populations of the stream/giant helleborine orchid are being monitored by OST and appear to be stable and healthy. See the 'Implementation Update' for additional details on this project.



Shrubland communities



Forest communities



Grasslands

Implementation Update

Stream Orchid Monitoring

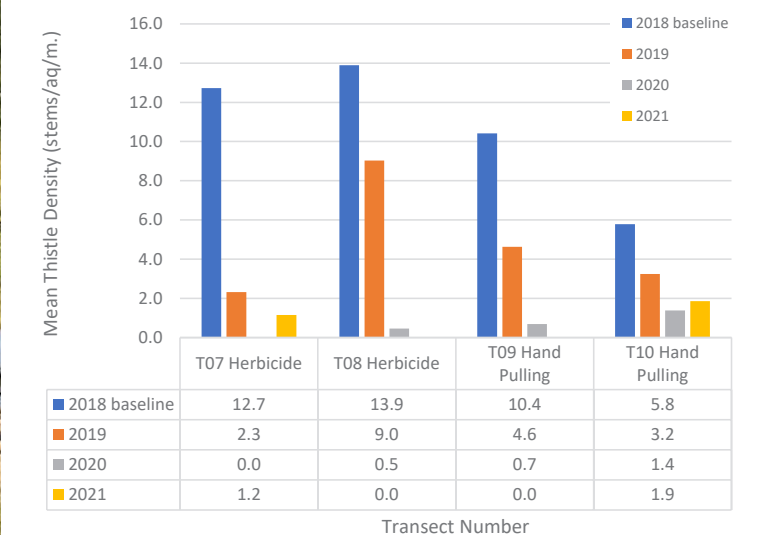
The stream orchid or false helleborine orchid (*Epipactis gigantea*) is a critically imperiled plant that occurs at Filoha Meadows Nature Preserve. Four years of study have been done as part of a long-term monitoring study tracking annual population trends of this orchid. In 2021, the density of the overall orchid population at Filoha was slightly less than in 2019 and 2020, but still higher than 2018. Orchid density appears to be highly correlated with precipitation patterns the preceding winter and spring, with lower densities observed in hot, dry years. However, spacial variation in orchid density occurs across the landscape with some locations having higher densities than others. Overall, the orchid population at Filoha appears to be stable and the culmination of this four-year study provides important baseline information upon which future monitoring can be compared.

Part of the stream orchid monitoring program has been monitoring the effects of Canada thistle (*Cirsium arvense*) control methods (biological, mechanical and chemical) on this rare orchid. A previous monitoring report (PeakEco, 2021) documented that the biological control agent, a rust fungus named *Puccinia punctiformis*, could not be established at Filoha due to the thick thatch inhibiting the growth of the fall rosettes of Canada thistle, which are important for inoculation. Therefore, the monitoring for the rust fungus was terminated after 2020. The 2022 study also documented the lack of any adverse effects to the stream orchid density from Canada thistle control efforts that included both selective herbicide and diligent mechanical (hand-pulling) treatments. See Table 2.

In 2023, a full-day community volunteer event with Roaring Fork Outdoor Volunteers applied results of this study. A focused Canada thistle pull resulted in the removal of over 800 gallons of Canada thistle vegetation from the orchid occurrence zones.



Table 2. Density of Canada Thistle 2018- 2021



Volunteers meticulously pull noxious weeds at Filoha to benefit rare orchids

Noxious Weeds

Seventeen species of noxious weeds were documented during the 2017 ecological assessment or were previously reported to be present at Filoha (EM Ecological, 2007). The Colorado Noxious Weed Act directs the Department of Agriculture to develop and implement management plans for all List A and List B noxious weed species. There are no List A noxious weeds known to occur here, however, there are 10 List B species, seven of which are slated for elimination. The other three species (Canada thistle, oxeye daisy and houndstongue) are slated for suppression. There are also seven List C species at Filoha, which should also be monitored and controlled. Of particular concern are the List C annual graminoid species – cheatgrass and Japanese brome – invasive grasses that occupy the same ecological niche. See Table 3.

WILDLIFE

Filoha provides habitat for a variety of wildlife species, some of which are permanent residents while others pass through the area on an occasional or seasonal basis. The interspersed of the biotic (e.g., conifer woodland, grasslands, mixed montane shrubland, riparian forest, juniper woodland and wetlands) and abiotic (e.g., scree, talus, cliffs and surface water) habitat types and the integrated adjacent habitat types on Filoha result in a relatively rich wildlife community. This habitat diversity provides an abundance of food, cover and reproduction sites. In addition, the importance of Filoha to wildlife results from its landscape

connection to the undeveloped lands of the White River National Forest. Filoha is situated such that it provides an important ungulate migration link across Hwy. 133 and between summer and winter ranges on the National Forest.

The strict closure of the Preserve to human presence for 9 months of the year continues to be an effective management strategy that benefits all wildlife, but especially species that are sensitive to human activity and/or depend on this area during fall, winter and spring.

Comprehensive mammal and bird surveys were most recently completed in 2021-2022. A total of 13 mammal species and 19 total wildlife species (not including songbirds) have now been detected at Filoha. In 2022, four species were detected for the first time: long-tailed weasel, moose, Pacific marten (formerly American marten) and bullsnake.

Mammals

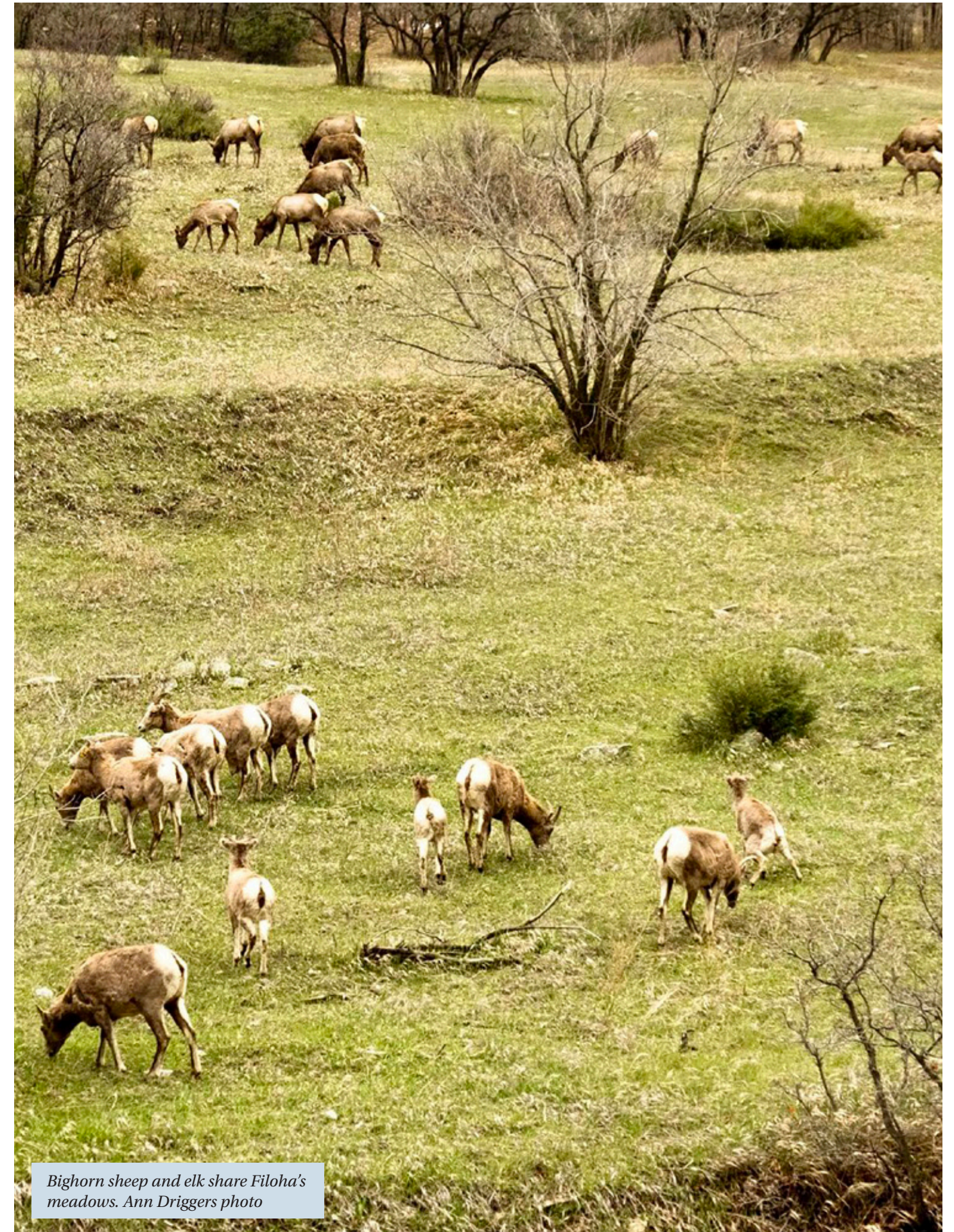
Filoha Meadows is a hotspot for wildlife and particularly well known by locals for the wildlife viewing opportunities during the winter months. The Penny Hot Springs pullout on Hwy. 133 is an excellent location from which to view elk and bighorn sheep grazing or bedded down in the security of Filoha Meadows Nature Preserve. Here, they are protected from humans with a strict wildlife closure and conveniently separated from the highway and human activity by the Crystal River.

A rapid wildlife habitat assessment was conducted in 2017, and a comprehensive wildlife survey was

Table 3. Colorado Listed Noxious Weeds at Filoha Meadows Nature Preserve

NAME	NOXIOUS WEED LIST
Trees and Shrubs	
<i>Tamarix parviflora</i> / Tamarisk	B
Perennial Forbs	
<i>Cichorium intybus</i> / Chicory	C
<i>Cirsium arvense</i> / Canada Thistle	B
<i>Convolvulus arvensis</i> / Field bindweed	C
<i>Leucanthemum vulgare</i> / Oxeye Daisy	B
<i>Linaria vulgaris</i> / Toadflax	B
<i>Potentilla recta</i> / Sulphur cinquefoil	B
<i>Tanacetum vulgare</i> / Common tansy	B

NAME	NOXIOUS WEED LIST
Annual/Biennial Forbs	
<i>Arctium minus</i> / Lesser burdock	C
<i>Carduus acanthoides</i> / Plumeless thistle	B
<i>Carduus nutans subsp. macrolepis</i> / Musk thistle	B
<i>Cirsium vulgare</i> / Bull thistle	B
<i>Cynoglossum officinale</i> / Houndstongue	B
<i>Erodium cicutarium</i> / Redstem stork's bill	C
<i>Sonchus arvensis</i> / Field sowthistle	C
<i>Verbascum thapsus</i> / Mullein	C
Annual Graminoids	
<i>Anisantha tectorum</i> / Cheatgrass	C



