

# Heil Valley Ranch 2

## Small Area Plan



**Parks &  
Open Space**



## **Boulder County Parks & Open Space Heil Valley Ranch 2 Small Area Plan**

**May 31, 2016**

The Heil Valley Ranch 2 Small Area Plan provides guidance to Boulder County Parks & Open Space on management goals at Heil Valley Ranch 2 Open Space.

A public open house was held in April 2015 at the BCPOS building. Public comments on this draft management plan were accepted from February 3 – March 3, 2016. All public comments were analyzed and any necessary revisions to the draft plan were made. The draft plan was presented to the Parks & Open Space Advisory Committee on February 25, 2013, beginning at 6:30 p.m. After receiving additional public comment (from April 11-21), the plan was presented to the Boulder County Board of County Commissioners on April 28, 2016. The commissioners asked for revisions. Completed revisions were presented to the Parks & Open Space Advisory Committee on May 26, 2016 at 6:30 p.m. and to the County Commissioners on May 31, 2016 at 3:30 p.m.

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Parks & Open Space Department • Boulder County

**ADOPTED:**



**Elise Jones**

Chair, Board of County Commissioners

5/31/16

Date



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## Introduction

Heil Valley Ranch 2 (“Heil 2”) is a 210 acre property of grasslands and small timber stands, nestled between two steep hogbacks north of Lefthand Creek. From 1949 into the 21<sup>st</sup> Century, the property was part of the large ranch owned by the Heil family. In 1996 Boulder County purchased 1,214 acres from the family to create Heil Valley Ranch Open Space. What is now Heil 2 remained the center of the family’s ranching operation until it was purchased by the county in 2012. By 2014, the last ranch activities ceased on the property and the county began to gather baseline information that informs this Small Area Plan.

This Heil 2 Small Area Plan provides the residents of Boulder County with a guide to the various resources on the property. It describes the management goals set forth by Boulder County Parks and Open Space (BCPOS) and explains how specific management tasks will reach those goals. The plan describes the long-term vision for how the property will be managed. The department’s land management activities will be guided by this plan, the Boulder County Comprehensive Plan, BCPOS resource policies, and the BCPOS rules and regulations.

## Purpose and Need

Boulder County Parks and Open Space seeks to manage county-owned property in a conscientious and comprehensive manner. This small area plan provides both the management direction for the property and the justification for that management direction. This more focused planning document will provide the details necessary to understand the management of this parcel of land.

The Boulder County Comprehensive Plan requires BCPOS to develop management plans for open space properties. These plans must be reviewed by the public and approved by the county commissioners, thereby ensuring that a property’s management reflects and responds to community interests and concerns. BCPOS develops management plans by bringing together an interdisciplinary team staff team to develop management guidance that is developed with public input, reviewed by the Parks and Open Space Advisory Committee (POSAC), and approved by the Boulder County Board of County Commissioners (BOCC). This small area plan has been written to allow this property to be included in the North Foothills Open Space Management Plan when that plan is revised.

Boulder County Parks and Open Space chose to develop this Small Area Plan as a result of the confluence of a number of events. This property would normally be considered part of Heil Valley Ranch and would be covered under the North Foothills Open Space Management Plan. However, the development of regional trail connections, flood damage, and trailhead crowding make opening and providing access through this property a priority for Boulder County. This plan will focus on the main purposes for the management and development of this property and attempt to reduce the amount of background information in the main document. The data used to support decisions will be available online and through appendices.

The landscape of the mountain front just west of the plains in Boulder County makes community connections possible. Long, narrow north-south oriented valleys link the City of Boulder with the Town of Lyons. The Boulder County Comprehensive Plan encourages these trail connections and with the City



of Boulder's interest in connecting to Heil Valley Ranch, BCPOS saw an opportunity to conscientiously plan a link between Lefthand Canyon Drive and Heil Valley Ranch through the Heil 2 property.

While the geography of the valleys in the foothills make connections possible, these areas are also important links to our historic and pre-historic past. BCPOS is responsible for the protection of cultural resources on Open Space properties in perpetuity. Public access on the property could impact these resources and a public planning process allows for the careful consideration of how to both protect and interpret these cultural resources to enrich the open space experience.