Bighorn sheep and elk share Filoha's meadows. Ann Driggers photo

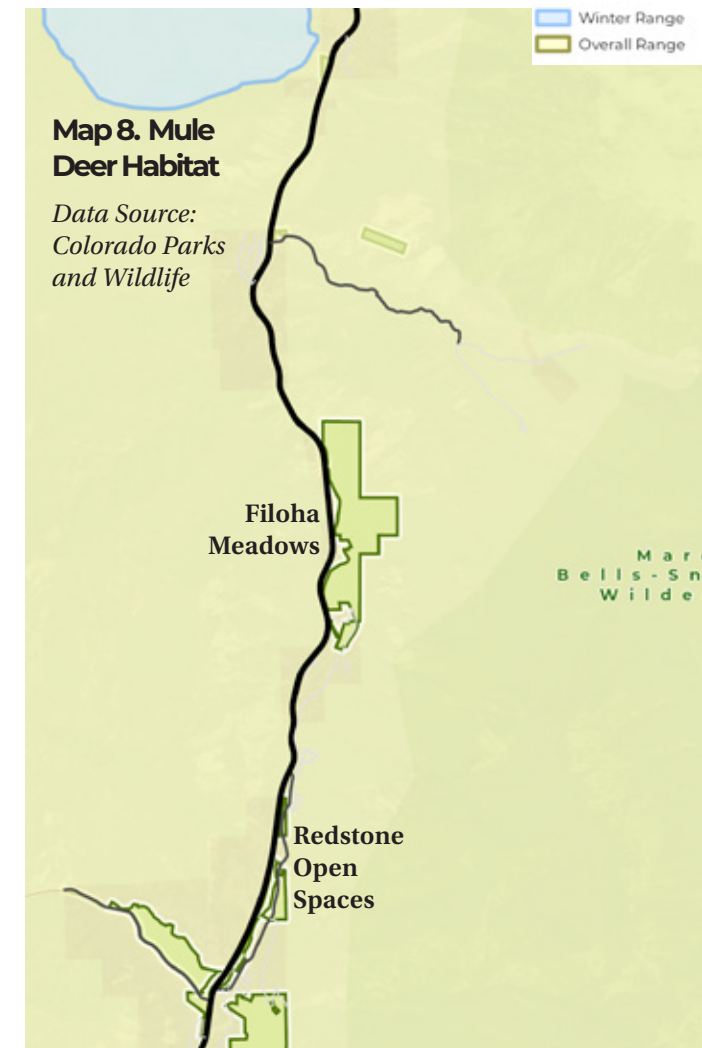
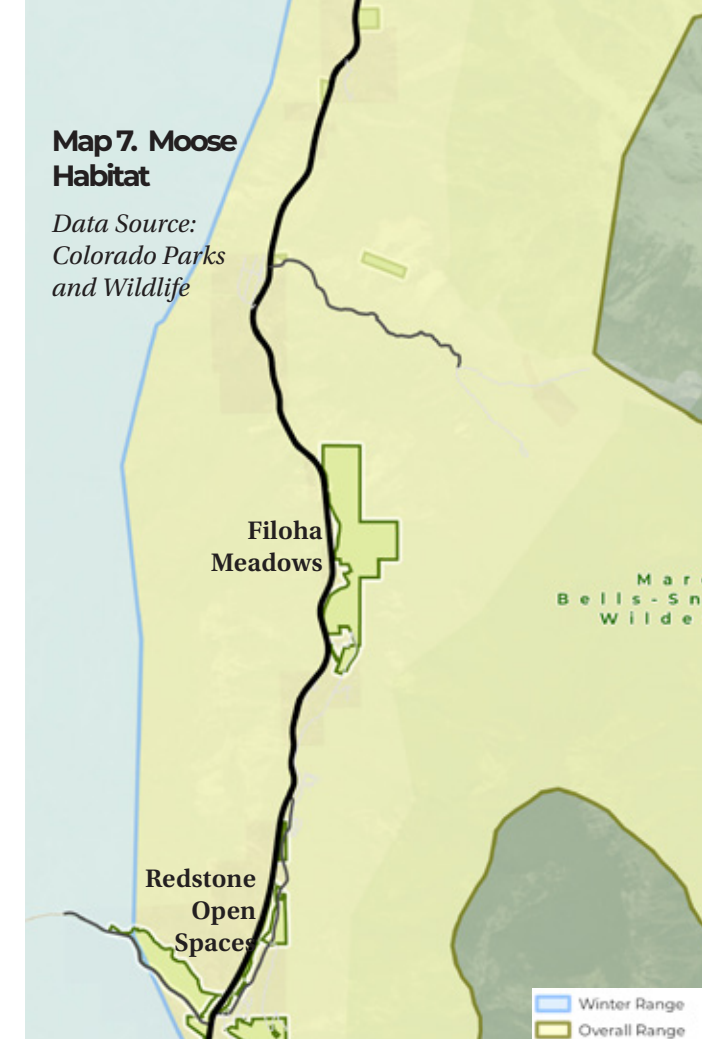
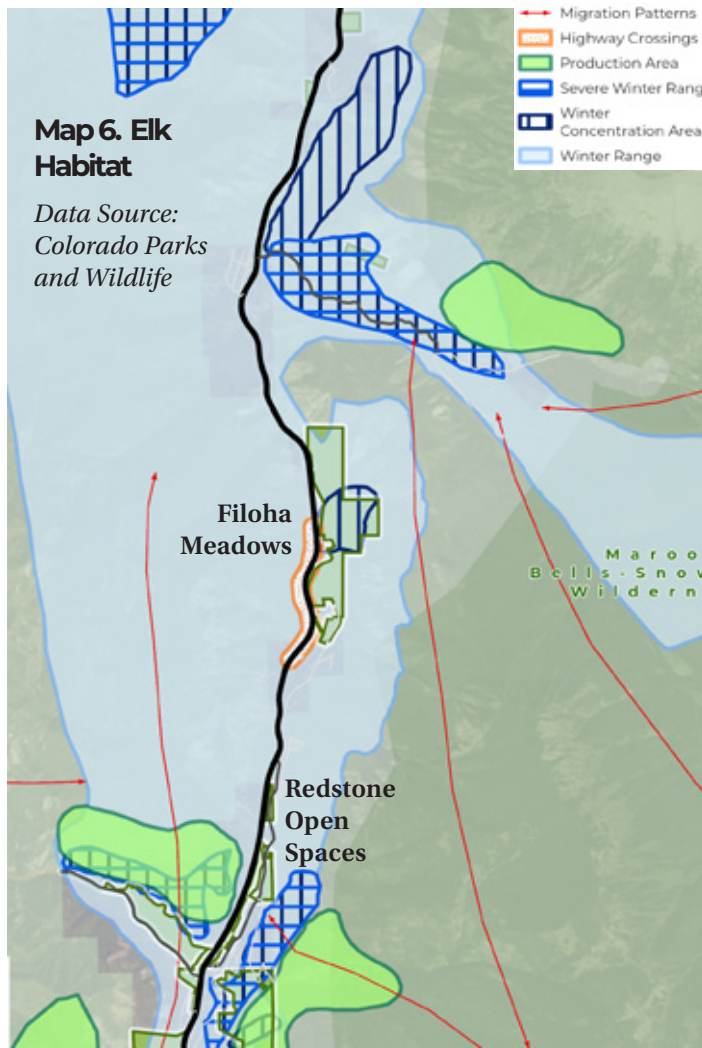
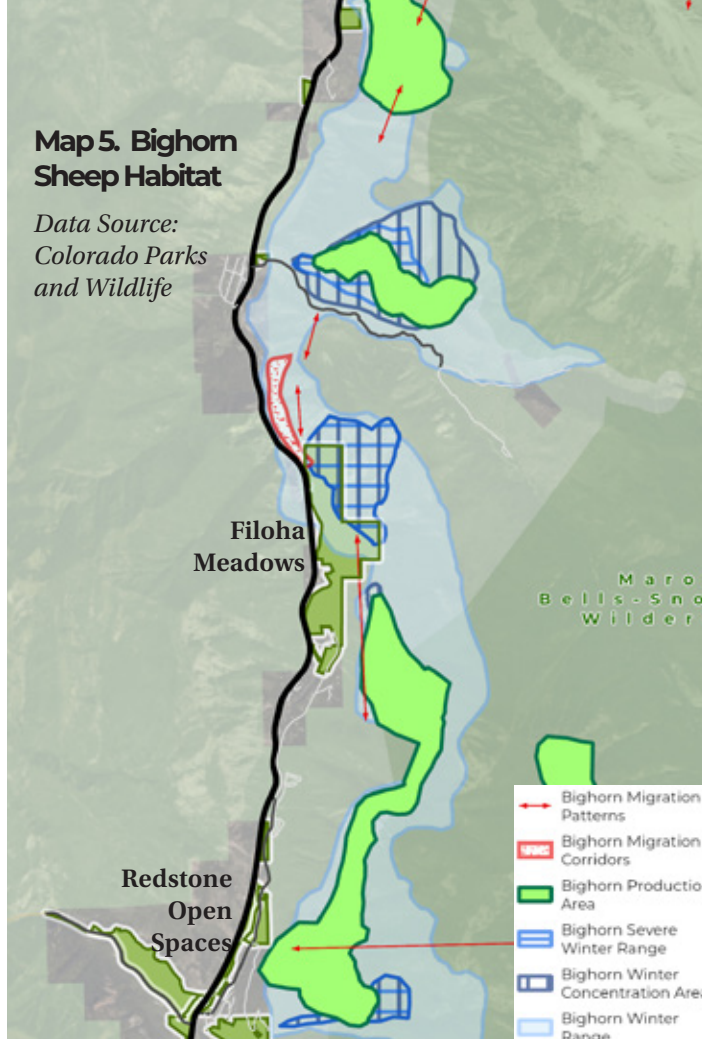
conducted in 2022. Overall species diversity and species richness were both higher in 2022 compared to 2017. Bighorn sheep, elk and mule deer sign were detected in greater abundance in 2022 than in 2017; the greatest proportion these detections were within the grassland cover types at Filoha. This is not, however, necessarily indicative of any changes in management or activity, but is more likely a result of environmental variation in weather that may have resulted in all three species using the property for extended periods in 2022.

Bighorn Sheep

The property provides some of the most important winter and transition habitat for bighorn sheep (known as the Snowmass West herd by Colorado Parks and Wildlife) in the Crystal River Valley. This herd has seen precipitous declines in numbers over the past few decades - from over 200 sheep in the late 1980s to around 40 individuals in 2022. There are a combination of factors that are likely responsible for this decline. Perhaps the biggest impact is the bacterial pneumonia that infects individuals and can cause mortality of all age classes, leading to long-term low lamb recruitment. Many agencies and conservation groups, including OST, have been working diligently on the issue from all angles, and actions have included research funding, habitat improvement projects, and the 2020 retirement of the last domestic sheep grazing allotment on National Forest land in the Crystal Valley to minimize potential pathogen transfer between domestic and wild sheep. CPW is ultimately charged with managing the species. CPW staff develop herd management plans and conduct yearly counts of the sheep that use Filoha Meadows.

Bighorn sheep use Filoha during the spring and fall transition periods, as well as throughout the winter. Surveys in 2022-23 (a year with an above-average snowpack) confirmed that sheep are present from November through late April, underlining the importance of the property to sheep in normal to severe winters. Continued use of the property by bighorn sheep is confirmed by OST-contracted studies, wildlife cameras and CPW telemetry data from collared sheep.

Mapped bighorn sheep habitat at Filoha includes winter range, severe winter range, winter concentration area, summer range and a migration corridor (Map 5). The presence of the meadows near rocky cliffs and mineral hot springs provides



outstanding bighorn sheep habitat. The nutritious forage and clear sightlines for predator detection and escape are critical elements to bighorn persistence. Habitat treatment projects, particularly the thinning of the juniper trees encroaching into the grass-dominated areas, have occurred twice since 2008 and should improve bighorn sheep habitat at Filoha.

Elk

Mapped elk habitat on Filoha includes winter range, winter concentration area and a highway crossing area (Map 6). The 2022 wildlife surveys confirmed use of the entire property by elk, with greatest concentrations of sign within the grass-dominated portions of the property. Camera survey results demonstrate that elk are active at Filoha in every month and every hour, but are particularly active during the crepuscular periods of early morning and late evening through the early night. Elk cows are known to rear their young on the property, which has been confirmed by camera captures of spotted calves on the property in early summer. There may also be a modest amount of calving occurring on the property with possible birthing beds observed within the riparian forest and the aspen woodland at the southern end of the property. CPW staff have confirmed that elk production is occurring in many areas locally not currently mapped as such by their Species Activity Maps.

Moose

Moose populations in the Crystal and Roaring Fork watersheds are growing. In alignment with this trend, moose were first formally detected at Filoha in 2022, and it is likely that their presence here will continue to grow. See Map 7 for mapped moose habitat.

Deer

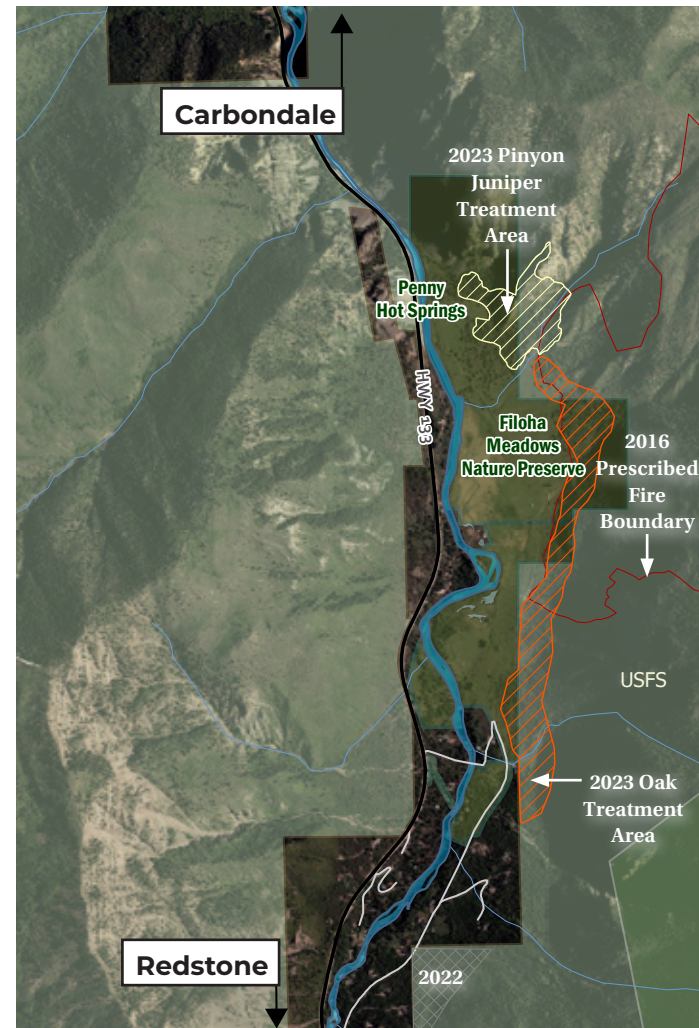
Filoha continues to provide valuable mule deer habitat and deer use Filoha throughout the non-winter months in substantial numbers. The greatest density of deer at Filoha occurs in late fall and late spring as residents are joined by migrating animals, demonstrating that Filoha provides important transition habitat for mule deer. Mule deer (and elk) will benefit from the recent vegetation thinning habitat treatments, especially within the Gambel oak mixed shrublands. See Map 8 for mapped deer habitat.

Forest Health and Habitat Improvements

Numerous vegetation treatments have occurred in the valley since the 2011 approval of the Aspen-Sopris Wildlife Habitat Improvement Project – a large, multi-year U.S. Forest Service project to improve habitat and browse for bighorn sheep, mule deer, elk and other wildlife, with consultation and support from CPW. At Filoha Meadows, the first mechanical treatment was completed in 2013, which removed encroaching pinyon-juniper forests and thinned areas of Gambel oak. In 2016, the U.S. Forest Service conducted a prescribed burn on the hillsides east of Filoha that also stretched to the edge of the meadow.

In 2023, a cross-boundary forest health improvement project was completed with the U.S. Forest Service to improve wildlife habitat and reduce wildfire fuels. About 50 percent of the woody vegetation was masticated or thinned by hand across the 60-acre project area, primarily Gambel oak on the western hillslopes and juniper in the northern meadow. In addition to improving elk forage in the oak shrublands, the Filoha project targeted pinyon-juniper to benefit bighorn sheep by improving sightlines and escape routes for sheep that frequently descend from the rocky outcrops above into the meadow to forage. Open Space and Trails received support from the U.S. Forest Service, CPW’s Habitat Partnership Program and Carbondale and Rural Fire Protection District on this cross-boundary project, which touched both the open space and the White River National Forest.

Map 9. Area Fire and Fuel Treatments



Bats

Three mammal species designated by a state or federal agency or of other conservation concern have the reasonable potential to occur at Filoha: hoary bat, Pacific marten (not a bat!) and Townsend’s big-eared bat. No bat surveys have been done at Filoha Meadows. CPW and the U.S. Forest Service monitor bats on the nearby White River National Forest. Filoha is an important conservation site for imperiled Townsend’s big-eared bat. Limited public access helps reduce human disturbance. Other bat species are consistently observed by staff and consultants leading educational evening tours at the property.

Predators

At least eight mammalian predator species are known to use Filoha as part of their home range: black bears, coyotes, long-tailed weasels, Pacific martens, red fox, striped skunks, bobcats and mountain lions. Black bears are abundant at Filoha and will directly benefit from the shrubland habitat treatments that have been completed.

Small Mammals

Abundant small mammals of a variety of species provide an excellent prey base for both mammalian and avian predators. Documented species include: deer mouse, least chipmunk, mountain cottontail, rock squirrel, montane vole and northern pocket gophers.

Birds

Avian surveys were conducted in 2020 via breeding season point transects, and nocturnal bird and diurnal raptor surveys were conducted in 2022. At least 72 bird species have been documented at Filoha by OST or their consultants since 2003 (Appendix D).

In 2020, green-tailed Towhees were, as in previous monitoring years, the most abundant species detected, followed by Violet-green Swallow, Warbling Vireo, Chipping Sparrow, Black-headed Grosbeak, Canada Goose, American Robin, Tree Swallow, Turkey Vulture and Virginia’s Warbler. Three typically common species at Filoha, Broad-tailed Hummingbirds, Cordilleran Flycatchers and Red-shafted Flickers, were not detected in 2020. No diurnal raptors were detected during targeted raptor surveys in 2022 and no new raptor nests were discovered, however, Cooper’s Hawks,

Red-tailed Hawks, Turkey Vultures and American Kestrels were all observed during other surveys in 2022. The common Nighthawk (*Chordeiles minor*) was detected via nocturnal surveys for the first time at Filoha in 2022. Northern Pygmy Owls were documented within the same general area at Filoha during the breeding season in 2018 and 2022. As such, it is likely that this small owl is breeding on or foraging at Filoha during the breeding season.

Management Indicator Species

Management Indicator Species (MIS) are species selected for targeted monitoring and study because their welfare is an indicator of the welfare of other species using the same habitat. MIS for birds and mammals have now been identified and studied at Filoha Meadows. The objective is to track trends over the long run that can inform management direction for Filoha’s habitat types. With only two years of MIS sampling so far, trends cannot yet be identified. The 2023 Filoha Meadows Wildlife Monitoring Report provides details on selected MIS by habitat type. Table 4. provides a summary.

Special Status Species

Three federally protected or candidate species are known or have the potential to occur on or adjacent to Filoha: Canada lynx (*Lynx canadensis*), gray wolf (*Canis lupus*) and monarch butterfly. No designated critical habitat exists for any listed species within or adjacent to Filoha. Filoha is not mapped as potential and/or predictive lynx habitat (CPW 2023 SAM).

Table 4. Management Indicator Species

HABITAT	SPECIES	DETECTIONS*	
		2017/18	2022
Aspen Forest or Woodland	Warbling Vireo	2	16
Cliffs, Scree, Talus, Grass/ Meadow	Bighorn Sheep	55	354
Mixed Montaine Shrubland - Open	Green-tailed Towhee	14	21
Mixed Montaine Shrubland - Dense	Virginia’s Warbler	9	5
Riparian Forest	Cordilleran Flycatcher	3	0
Broad-scale Habitat Generalist	Rocky Mountain Elk	824	1,855

* Two years does not make a trend; two years are shown simply for comparison.



Monarch butterfly caterpillar at Filoha

The Colorado and the Roaring Fork watersheds are part of the gray wolf's historic distribution but wolves were eradicated in the state by the 1940s. Over the past decade, the U.S. Fish and Wildlife Service restored gray wolves in coordination with the states of Wyoming, Idaho, Montana, New Mexico and Arizona and there are now wolves known within Colorado, including naturally dispersing and reproducing wolves observed in 2021. Colorado Parks and Wildlife has subsequently developed a Colorado Wolf Restoration and Management Plan (CWRMP) to guide fulfillment of the planning components of the statutory requirements of CRS 33-2-105.8. The CWRMP should be consulted for information regarding Colorado wolf reintroduction and legal status. Now that gray wolves have been reintroduced to Colorado, it is likely that they will occur in the Crystal River Valley and the Redstone/Filoha area.

The monarch butterfly is an official candidate species for federal listing as threatened or endangered. The primary drivers affecting the health of the North American migratory monarch butterfly populations are loss and degradation of habitat, continued exposure to insecticides, disease and predation, and effects of climate change. The availability of milkweed is essential to monarch reproduction and survival. A healthy stand of milkweed occurs at Filoha Meadows along the Crystal River south of Penny Hot Springs. In August 2022, two monarch butterfly larvae (i.e., caterpillars) were documented on milkweed leaves within that stand. This was the first documented occurrence of monarch breeding at Filoha.

Five species on the State of Colorado Threatened and Endangered or Species of Concern lists could potentially occur at Filoha: bald eagle, boreal toad, Colorado River cutthroat trout, northern leopard frog and river otter. One species, Townsend's big-eared bat, is known to occur at Filoha.

Other special-status species with the potential to occur at Filoha Meadow (U.S. National Forest Region 2 sensitive species and/or Colorado Natural Heritage Program species of conservation concern) can be found in Appendix D, including 19 bird species that are designated by one or more governmental agencies or conservation organizations as having special status or have been found to be in decline. Three of the species known to be most sensitive to human activity and anthropogenic habitat

alteration, Chipping Sparrow, Green-tailed Towhee and Virginia's Warbler, were detected in substantial numbers in appropriate habitat, suggesting that the management of Filoha is providing effective habitat for sensitive bird species. Interestingly, species often associated with human activity such as American crow, American Robin, Black-billed Magpie, Brown-headed Cowbirds, European Starling and House Finch were detected in low numbers (e.g., magpie) or not at all (e.g., cowbird, starling), perhaps influenced by the rewilding process.

2.4 RECREATION

SEASONAL CLOSURE

All areas of the Filoha Meadows and Hot Springs Ranch parcels, east of the Crystal River, are closed to public access seasonally from October 1 through June 30 to protect critical bighorn sheep and Rocky Mountain elk habitat. Since significant wildlife use of the property occurs between dusk and dawn, a closure of the property a half-hour before sunset to a half-hour after sunrise was also established with the 2008 plan. OST personnel or their assignees and special uses are allowed access to the property on the east side of the Crystal River during the closure.

This management plan update extends access restrictions and seasonal closures to the Larson-Grange Loadout parcel, detailed in [Natural Resource Management Action 1](#).

TRAILS

The 2008 management plan established two travel corridors to limit human disturbance on the open space: the Filoha Meadows Trail, which provided access for the public, and the Educational Corridor, which was limited to groups guided by staff or trained volunteers. Acquisitions of adjacent properties have provided additional connections to the two originally created travel corridors.

Filoha Meadows Trail

The historic county road and Crystal River Railroad traversed the property and the railbed still exists, providing the platform for the Filoha Meadows Trail. This trail is open to public access while the Nature Preserve is open, from July 1 through September 30. The railbed is maintained as a soft-surface trail with no imported materials such as crusherfines or gravel. To minimize impacts, neither equestrians nor

bicycles are allowed at Filoha Meadows.

The main public access point for the Filoha Meadows Trail is from Redstone on bike or foot, along Redstone Boulevard and County Road 3b (aka Dorais Way), which starts as U.S. Forest Service property. The closest public parking is at Redstone or Elk Park.

All visitors on bicycles must leave their bicycles at the entrance to Filoha. Signage installed at the main entrance indicates the start of the trail and allowed uses.

Educational Access

Travel off of the Filoha Meadows Trail by the public is not permitted. For educational purposes, the 2008 management plan established a travel corridor that follows an old road that leaves the Filoha Meadows Trail and traverses downhill toward a viewing blind. To support the content and purpose of educational programs, educational access has been authorized to follow alternatives to the formally designated travel corridor. Any travel off of the Filoha Meadows Trail is limited to groups guided by staff or trained volunteers.

Additional Connections

Parking for Filoha Meadows for educational programming is accommodated at the Administrative Unit. The Administrative Unit connects with Filoha Meadows Nature Preserve via a soft-surface route that joins County Road 3b (aka Dorais Way) before the entrance to Filoha Meadows. This connection occurs at the northeast corner of the Administrative Unit and does not cross private property.

VISITOR AMENITIES

No additional visitor amenities like restrooms, benches, shade structures or informational kiosks are located at Filoha Meadows. Public use is monitored to track levels of use and determine levels that may require a restroom or other facilities.

BOATING

Boaters are allowed to float the Crystal River, but must respect the closure of the Nature Preserve. No connection to the river is provided from the Filoha Meadows Trail to the river. CPW manages the Crystal River through Filoha Meadows.