The foothills also comprise a zone that links the ecosystems of plains to the east with the mountains to the west. These transitional areas are both vital to adjacent ecosystems and often play host to unusual or vital communities. BCPOS must consider the impact of additional use for recreation and/or education on these ecosystems and communities of plants and wildlife.

The Small Area Plan will address these needs through considered management practices. The Heil 2 Small Area Plan provides both a management direction and an outline of the specific management tasks that will be carried out by Parks and Open Space throughout the life of the plan. These specific tasks are laid out in a table at the end of the Small Area Plan. While not all of these tasks can be tied to a specific project, many will appear on the Capital Improvement Plan (CIP) or in the Operation and Maintenance (O&M) budget. The CIP and O&M budget are the source of the work plans for the various divisions of Parks and Open Space each year. These plans help management and staff define yearly goals and should help the public understand the priorities of Parks and Open Space from year-to-year.

## **Management Goals**

To establish a management direction for a property, BCPOS generally develops a set of. These are the overarching principles to which management decisions should be measured. Heil 2 Small will be managed as part of North Foothills Open Space and thus would fall under the management plan for those properties. Therefore, the existing management goals from the NFOS plan form the guidance for the Heil 2 Small Area Plan.

The Management Goals established for the North Foothills Open Space Management Plan were adopted by the Board of County Commissioners in April 1996:

1. Protect the scenic quality and undeveloped nature of the properties.
2. Protect the ecosystem functions of the properties relative to their values within the North St. Vrain and South St. Vrain/Foothills Environmental Conservation Areas.
3. Protect and properly manage significant plant and animal communities, and rare plants and animals.
4. Preserve the cultural, historical, geological and archaeological integrity of the area.
5. Manage for ecosystem integrity by encouraging and planning for naturally occurring process so they will remain vital components of the ecosystem.



6. Manage vegetative communities by maintaining and encouraging desirable native species, restoring degraded areas, and controlling undesirable exotic species.
7. Protect wildlife habitat by maintaining natural food, cover, nesting sites, resting areas and habitat effectiveness.
8. Provide passive outdoor recreation opportunities which do not adversely impact sensitive resources.
9. Provide opportunities for environmental and cultural interpretation to the public.
10. Provide a good neighbor policy to adjacent neighbors.

## **Planning Context**

In order to implement the management goals effectively, it is important to establish the context within which Heil 2 exists. The property's location, existing infrastructure, and the proposals for use all influence how a property is managed. The following section should provide an overview of that context.

### **Location**

Heil 2 is located in north central Boulder County (Figure 1) where Geer Canyon Creek flows into Left Hand Creek. The property is west of US Highway 36 and north of Left Hand Canyon Drive. Geer Canyon Drive follows Geer Canyon Creek along the north-south axis of the property. The property is bordered on the west and north by Heil Valley Ranch Open Space and to the east and south by private property.

Located between the Dakota Hogback on the east and the mountain front on the west (Figure 2), the property is located in the transition zone between the plains and the mountains of Colorado. These transition zones often contain species that are common in one of the larger ecological regions but would be rare or absent in the adjacent region. These ecotones also provide habitat for species that would be uncommon in both adjacent regions. Boulder County Parks and Open Space recognizes the vital importance of protecting these areas of transition.

### **September 2013 Flood Event**

During a 48-hour period on September 12 and 13, 2013 a significant amount of rain fell in Boulder County. This event had various impacts across the county depending on the watershed and the location. Some creeks saw extremely high flows consistent with 100-year flood events. Most others saw flows consistent with a 50 to 25-year event. The impacts were felt across the county and damages on County Open Space alone are estimated to have been more than \$50 million.

Geer Canyon Creek which flows through the center of Heil 2 was significantly impacted by the heavy rain fall. The volume of water was extremely high for a small creek and as waters flowed south through the property floodwaters impacted Geer Canyon Drive, scouring the creek to bed rock and removing most riparian vegetation, destroying ditch infrastructure, and heavily damaging a small residence in the southeast corner of the property.



## Visitor Surveys

Boulder County Parks and Open Space performs a system-wide visitor study every five years (<http://www.bouldercounty.org/os/culture/posresearch/visitor-study-2015.pdf>). These studies are intended to help managers understand how visitors are using the parks throughout the system. Since Heil 2 is not yet open, it was not included in the 2015 Visitor Study. However, the findings from Heil Valley Ranch provide a helpful example of visitor attitudes and usage trends in the area.

### *Visitor Activity*

Primary Activity	2015	2010	2005	2000
<b>Bike</b>	50%	53%	60%	--
<b>Hike</b>	35%	29%	25%	64%
<b>Run</b>	9%	15%	7%	2%
<b>Picnic</b>	-	1%	1%	25%
<b>Other</b>	6%	2%	7%	--

During the surveys the information was gathered by volunteers and staff over both weekends and weekdays at times throughout each day. At Heil 160 users were surveyed in 2015. In 2015, Heil Valley Ranch had the highest percentage of users (35%) to indicate a desire for more trails. Heil Valley Ranch also had amongst the highest percentage of respondents reporting feeling at least, “somewhat crowded” (25%).

In 2006, BCPOS proposed permanently closed Heil Valley Ranch to dogs. This permanent closure followed a temporary closure and study period. The purpose of the closure is to protect wildlife on the property. The impact of the closure was studied and public opinion surveys at the time supported making the prohibition permanent. Surveys carried out in 2004 found that 63% of users at Heil Valley Ranch supported the closure while 44% supported it at Rabbit Mountain a nearby open space open to dogs. In 2005, the visitor use survey found that only 39% of dog owners visiting Heil Valley Ranch wanted to lift the provision.

## Planning Guidance

The Heil 2 Small Area Plan is the culminating plan for land management on this specific property. The foundational document for open space planning in Boulder County is the Boulder County Comprehensive Plan. The Department’s subject area policies guide management plan development with respect to specific resources on the property. When taken together they can create the boundaries or “sideboards” of what the plan can and should propose for management of the property.