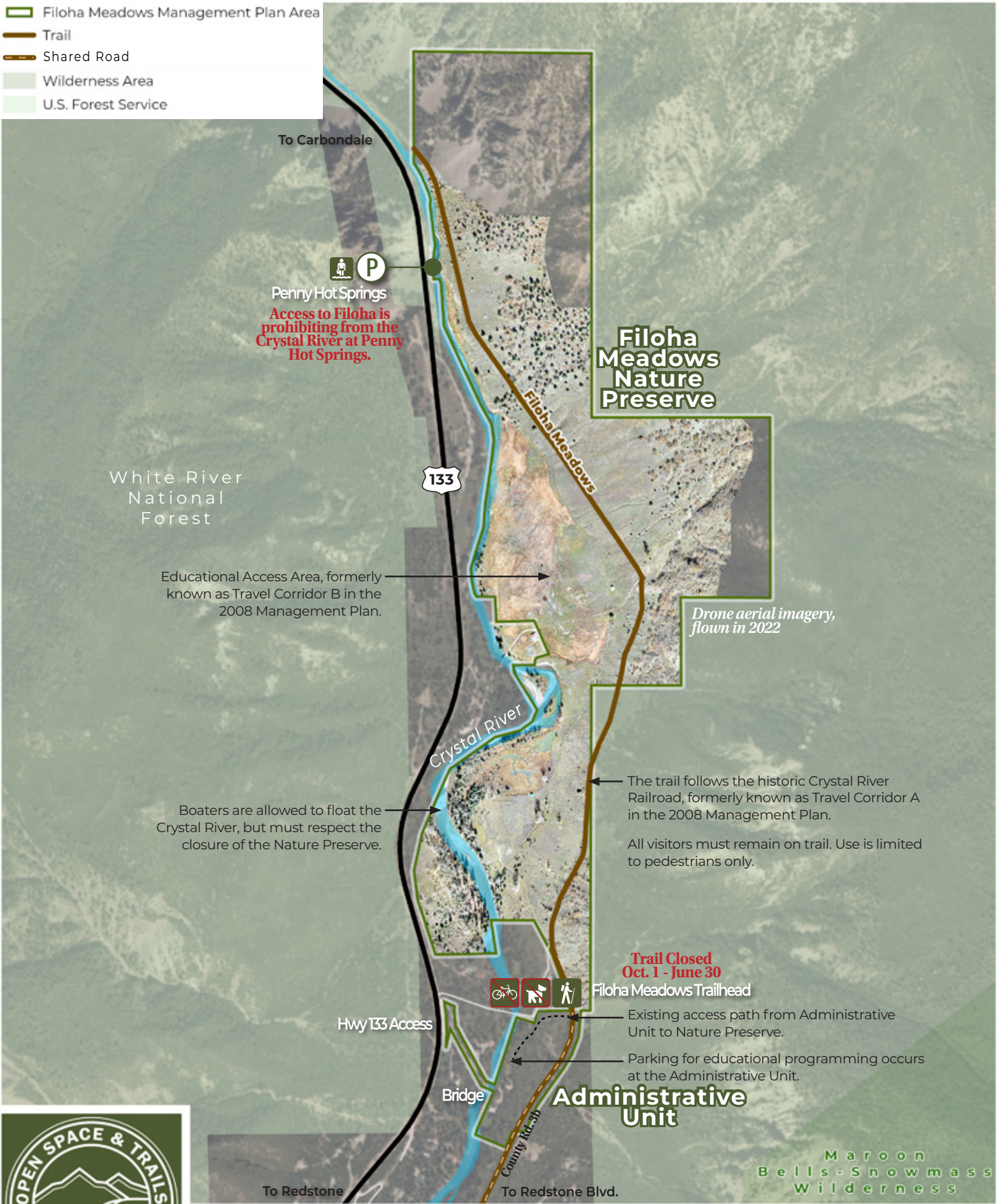
Bighorn sheep



Rocky Mountain elk



Mule deer



Map 10.
Filoha Meadows Education and Recreation Map

DOGS

Dogs and all other types of domestic pets/livestock are prohibited on Filoha Meadows Nature Preserve to protect wildlife. This restriction is strictly enforced.

HUNTING

Hunting on Filoha is not allowed and discharge of firearms is prohibited as per OST Title 12 regulations.

2.4 EDUCATION AND SPECIAL USES

EDUCATION

Among the important management goals for Filoha Meadows is environmental education. OST sponsors programs, offered at reduced cost or free to the public and led by the Roaring Fork Conservancy, to educate visitors about the property's unique natural resources and wildlife habitat. A regular schedule of environmental education programs is advertised annually and has included tours to see the orchids, fireflies and enjoy the scenery of Filoha while explaining the management objectives for the property. Such programs help instill a sense of

stewardship for the property among visitors and residents.

Education programs sponsored by OST are exempt from the need for a special-use permit.

A viewing blind, named Beaver View, is accessible to educational groups; it is used to limit human encroachment into the beaver-enhanced wetlands. Public access to the viewing blind is not permitted because it requires travel off of the Filoha Meadows Trail.

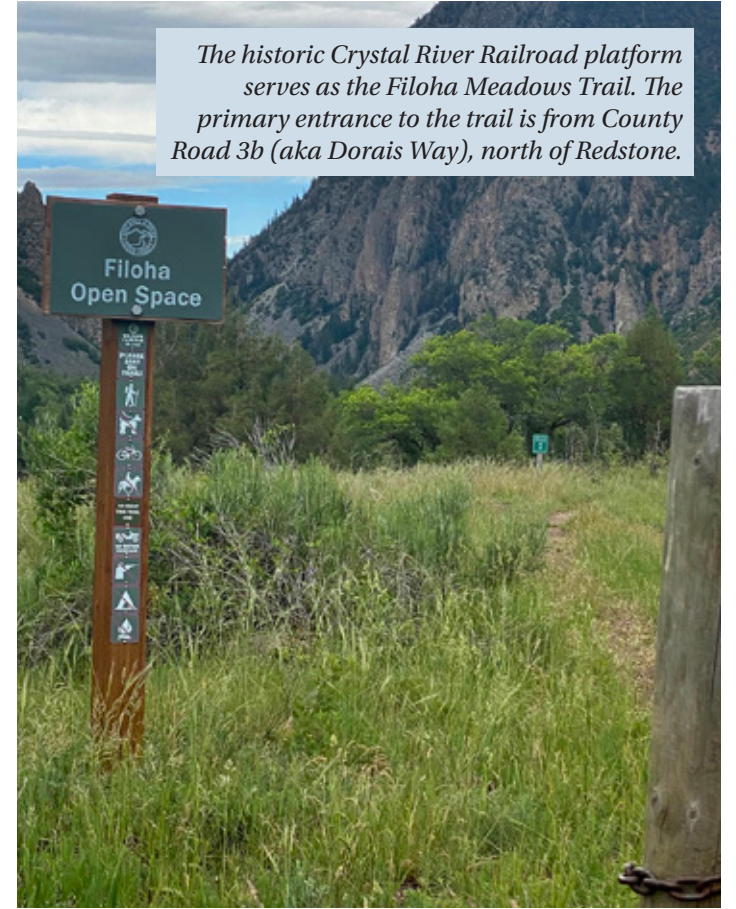
SPECIAL-USE PERMITS

Allowable special uses were limited to environmental education and scientific research in the 2008 management plan. Potential uses that could be allowed with an OST special-use permit included:

- Environmental education beyond what is sponsored by OST
- Group visits of more than 10 people
- Scientific research not initiated by OST

COMMERCIAL USE

Commercial use of Filoha Meadows is not allowed.





An historic barn is still standing at Filoha Meadows Nature Preserve.

2.5 STRUCTURES

Along the former railroad grade stands an old barn that dates at least back to the 1930s. It appears in a photograph showing the old Penny Inn and a passenger train. Near the barn, a building that was reported to be a bunkhouse is no longer standing.

Near the river, just below the bridge on an adjacent private property, are the remains of a bathhouse, which collapsed during the 1990s.

Across the river from Penny Hot Springs lies the remains of a structure that apparently was standing in 1967, when it was photographed by Dell McCoy for his book, "The Crystal River Pictorial." This structure was a stage stop that was originally built prior to the completion of the railroad in 1892 and it is in the approximate location of the Van Sycle cabin. It's possible that the Van Sycle's cabin and the stage stop were one and the same. An old two-seater outhouse is tucked against trees on the east side of the meadows.

The 2.5-acre Filoha Greenhouse Conservation Easement, on the property retained by the Johnson family, includes a greenhouse/workshop.

An old cattle chute remains on the Larson-Grange Loadout parcel.

FENCING

OST has been removing fencing since its initial Filoha property acquisition. In 2005, OST, the Roaring Fork Conservancy and volunteers removed the main fence bisecting the property. The only remaining fence is located along the property boundaries. To protect wildlife and allow uninhibited movement, no new fence will be built. Boundary fences may be maintained to identify the property for management purposes.

2.6 ADMINISTRATIVE UNIT

The Filoha Meadows Administrative Unit is located on land zoned AR-2 Agricultural/Residential. It was acquired because of its riparian characteristics, its proximity to Filoha Meadows Nature Preserve and its potential to support the administration of, and more practical access to, the Nature Preserve and County Road 3b (aka Dorais Way). The 10-acre parcel has been designated an Administrative Unit. It was formerly known as the Wildin parcel and prior to that, the Lambert parcel, in reference to previous owners.

HOUSING

Two residential structures exist on the parcel. Unit A, known as the main home located at 15188 Hwy. 133, is a one-story, wood-framed and poured-concrete structure with composition board siding and brick veneer, constructed in 1965. The 2,828-square-foot residence has two bedrooms, one bathroom, an office, an attached two-car garage and a finished basement which contains a two-bedroom apartment. Unit B, the Caretaker Dwelling Unit (CDU), is a multi-level, wood-framed and poured-concrete structure with wood siding and stone veneer, constructed in 1970 and remodeled in 1990. The residence on the second level, located above a large garage/shop area, has two bedrooms and two bathrooms. The basement garage was designed for multiple vehicles with access provided by two overhead-style doors. A small addition to the garage was built with a concrete block foundation wall. In total, this unit is 2,136 square feet, but the effective living space is approximately 600 square feet; 1,536 square feet of the residence is the garage. In the AR-2 zone district, CDUs are non-conforming uses.

Although in poor condition, both units A and B were initially leased to existing tenants at the time of the property's purchase. Lease agreements were terminated prior to the inclusion of the Administrative Unit into the Filoha Meadows Management Plan update.

Housing Assessment

Assessments of the residential structures has been completed. In March 2022, Net Zero Builders inspected the residential units to assess the general condition of the properties and provide feedback on steps that could be taken to improve the residential units for occupancy. High-level, order-of-magnitude costs to prepare the units for occupancy were provided as a guide for the decision-making process.

Unit A

Unit A is on a basement foundation, which appears to be in good structural condition. This unit would require a significant investment; the unit is not currently habitable. On the main level, new flooring, paint and appliances are needed. The windows and exterior doors are inexpensive wood units that are over 60 years old; these would need to be replaced. The wood siding is in generally good condition. Additional bedrooms are located in the basement. The basement ceiling, however, is low and may be non-conforming for permanent occupancy.

Unit B

Unit B would require a significant investment to configure the livable area into a multi-family residence. The structure is on a poured concrete foundation and appears to be in good condition, given the age of the home. At the time of the inspection, the presence of rodents and mold was observed. New flooring, paint, bathroom vanities and appliances are needed. The wood siding and the metal roof are in generally good condition.

Utilities

Water for both of the residential units is provided by a shared well on the property. The residential units are not connected to municipal sewer service. Residence A is serviced by one 1,250-gallon septic tank followed by a 1,250-gallon, two-compartment tank through an onsite wastewater treatment system (OWTS). This system was sized to service a 3-bedroom residence plus an office. The well is located north of the residence, near the Crystal River. Residence B is serviced by a 1,000-gallon, two-compartment tank through an OWTS. This system was sized to serve a 1-bedroom residence.

Electric heat is provided at both units. Residence A has a propane boiler, electric heaters and a wood-burning fireplace. Residence B has electric baseboards for primary heating and a wood stove for backup heat.

ACCESS

Bridge

A single-span bridge provides access from Hwy. 133 to the existing residential units located on the east side of the Crystal River. In 2021, work was performed to address concerns with the condition of the deck, girders, substructure and the channel scour at the west abutment, as well as erosion of the approach embankment. The bridge and its abutments were refurbished and river channel work was also performed.

Parking

The Administrative Unit provides parking spaces for the two residential units as well as space for five to 10 parked vehicles for educational tour groups, north of the residences. Residence A includes a main driveway leading to a two-car garage. There is also an approximately 12-foot-wide access drive to the west of Residence A. Residence B provides a short driveway in front of a two-car garage. There is also a covered area for vehicle parking on the east side of the home.

RECREATION

After acquisition, a soft-surface trail connection was improved to provide access for educational tour groups between the Administrative Unit and Filoha Meadows. This access trail travels north from the residential units, turning east and upslope to join County Road 3b (aka Dorais Way) before the main entrance to Filoha Meadows. This connection occurs entirely within the Administrative Unit parcel and does not cross private property.

NATURAL RESOURCES

No wildlife or vegetation surveys have been completed on the Administrative Unit. The northern end of the parcel contains native plant communities and wildlife habitat. Vegetation present includes some mature cottonwood galleries with a grass and forb-dominated understory, as well as pockets of young and regenerating aspen and blue spruce trees. Beaver activity has been documented on the property, with tree removal occurring between the residential buildings and the river. Deer and songbirds are frequently observed in this zone, as well.

A dynamic debris flow crosses this parcel, acting as an ephemeral stream during wet years. The point source of this water and debris flow is an unknown location above the property.

Research equipment installed and maintained by the U.S. Geological Survey is present on this property with the permission of OST. The passive monitoring station collects soil moisture data via cosmic-ray technology as part of the USGS Next-Generation Water Observatory System of the upper Colorado River Basin.