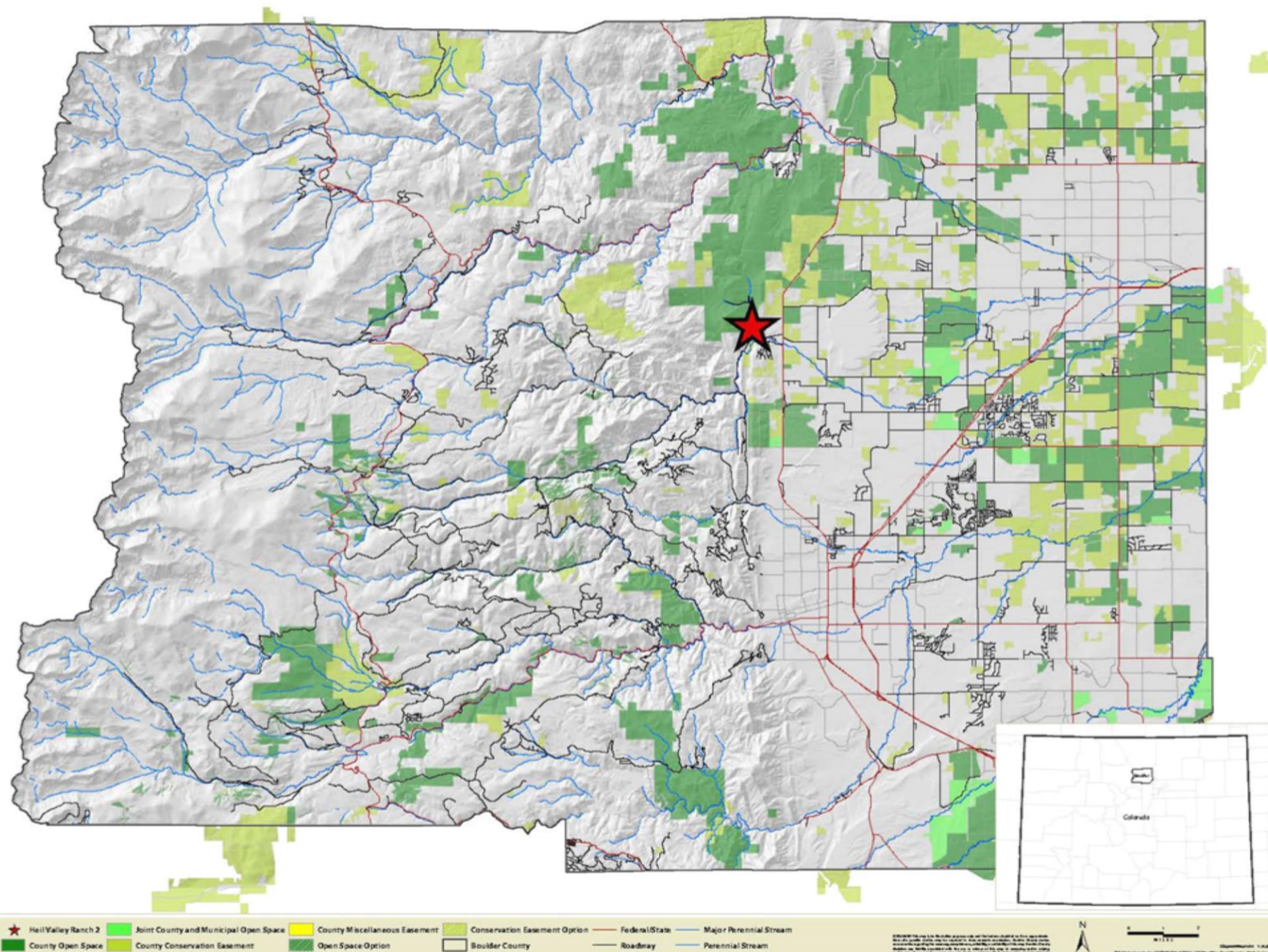


Figure 1: County Context



# Heil Valley Ranch 2 Management Plan: Site Overview

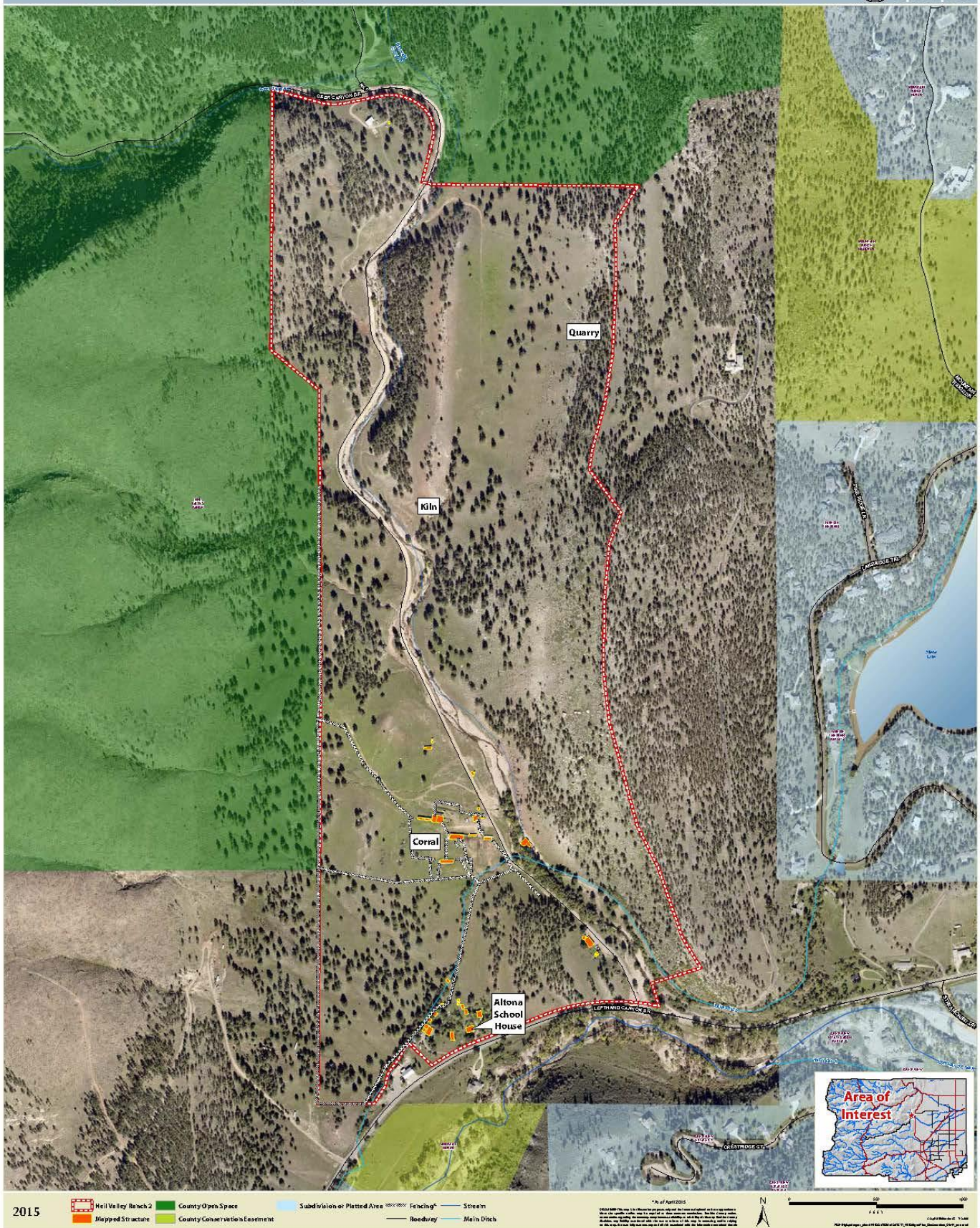


Figure 2: Property Overview



The Open Space Element of the Comprehensive Plan provides the goals and policies that guide the work of BCPOS. OS 8.03 states:

*In developing management plans for open space areas, Parks and Open Space staff shall solicit public participation of interested individuals, community organizations, adjacent landowners and the Parks and Open Space Advisory Committee. Plans shall be reviewed by the Parks and Open Space Advisory Committee, including public comment, and recommended for adoption after public hearing by the Board of County Commissioners.*

The Open Space Element provides additional guidance on a variety of subjects vital to the definition the management direction for Heil 2. These policies impact the core mission of Parks and Open Space and provide the grounding for decisions (<http://www.bouldercounty.org/doc/landuse/bococomplan.pdf>).

In an effort to clarify some of the overarching principles of open space management, BCPOS staff created a series of resource policies reviewed by POSAC and approved by the Board of County Commissioners. There are four approved resource policies (Forestry, Conservation Easement, Water, and Cropland) and the department anticipates developing an additional four policies (Cultural Resources, Grassland and Shrubland, Visitor Use, and Wildlife). These policies are developed through a public process and help the department by defining major themes of management. While this plan is not able to take advantage of the next round of policies, staff members that will be involved in their development were able to assess resources and propose opposes that apply to Heil 2 and that will likely become components of those documents.