Map T1.
Filoha Meadows Administrative Unit

3. Planning Process and Public Input

3.1 PLANNING FRAMEWORK

The 2008 management plan laid the foundation for the management of Filoha Meadows Nature Preserve. This 2023 update addresses two additional parcels that have been acquired and builds on the previous plan through natural-resource monitoring; evaluation of current conditions and progress that has been made toward implementing management actions; analysis of current trends and community needs; and public input collected through community surveys, outreach events and partner/stakeholder meetings. This planning effort supports the implementation of ongoing projects and new action items. This plan is a near- to mid-range tool to plan and budget for management actions that support OST's mission and values.

PLANNING PROCESS

Open Space and Trails coordinated the management plan update for the Filoha Meadows Management Plan with the Redstone Parks and Open Space Management Plan to efficiently capture input on these proximate planning areas.

Phase 1: Baseline Data Collection

The first planning phase for the Filoha Meadows Management Plan update included a review of relevant plans and policies, preparation of up-to-date maps of all properties and an evaluation of natural resource and wildlife monitoring reports and existing conditions. Information collected is summarized in [Section 2](#).

Phase 2: Partner and Public Outreach

Staff met with partners early in the planning process to discuss current conditions and trends, and identify partner priorities to support management of Filoha Meadows properties and Crystal Valley-area open spaces now and into the future. Staff facilitated seven meetings in February and March 2023, with the U.S. Forest Service, Colorado Parks and Wildlife,

Colorado Department of Transportation, Roaring Fork Conservancy, Healthy Rivers Board, West Elk Scenic and Historic Byway Steering Committee and the Pitkin County engineer. Highlights from these meetings are summarized in [Section 3.2](#).

Staff engaged the Crystal Caucus (March 9, 2023) at the beginning of the outreach process. Crystal-area residents were provided a three-question comment card at the meetings, designed to gain insight from area stakeholders. Staff received 11 comments through this outreach.

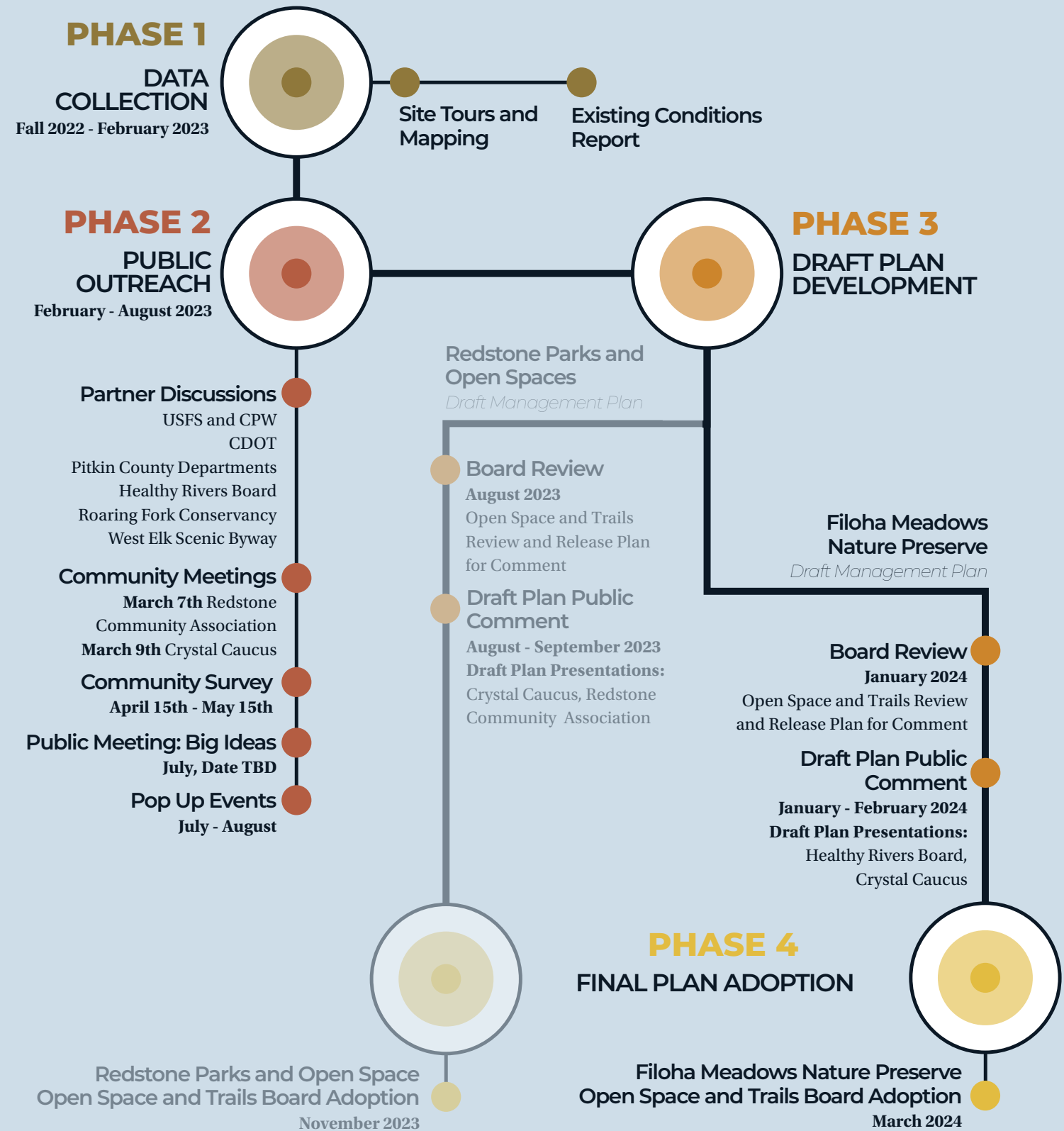
Public input was collected through an online survey aimed at better understanding the broader community's interests and use of Filoha Meadows. The survey, conducted from mid-April through mid-May of 2023, was promoted through social media and print advertisements in the Crystal Echo and Sopris Sun. It generated 123 responses. Complete survey responses are in Appendix A, with highlights summarized in [Section 3.3](#).

Utilizing the existing conditions data, reports and partner and public input, staff compiled draft management ideas. These ideas were reviewed with community members at a public open house hosted at Redstone Park from 4-7pm on July 12, 2023, a Crystal Caucus meeting on July 13 and a pop-up outreach booth at the Magical Moments concert held at Coke Ovens Open Space on July 15. Overall, approximately 150 individuals were present at these three events. Feedback was captured through write-in comment cards. A total of 18 cards were collected.

Phase 3: Draft Plan Development and Public Comment

Management ideas were refined and compiled in a draft management plan with updated action items to guide management of area parks and open space. The draft management plan was presented to the Open Space and Trails Board for comment and direction on January 4, 2024, prior to sharing the plan with the Crystal Caucus. Management action items were reviewed with partners. Partner comment letters are included in full in Appendix C.

Following review by the Open Space and Trails Board, the draft Management Plan was released for public comment. Public comment was facilitated in Spanish and English through an online survey during a four-week period beginning on January 11, 2024. The Filoha draft plan and comment period was promoted in both the January and February



OST newsletters. Together, the two newsletter blurbs attracted 51 unique clicks (individuals who clicked to the web page featuring the draft management plan and a link to an online survey where they could provide comment). The plan was also promoted with two paid social media boosts on both Instagram and Facebook. The posts reached about 9,800 people (some of whom likely saw more than one post) and generated 111 clicks to the web page containing the draft plan and survey link

Phase 4: Final Plan Revisions and Adoption

The Filoha Meadows draft management plan was updated based on public and partner feedback and presented to the Open Space and Trails Board on March 7, 2024 for adoption.

3.2 PARTNER COMMENTS

Partners were engaged at two points during the Filoha Meadows plan update process. Early in the planning process, partners were tapped to identify opportunities for coordination. Partners were also provided the draft plan and asked to submit formal comments.

WHITE RIVER NATIONAL FOREST

Filoha Meadows is bordered by the White River National Forest to the east. Opportunities for continued partnership from the perspective of the U.S. Forest Service include:

- Partnering on fuel reduction, prescribed fire and vegetation management for continued habitat improvement.
- Continued access to Filoha for bat monitoring.

COLORADO PARKS AND WILDLIFE

OST collaborates on projects and planning in the Crystal River Valley with CPW. CPW's concerns and priorities in the Crystal Valley include:

- Continued protection of migration routes and critical winter range through the seasonal closure.
- Habitat enhancement and continued cross-boundary work.
- Limiting river disturbance from increased public use and protecting areas when fish are spawning.

- Limiting human access at the Larson-Grange Loadout to protect migration routes.

ROARING FORK CONSERVANCY

OST has funded RFC's educational programming at Filoha Meadows and RFC collaborates with OST on projects in the Crystal Valley. RFC's interests include:

- Restoration of streambanks and alluvial storage interest.
- Continued protection of natural resources through a seasonal closure.

3.3 PUBLIC OUTREACH

COMMUNITY SURVEY

OST developed the survey to understand general patterns of use of residents and visitors (preferred activities, frequency of use, etc.), what attributes of are most valued, and what community members believe is working well or in need of change.

Demographics

Over half of the 123 responses to the online survey were from Redstone and Crystal Valley residents. About one-quarter of responses came from visitors. Respondents trended older; 37 percent were over 60 years old and 21 percent were between 51-60 years. Few respondents were under 30 years old (<5%).

Activities

Activities enjoyed by survey respondents at Filoha Meadows include wildlife viewing at either Filoha Meadows Nature Preserve or other areas in the Crystal Valley (64%), hiking or walking the Filoha Meadows Trail (36%) and participating in educational programming hosted by the Roaring Fork Conservancy (19%).

Important Qualities

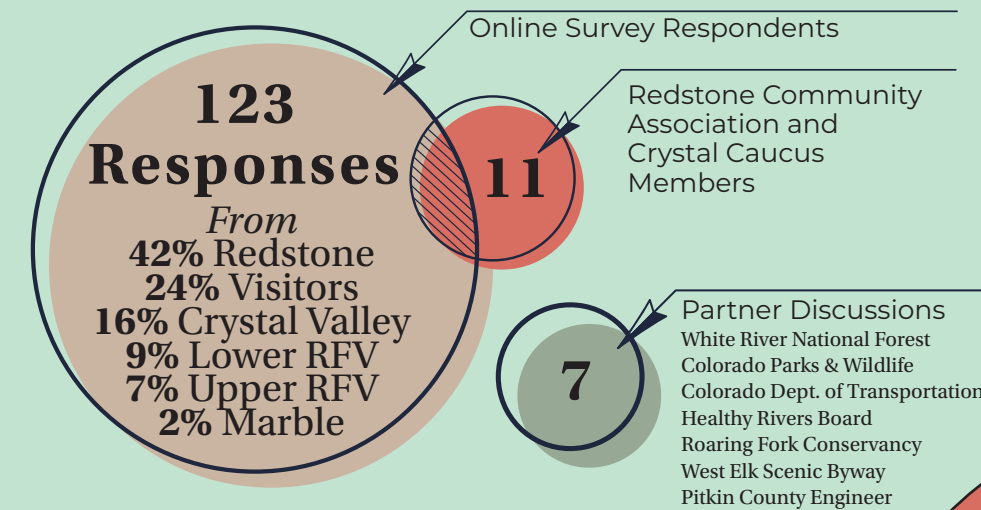
Survey participants were asked to indicate the level of importance of eight open space attributes (identified by staff) on a scale from very important, important, somewhat important to not important.

The natural setting of open spaces in the Crystal Valley, including Filoha Meadows, ranked high; beauty and protection of scenic views was identified as very important or important to the most respondents (98%); ecology, wildlife habitat and natural resources (97%) and riparian/aquatic

FILOHA MEADOWS NATURE PRESERVE

Community Feedback

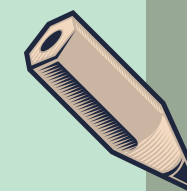
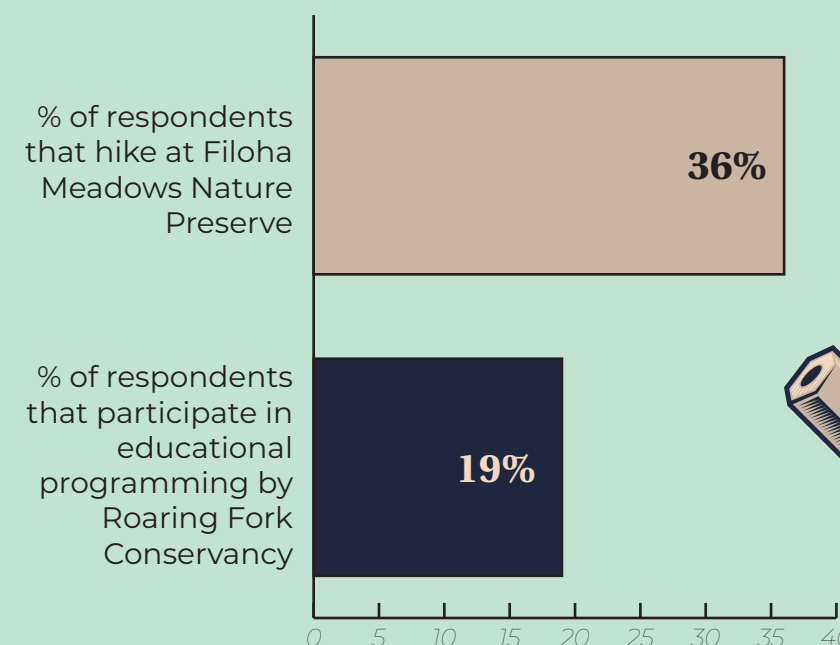
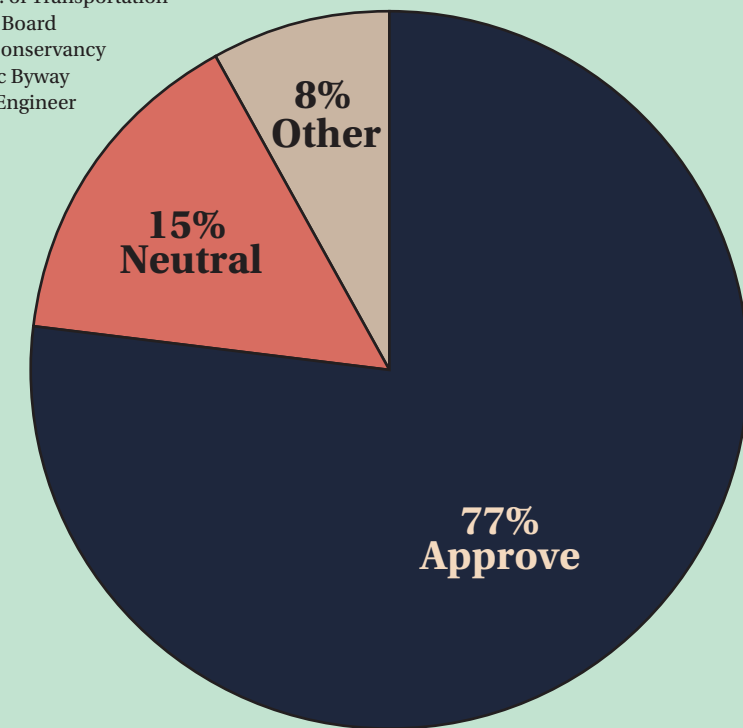
Who we heard from*



*Community and stakeholder outreach was coordinated with outreach efforts for the Redstone Parks and Open Space Management Plan update due to proximity.

Please rate your level of support for continuing the current conservation approach:

Filoha Meadows Nature Preserve is managed primarily for the protection of natural resources and biodiversity.



Just over **one-third** of respondents hike at Filoha Meadows Nature Preserve while the property is open, July 1 through September 30. The most noted barrier to visitation is lack of clarity around public access to the Preserve.

health followed close behind. Community access/ connectivity (73%) and recreation (63%) also ranked high in importance. The least important attribute of open space is its contribution to attracting and supporting tourism (34%).

Management Support

Support for continuing the current conservation approach at Filoha Meadows was high. Seventy-seven percent of survey respondents support management of Filoha Meadows primarily for the protection of natural resources and biodiversity.

Two questions asked respondents to offer details (things that work well or things that could be improved) about the future management for Filoha Meadows Nature Preserve and the Administrative Unit. Respondents provided 38 write-in comments. All comments were reviewed by staff to identify themes. The themes received in public comments are listed below (in no particular order):

- Clarification of public access from Redstone and seasonal closure dates is needed.
- Continued protection of natural resources and biodiversity.
- Extend the management approach of Filoha Meadows Nature Preserve to properties acquired as part of the Preserve.
- Provide public trail access through the Administrative Unit to support Crystal Valley trail connectivity.

OUTREACH EVENTS

OST staff hosted three outreach events to test management ideas for Filoha Meadows. The key ideas presented to the public for feedback included:

- Integrate the Larson-Grange Loadout into the Nature Preserve and establish an Administrative Unit.
- Renovate the existing structures at the Administrative Unit to provide housing for land stewards.
- Continue research and monitoring of wildlife, vegetation and unique resources.
- Continue restoration projects to improve wildlife habitat and ecosystem function.

Feedback on these management ideas was captured through write-in comment cards to validate support or provide an avenue to object.



A total of 172 individual responses were collected from the public through the community meetings, an online survey and outreach events during Phases 2 - 4.

DRAFT PLAN COMMENT PERIOD

The Draft Management Plan was released for public comment on January 11, 2023. A total of 20 responses were collected. More than 80% of those respondents support or strongly support the management actions drafted for the Nature Preserve and about 60% support or strongly support the management actions drafted for the Administrative Unit. Respondents were asked to share feedback on the changes or additions that they would like made before the final plan is adopted.

A primary concern voiced by respondents pertained to securing permanent access to Filoha Meadows via County Road 3b (aka Dorais Way). Two comments were related to the worries about increased building development in a rural area. Some parking changes were suggested for the Administrative Unit, including additional screening and attention to headlights. One respondent provided strong support for the Ranger Station.

4.4 RELEVANT PLANS AND POLICIES

PITKIN COUNTY

Title 12 of the Pitkin County Code

All properties and trails managed by Pitkin County Open Space and Trails are subject to regulations set forth in Title 12 of the Pitkin County Code. Individual properties may be subject to additional terms established in their respective management plans.

Open Space Board Policies

Protection of Natural Biodiversity and Management of Human Use (adopted in 2016)

This policy requires that human uses on OST properties be managed in a manner that preserves and protects native biodiversity. The OST program seeks to rely on the best available science to guide management decisions, inform specialized habitat management needs and identify opportunities to restore healthy, natural functions in degraded habitats.

2014 Pitkin County Open Space and Trails Signage Design Guidelines

The 2014 Signage Design Guidelines are an update to the Trail Design and Management Handbook. The update covers materials, graphics, types, templates, installation and maintenance for signs on Pitkin County Open Space and Trails properties.

2008 Filoha Meadows Management Plan

The 2008 Management Plan provided an important foundational framework for long-term management of the original Filoha Meadows Nature Preserve properties.

The goals in the 2008 plan addressed ecological restoration, education and wildlife habitat. Management actions aligned with the defined goals. The actions that have been accomplished are the result of collaboration among OST and its partners to protect the area's natural resources and biodiversity.

2018 Carbondale to Crested Butte Trail Plan

In 2018, Open Space and Trails completed an engineering and environmental study of potential trail segments within the Crystal Valley that could connect to an existing trail network extending to Crested Butte. The study evaluates the potential alignments and feasibility of connecting the existing Crystal Trail to the top of McClure Pass with a safe, non-motorized path.

Following the Board of County Commissioners' and Open Space and Trails Board's direction, an Environmental Assessment was undertaken by the Forest Service for the trail connection between Redstone and the top of McClure Pass. A final decision from the Forest Service is forthcoming

(as of January 2024). With the extended seasonal closure, prohibition on mechanized uses and public requests to keep Filoha Meadows Nature Preserve in its natural state, the 2018 plan ensures that Filoha Meadows Nature Preserve will not be utilized for the purposes of a Crystal Valley regional trail. This does not apply to the Administrative Unit, which may still be considered. Read the full plan here: [Carbondale to Crested Butte Trail Plan](#) (2018).

2016 Crystal Caucus Area Master Plan

The Crystal River Caucus area is located in the Pitkin County portion of the Crystal River watershed. Core values of the Master Plan include preservation of open space, wildlife habitat, the Hwy. 133 scenic corridor and water quality. Relevant to the Filoha Meadows Management Plan, the Caucus supports protection of the natural environment, access to non-motorized recreational activities, maintenance of the valley's ecosystems, and promotion of a balance between residential development and responsible environmental stewardship.

STATE OF COLORADO

2019 Statewide Comprehensive Outdoor Recreation Plan (SCORP)

Every five years, Colorado Parks and Wildlife leads development of a comprehensive outdoor recreation plan to maintain eligibility for funding through the Land and Water Conservation Fund, and to inform additional investments from other federal, state, local and private programs. SCORP priorities reflect the current trends, opportunities and challenges facing Colorado's outdoor recreation resources. High levels of involvement to create this plan were required from outdoor recreation stakeholders. Relevant actions include:

- Sustainable Access and Opportunity – Ensure quality access to Colorado's outdoors for all of the state's communities and visitors.
- Stewardship – Build Colorado's commitment to stewardship of the outdoors, improving recreation infrastructure and promoting responsible use of the environment.
- Land, Water and Wildlife Conservation – Increase a conservation ethic for Colorado's outdoors and promote landscape-scale conservation.

4. Management

4.1 MANAGEMENT GOALS

This management plan promotes the long-term resilience of the collection of parcels that comprise Filoha Meadows and its surrounding natural ecosystem through careful planning. The following goals have been modified from the 2008 management plan to reflect public and partner feedback collected during the 2023-24 planning process:

- Study, protect and enhance the ecological communities with particular emphasis on those that are unique and rare.
- Preserve and enhance the outstanding wildlife habitat values.
- Provide low-impact environmental education.
- Offer recreation access along designated routes, in accordance with seasonal closures.
- Support resource protection and public safety through OST ranger presence and enforcement.

4.2 REGULATIONS AND POLICIES

Regulations and commercial/special-use policies seek to protect biodiversity and maintain natural resource values while allowing compatible public access.

TITLE 12

Title 12, Section-04-030 of the Pitkin County code outlines the “Rules Regarding Public Use of Pitkin County Open Space and Trails Program.” These rules apply to all Open Space assets unless otherwise superseded by easement language, management plans or other board direction and include, but are not limited to:

- no camping,
- no hunting,
- no campfires,
- no entry into closed areas,
- no discharging of firearms,
- no fireworks,
- no littering,
- no harassment of wildlife, etc.

NATURE PRESERVE REGULATIONS

The following regulations are applicable to Filoha Meadows Nature Preserve, in addition to regulations found in Title 12.

- Seasonal closure from Oct. 1 - June 30 to all recreational use. (Natural Resource Management Action 1).
- No dogs allowed.
- Closed from 30 minutes prior to dusk to 30 minutes after dawn, with the exception of OST-approved educational tours.
- Trail use is limited to pedestrian access. No biking, horseback riding or motorized use is permitted.



Guiding Philosophy

Filoha Meadows is managed for ecological integrity, education and limited recreation.

Quick Facts

Open Space Values:
Wildlife habitat, scenic views and high biodiversity.

Over 147 plant species identified, including 7 tree species, 27 shrub species, 32 grass species, 59 perennial forbs, 2 ferns, 18 annual/biennial forbs, 2 annual grasses.

72 bird species have been documented.

At least 27 mammal species are known to occur here.

Trail Miles: 2.5

Trail access via County Road 3b (aka Dorais Way).

Filoha Meadows Trail is closed from October 1 through June 30 for protection of wildlife and all trails are closed to dogs at all times.

ADMINISTRATIVE UNIT REGULATIONS

The following regulations are applicable to the Administrative Unit in addition to regulations found in Title 12.

- Public access within the Administrative Unit and parking is limited to educational programming and designated routes (See Access and Recreation Action 1).

SPECIAL AND COMMERCIAL-USE REGULATIONS

Research and Education

Environmental education programs and research are permitted at all parcels included in this plan, subject to approval by OST. Such uses are not considered commercial. See Filoha Meadows Nature Preserve Natural Resource Management Action 12 for more detail.

Commercial Use

No commercial activity is allowed at Filoha Meadows Nature Preserve or the Filoha Meadows Administrative Unit.

Special Uses and Events

Special-Use permits will be required for any use that is not listed in this plan. This includes any organized use of the property.

Potential special uses allowed at Filoha Meadows Nature Preserve are limited to:

- Environmental education beyond what is provided by OST or its partners.

To ensure the Filoha Meadows Administrative Unit will function as a hub for OST rangers and partner agencies, a launch point for educational programming and residences for land stewards, special uses or events within the boundaries of the Administrative Unit will be considered on a case-by-case basis, subject to the following parameters:

- Events are limited to those that are consistent with OST's mission and policies.
- Special uses or events are limited to those hosted by OST, partner agencies or environmental education/research groups.

MEMORIAL POLICY

All memorials placed on Pitkin County Open Space and Trails (OST) properties and trails are addressed in the adopted Stewardship Policies, which allows for individual management plans to determine the memorial policy for individual properties. For all parcels included in this plan, no memorials are permitted.

4.3 FILOHA MEADOWS NATURE PRESERVE MANAGEMENT ACTIONS

Actions listed in this plan build on those from the previous Management Plan (2008) and are guided by ecological studies and research, partner comments and public feedback. Management actions and associated projects look to advance multiple benefits to natural resources, recreation, historic resources, stewardship and maintenance. In the following pages, management actions are listed with descriptions of the desired outcomes. Where appropriate, the proposed steps or additional details toward progress are stated below each action.

NATURAL RESOURCES

Action 1.

Maintain the seasonal closure from October 1 through June 30 and apply to all parcels that are part of the Nature Preserve.

Desired Outcome: Critical wildlife habitat is protected from disturbance during critical times of the year. Human presence is both spatially and temporally limited.

Proposed Steps:

- Maintain current closure dates and spatial extent.
- Extend the seasonal closure and regulations to the Larson-Grange Loadout parcel and any future parcels added to the Nature Preserve through addendum.
- Continue to communicate with Colorado Parks and Wildlife about the closure dates and retain the ability to adapt the closure for extenuating ecological circumstances (severe winter, severe risk, etc.).
- Maintain administrative/research access outside of closure dates with permission from OST.

Action 2.

Protect, enhance and restore native habitat types as appropriate.

Desired Outcome: Habitats and ecosystems are trending toward a more native composition of flora and fauna that are more resilient to climatic and other environmental stress.

Proposed Steps:

- Continue efforts to reclaim old pasturelands via reseedling, soil testing and invasive plant control.
- Projects that are more experimental in nature are allowed on a case-by-case basis; their purpose must be directly related to informing management practices at Filoha Meadows.
- Mitigate forest encroachment into meadows to maintain sightlines for bighorn sheep and forage resources for all ungulates.
- Monitor and/or encourage beaver presence in the area to sustain ponded water habitat.

OST's overall philosophy and approach to managing natural resources now, and in the future, is to foster resiliency of the natural ecosystem – to support the health and function of local ecosystems so that native flora, fauna and natural processes can persist and adapt in a changing world.

Action 3.

Maintain collaboration with partner agencies that require access to the Nature Preserve to manage their public assets.

Desired Outcome: A collaborative environment supports management of natural resources at the landscape scale and across jurisdictional boundaries.

Proposed Steps:

- Maintain good communication with CPW, USFS and other partner agencies and support efforts that cross jurisdictional boundaries.

Action 4.

Maintain and promote healthy, resilient forests.

Desired Outcome: Forests and tree stands are resilient and healthy within and near Filoha Meadows. The reintroduction of disturbance creates a mosaic of habitat with diverse age-class and structure, which supports greater biodiversity, improves wildlife habitat and reduces wildfire fuels.

Proposed Steps:

- Consider recommendations from the forthcoming Forest Health Assessment for specific project implementation, including actions such as small-scale herbivory protection, root stimulation, tree planting, mechanical thinning, prescribed fire, etc.
- Continue to collaborate with partners to support and allow prescribed fires and/or mechanical treatment on the Nature Preserve and adjacent public lands to improve wildlife habitat and reduce wildlife risk.
- Allow for other forest-health projects as needed.

Action 5.

Maintain wildlife movement and migration corridors.

Desired Outcome: Wildlife of all species does not face additional challenges in their daily and seasonal movements and migrations.

Proposed Steps:

- Avoid actions that result in habitat fragmentation.
- Through stewardship activities, identify barriers to movement and address as possible (remove fences, promote habitat continuity and transitions).
- Work with Roaring Fork Safe Passages and/or similar groups addressing wildlife connectivity in the greater area.

Action 6.

Support pollinators and pollinator habitat.

Desired Outcome: A diversity of plants and habitat exist to support pollinator species throughout the seasons, including but not limited to bats, bees, syrphid flies (for orchid pollination), monarch butterflies and other insects.

Proposed Steps:

- Conduct targeted seed collection/reseeding efforts for high-value forbs, such as milkweed. Develop a native seed mix specific to the Nature Preserve so any reseeding includes appropriate forbs.
- Ensure all weed-control staff and contractors are aware of milkweed locations and abstain from spraying herbicides in their proximity.
- Ensure woody debris remains on the property to meet pollinator habitat needs.
- Seek additional information on the distribution and use of Filoha by monarch butterflies.

Action 7.

Monitor and protect rare orchids.

Desired Outcome: Unique resources like the stream orchid persist at Filoha Meadows, as environmental conditions allow.

Proposed Steps:

- Continue targeted control of Canada thistle near orchid hotspots.
- Conduct quantitative monitoring of orchid populations according to monitoring intervals.
- Groundwater monitoring related to orchid persistence.
- Manage adaptively to promote persistence and resilience of orchids and associated rare plants in the wet meadows.

Action 8.

Continue riparian restoration.

Desired Outcome: Riparian canopy along the Crystal River is expanded, with a diversity of species and age classes represented in the riparian zone.

Proposed Steps:

- Continue current riparian restoration in the old pasture.
- Once established, expand to other areas in this old pasture.
- Evaluate other stretches of riparian habitat for intervention needs such as plantings, vegetative stimulation, etc.

Action 9.

Preserve and protect onsite water resources.

Desired Outcome: River and wetlands hydrology and soils are maintained for provision of ecological services and habitat for native flora and fauna.

Proposed Steps:

- Ensure the persistence of the fen, wetland hydrology and soils. No actions are currently needed as these systems are functioning well, however if they are compromised in the future, actions may be needed.
- Research water-quality data for the area via partners and ensure data collection continues on the Crystal River at or near Filoha Meadows.

Action 10.

Control weeds and promote native plant communities.

Desired Outcome: Noxious weeds are controlled as required by the State of Colorado Noxious Weed Act. Other invasive plants are controlled as appropriate when threatening native plant populations.

Proposed Steps:

- Continue noxious-weed monitoring and noxious-weed control.
- Develop and implement weed control protocol. Ensure all weed-control staff and contractors are aware of rare and sensitive plant species and adapt control techniques accordingly.
- Investigate the extent of such invasive plants as reed canary grass and cheatgrass, which threaten to outcompete natives. Control as needed while minimizing use of herbicides.
- Reseed areas of bare soil or areas in need of enhanced native plant diversity – use seed collected onsite and/or local ecotypes when possible.

Roaring Fork Conservancy Programs

First Program: 2004

Total Number of Programs: 150

- Firefly and Rare Orchid Walk
- Elk Bugling
- Busy Beavers
- Fireflies, Bats and Bugs

Total Number of Program Participants: 2,791



Filoha's thermally heated wetlands attract inspection by visitors.

Action 11.

Implement wolf reintroduction awareness as needed.

Desired Outcome: Ensure staff, local residents and land managers are aware of wolf reintroduction and best management practices to adapt to this species' presence in Colorado.

Proposed Steps:

- Staff to monitor the reintroduction process.
- Coordinate with CPW as needed.
- Provide guidance as needed to the public in the case of wolf presence at Filoha.

Action 12.

Allow external research on a case-by-case basis.

Desired Outcome: Allow for scientific research of biodiversity elements at Filoha for universal knowledge as well as to guide management.

Proposed Steps:

- Interested researchers shall contact OST with a research proposal.
- Research may be allowed if it aligns with OST's mission, the adopted Filoha Management Plan and has minimal impact to the area.

EDUCATION AND OUTREACH

Action 1.

Coordinate public education opportunities such as firefly tours and other guided natural resource tours with Roaring Fork Conservancy (RFC) or similar groups.

Desired Outcome: Promote education of the unique natural resources found at the Nature Preserve among a diversity of community members.

Proposed Steps:

- Support program development and delivery.
- Support outreach to encourage public participation.
- Support bilingual outreach and advertisements.
- Develop and/or grow partnerships with groups that will implement programs targeted at youths, seniors and bilingual or Spanish-speaking audiences.

Action 2.

Install a sign at the entrance to the Nature Preserve.

Desired outcome: Provide the regulations and interpretive content to visitors.

MONITORING AND STEWARDSHIP

Action 1.

Continue wildlife and vegetation monitoring at regular intervals.

Proposed Steps:

- Follow recommended monitoring intervals for wildlife, vegetation, orchids, noxious weeds and water resources.
- Engage ecological consultants and/or staff to implement monitoring.
- Review reports and archive to data repository. Results will guide future actions and management direction in an adaptive manner, as an integral part of the adaptive management strategy OST employs at all Nature Preserves.

Table 5. Filoha Meadows Nature Preserve Natural Resource Monitoring Schedule

PARAMETER	INTERVAL
Vegetation	
Noxious Weeds	Annually
Floristic Inventory & Plant Community Map	Every 5-10 years
Permanent transects	Every 5-10 years
Rare Plant (Orchid) Surveys	Every 3 years, or as needed for adaptive management
Wildlife	
Mammals	Every 5-7 years
Songbirds & Raptors	Every 3 years



OST staff monitoring groundwater



Vegetation transects for plant monitoring at Filoha Meadows.

Action 2.

Exercise Wilke Ditch water rights.

Desired Outcome: Maintain opportunities for natural resource and river flow enhancement by exercising water rights within the Crystal River drainage.

Proposed Steps:

- Continue to use and document Wilke Ditch water rights.

Action 3.

Monitor geothermal wetlands.

Desired Outcome: Ensure geothermal withdrawals are within legal agreements and do not have any detrimental impacts to the local wetlands.

Proposed Steps:

- Review existing water rights documentation and agreements.
- Consider monitoring methods such as wet wells in the wetlands area for onsite conditions, remote monitoring, and/or work with neighbors to monitor use.
- Watch for opportunities to secure or protect geothermal resources for the benefit of the natural ecosystem.

Action 4.

Conduct a cultural resource assessment to identify and evaluate the cultural resources of the Nature Preserve.

Desired Outcome: Ensure the protection of important cultural heritage.

Proposed Steps:

- Review findings from relevant reports.
- Conduct a structural assessment of the existing barn and review improvements necessary to stabilize and protect the structure.
- Engage a consultant to conduct an archaeological and cultural resource survey in accordance with Section 106 of the National Historic Preservation Act of 1966.
- Further testing of archaeological sites as necessary.
- Through consultation and agreement with federal, state, local and tribal authorities, develop a strategy to safeguard the area from any adverse impacts.

Action 5.

Continue to monitor recreational use and non-compliance.

Desired Outcome: Understand the amount of use as well as compliance with seasonal closures and other regulations.

Proposed Steps:

- Continue placement of motion-triggered wildlife cameras in established locations and relocate as needed.



RECREATION

Action 1.

Continue to limit public recreation access to pedestrian use only on the Filoha Meadows Trail.*

Desired outcome: Continue to minimize public recreation impacts by limiting use to pedestrian use only. No off-trail travel is permitted except for educational groups guided by staff or trained volunteers.

Proposed steps:

- Allow limited off-trail use that may be adapted to the type and content of the programming for educational groups guided by staff or trained volunteers.
- All routes will be approved by OST staff.

*This management action replaces the Travel Corridors established in the 2008 Management Plan to effectively achieve that same management goal. Travel Corridor A is the Filoha Meadows Trail. Reference to Travel Corridor B is removed to allow for more adaptive routes to support educational programs and incentivize participation in educational programming by permitting limited off-trail use.

Action 2.

Prohibit fishing/wading on the Filoha Meadows Nature Preserve and Larson-Grange Loadout riverbanks.

Desired outcome: Protection of streambank habitat and confinement of public access to the Filoha Meadows Trail, consistent with existing messaging regarding pedestrian access on the property.

Proposed steps:

- Place no-fishing signage at the north and south boundaries of Filoha Meadows, and on the Larson-Grange Loadout property, and include the prohibition on pitkinoutside.com.

MAINTENANCE

Action 1.

Maintain the Beaver View viewing blind as needed.

Desired Outcome: The Beaver View viewing blind will be maintained and necessary safety improvements will be performed.

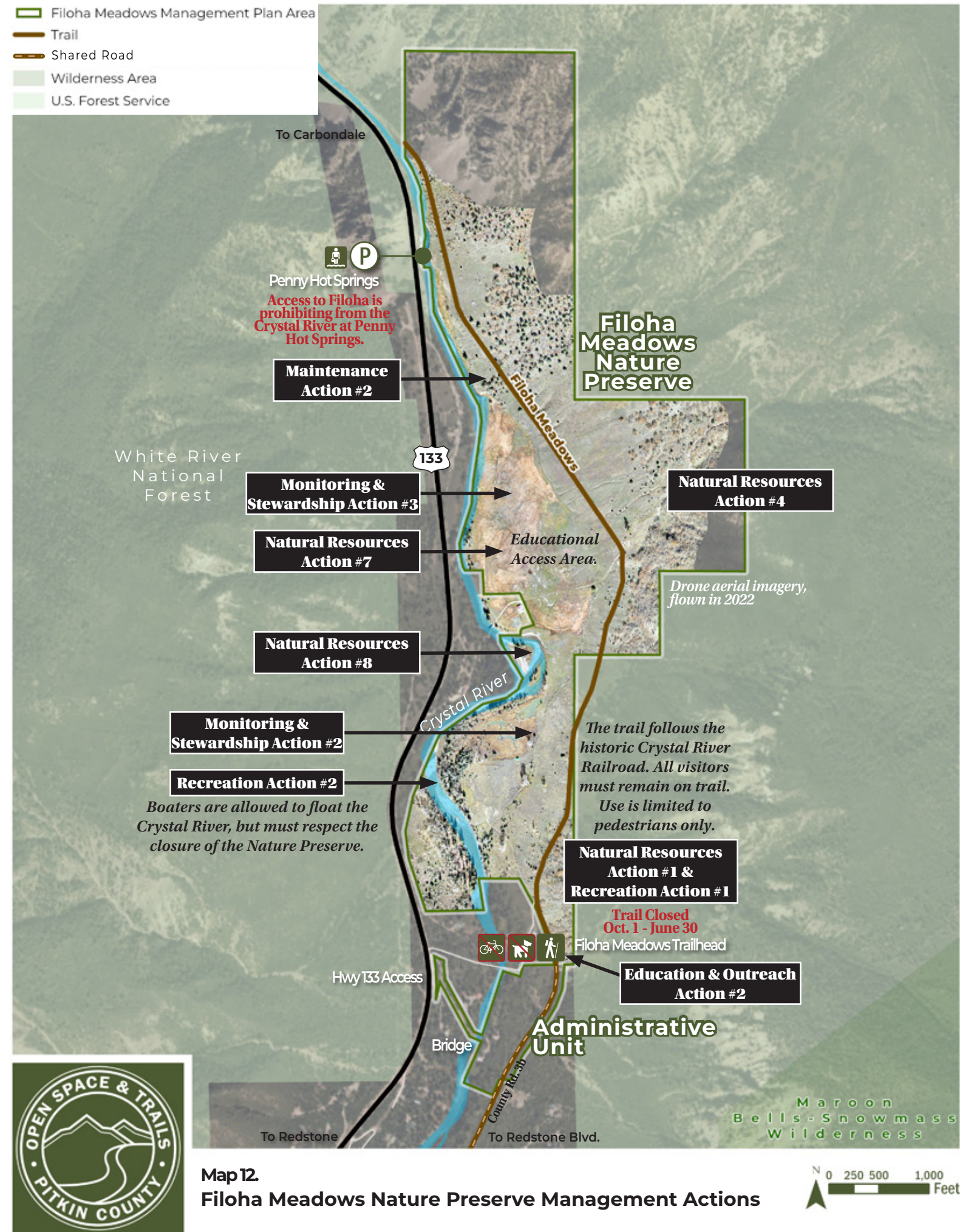
Action 2.

Explore potential for under-grounding utilities.

Desired Outcome: Bury the electrical utility line that traverses a portion of Filoha Meadows Nature Preserve to enhance aesthetics, reduce wildfire risk and reduce Holy Cross's maintenance access need/presence (i.e wildlife disturbance) by having to maintain an above-ground utility right-of-way.

Proposed Steps:

- Contact Holy Cross with proposal.
- Review budget and weigh the benefits and impacts.



4.4 ADMINISTRATIVE UNIT MANAGEMENT ACTIONS

Planning for open space properties with existing structures continues to be one of the more difficult, but potentially enriching aspects of management. Residential use of structures on open space can help facilitate land steward response and management within the Crystal Valley and/or provide critical affordable housing. Additionally, an onsite resident can assist in property maintenance, which provides an important level of attention in this remote area of the county. Actions in this plan are guided by property reports, partner comments and public feedback. Management actions and associated projects look to advance multiple benefits to natural resources, recreation, public safety, enforcement stewardship and maintenance. In the following pages, management actions are listed with descriptions of the desired outcomes. Where appropriate, the proposed steps or additional details toward progress are stated below each action.

NATURAL RESOURCES

Action 1.

Monitor condition of riparian areas and native habitats and protect or enhance as needed.

ACCESS AND RECREATION

Action 1.

Close the Administrative Unit to general public access and parking. This closure does not apply to educational tour access. A route may be designated to support Crystal Valley Trail connectivity.

Desired Outcome: The Administrative Unit functions as a hub for OST rangers and partner agencies, a launch point for educational programming and residences for land stewards. The property is closed to general public access and parking but supports access and parking for educational tours. A designated route through the Administrative Unit may be utilized to support Crystal Valley Trail connectivity.

Proposed Steps:

- Install signs to alert the public of the closure, including no access to boat launching or boat access.



The Administrative Unit bridge, refurbished in 2021, during high flows.

Action 2.

Construct access from the Administrative Unit to County Road 3b (aka Dorais Way) via a two-track access road.

Desired Outcome: A two-track access road from/through the Administrative Unit to County Road 3b (aka Dorais Way) gives OST and educational programs direct access to Filoha Meadows Nature Preserve, utilizing the Administrative Unit bridge. The road supports educational tours, access for maintenance and monitoring purposes and provides emergency access to County Road 3b (aka Dorais Way) residents who could be isolated due to wildfire, flash-flood debris flows or if neighboring bridges fail.

Proposed Steps:

- Determine the most desirable and cost-efficient route for the proposed two-track road.
- Contract and complete construction of two-track road.

Action 3.

Identify a parking area for educational programs and implement necessary site improvements.

Desired Outcome: Parking for participants of educational programs at Filoha Meadows Nature Preserve is adequately accommodated at the Administrative Unit.

Proposed Steps:

- Evaluate parking needs of educational programs.
- Select the appropriate site to accommodate the parking area, with sensitivity to screening from neighboring properties.
- Construct necessary improvements to define parking spaces.

HOUSING AND STRUCTURES

Action 1.

Complete necessary renovations to Unit A and Unit B to support housing for land stewards and/or law enforcement and public safety staff.

Desired Outcome: Much-needed employee housing for OST staff or other aligned land and public safety managers is provided.

Proposed Steps:

- Retain architectural and engineering services to explore the feasibility and cost to renovate the existing structures.
- Review alternatives with Pitkin County Community Development.
- If at any point it is determined that the cost is too great or there are other unforeseen challenges that make utilizing the existing homes or OST funds infeasible, alternatives can be explored, including:
 - » A long-term lease of the house to a partner agency that can renovate and then inhabit the house.
 - » Subdivide and resell the parcel, per the rights reserved in the purchase contract.
- OSTB approval will be sought at key decision points or project milestones and as budgets are approved prior to implementation.

Action 2.

Convert Unit B garage into an OST Ranger/Maintenance Station to provide a workspace for rangers and a touch-down station for partner agencies (law enforcement, public safety, land stewards) and a workshop for maintenance and equipment, and material storage.

Desired Outcome: The Ranger Station provides rangers, frequently assigned shifts in the Crystal Valley, with a critical space to connect to Wi-Fi in a portion of the county with spotty cell and radio connection. Creating a space for OST rangers facilitates an increase in time spent in the Crystal Valley; gives the rangers a space to write their reports and electronic documentation; increases communication with other rangers, staff and agencies; and allows for readily available responses to issues in the Crystal Valley. A touch-down space for partners such as deputies, CPW, USFS, public-safety personnel and land stewards provides access services for communication and a work area. A maintenance area allows space to store equipment and materials for Crystal Valley properties and trails.

Proposed Steps

- Solicit architectural and engineering services to renovate the space to provide a maintenance workshop/storage area, work stations (desks, computers, etc.) and restroom.
- Provide adequate utilities including but not limited to electricity, heat, water/sewer, Wi-Fi, etc.

MAINTENANCE

Action 1.

Perform hazard tree mitigation.

Desired Outcome: Improve public safety and mitigate hazard trees and limbs in cottonwood grove that is within proximity to the parking area for educational tours and along access trail to Filoha Meadows.

Proposed Steps:

- Host informal bid process for arborist companies to bid on removal of hazard trees and limbs (greater than 2-inch diameter) within the defined area that is within proximity to the parking area and along the access trail to Filoha Meadows.



Map 13.
Filoha Meadows Administrative Unit Management Actions



The U.S. Forest Service conducted a controlled burn on the hillside above Filoha Meadows Nature Preserve in 2016.

5. Implementation

Working together with partners, OST is directed to implement the 2024 management plan efficiently and effectively. Management actions, detailed in **Section 4**, will directly inform OST work plans over time and provide ways of communicating progress to the public, the Open Space and Trails Board and Board of County Commissioners. The following tables provide timing, partners and anticipated costs for the implementation of management and maintenance actions identified in this plan.

FILOHA MEADOWS NATURE PRESERVE MANAGEMENT ACTIONS		TIME FRAME	PARTNERS	BUDGET
NATURAL RESOURCES				
NR.1	Maintain the seasonal closure from October 1 through June 30 and apply to all parcels that are part of the Nature Preserve.	Short- and long-term	OST	N/A
NR.2	Protect, enhance and restore native habitat types as appropriate.	Ongoing	OST	\$ - \$\$\$
NR.3	Maintain collaboration with partner agencies that require access to the Nature Preserve to manage their public assets.	Ongoing	OST, adjacent land owners	N/A
NR.4	Maintain and promote healthy, resilient forests.	Ongoing	OST, adjacent land owners	\$ - \$\$\$
NR.5	Maintain wildlife movement and migration corridors.	Ongoing	OST, adjacent land owners	\$ - \$\$
NR.6	Support pollinators and pollinator habitat.	Ongoing	OST	\$ - \$\$
NR.7	Monitor and protect rare orchids.	Ongoing	OST	\$\$
NR.8	Continue riparian restoration.	Ongoing	OST	\$ - \$\$\$
NR.9	Preserve and protect onsite water resources.	Ongoing	OST	TBD
NR.10	Control weeds and promote native plant communities.	Ongoing	OST	\$ - \$\$\$
NR.11	Implement wolf reintroduction awareness as needed.	Short-term	OST	\$
NR.12	Allow external research on a case-by-case basis.	Ongoing	OST	N/A
EDUCATION AND OUTREACH				
EO.1	Coordinate public education opportunities such as firefly tours and other guided natural resource tours with Roaring Fork Conservancy (RFC) or similar groups.	Ongoing	OST	\$\$
EO.2	Install a sign at the entrance to the Nature Preserve.	Short-term	OST	\$
MONITORING AND STEWARDSHIP				
MS.1	Continue wildlife and vegetation monitoring at regular intervals.	Ongoing	OST, research consultants	\$\$\$
MS.2	Exercise Wilke Ditch water rights.	Ongoing	OST	N/A
MS.3	Monitor geothermal wetlands.	Ongoing	OST, adjacent land owners	TBD
MS.4	Conduct a cultural resource assessment to identify and evaluate the cultural resources of the Nature Preserve.	Short- and long-term	OST	\$\$\$
MS.5	Continue to monitor recreational use and non-compliance.	Ongoing	OST	\$
RECREATION				
R.1	Continue to limit public recreation access to pedestrian use only on the Filoha Meadows Trail	Ongoing	OST	N/A
R.2	Prohibit fishing/wading on the Filoha Meadows Nature Preserve and Larson-Grange Loadout riverbanks.	Short-term	OST	N/A
MAINTENANCE				
M.1	Maintain the Beaver View viewing blind as needed.	Long-term	OST	\$
M.2	Explore potential for under-grounding utilities.	Long-term	OST, Holy Cross Energy	\$\$\$

ADMINISTRATIVE UNIT MANAGEMENT ACTIONS		TIME FRAME	PARTNERS	BUDGET
NATURAL RESOURCES				
NR.1	Monitor condition of riparian areas and native habitats and protect or enhance as needed.	Ongoing	OST	TBD
ACCESS AND RECREATION				
AR.1	Close the Administrative Unit to general public access and parking. This closure does not apply to educational tour access. A route may be designated to support Crystal Valley Trail connectivity.	Short-term	OST	N/A
AR.2	Construct access from the Administrative Unit to County Road 3b (aka Dorais Way) via a two-track access road.	Short-term	OST	\$\$
AR.3	Identify a parking area for educational programs and implement necessary site improvements.	Short-term	OST, adjacent land owners	\$\$
HOUSING AND STRUCTURES				
HS.1	Complete necessary renovations to Unit A and Unit B to support housing for land stewards and/or law enforcement and public safety staff.	Short- and long-term	OST	\$\$\$
HS.2	Convert Unit B garage into an OST Ranger/Maintenance Station to provide a workspace for rangers and a touch-down station for partner agencies (law enforcement, public safety, land stewards) and a workshop for maintenance and equipment and material storage.	Short- and long-term	OST	\$\$\$
MAINTENANCE				
M.1	Perform hazard tree mitigation.	Short-term	OST	\$

KEY	
\$	<\$10,000
\$\$	\$10,000 - \$75,000
\$\$\$	>\$75,000
Short-Term	0-5 years
Long-term	5+ years
Ongoing	Annual / routine

Anticipated costs represent a range of possible expenditures, subject to change over time.