On April 7, 2015 Boulder County Parks and Open Space hosted an open house for public comment on the development of a Small Area Plan for Heil 2. The comments provided are catalogued in Appendix A. Comments received at the meeting and in the subsequent 30-day comment period were distributed to the project team for review. The major themes of the comments included a desire for a diversity of user experiences, multiple bike trails, separation of uses, additional parking, and respect for the ecological importance of the property.

In July, the Parks and Open Space Advisory Committee (POSAC) and the public were invited to tour the property and see some of the opportunities and constraints. The site visit allowed the public and POSAC to hear directly from staff about on-going planning questions and to offer their own perspectives.

These efforts at public outreach tie together the research and data gathered by staff with the perceptive ideas of the public to help our staff develop a coherent management strategy for Heil 2. When combined with our rules and regulations and the guidance of the Comprehensive Plan and BCPOS Resource Policies, we are able to create a management direction.

## **Management Objectives**

The Heil 2 Small Area Plan revolves around three objectives that were identified in the purpose and need section earlier in the plan and then reinforced by the Management Goals. These objectives address off-road access and recreation needs, the protection and conservation of plants and wildlife, and the



conservation and interpretation of cultural resources. These three objectives form the backbone of this plan. In the following section, the objectives are described, resources are identified, and the management direction is described.

## **Off-road Access & Recreation**

The Boulder County Comprehensive Plan encourages the creation of off-road connections between communities. The County Trails Map of the BCCP identifies a Conceptual Trail Corridor through Heil 2 along Geer Canyon, from Lefthand Canyon up through Heil Valley Ranch where existing trails connect north to Lyons. At the same time, the City of Boulder has developed trails that reach from the City of Boulder to Olde Stage Road near the intersection with Left Hand Canyon Drive. An off-road trail at Heil 2 would provide over another mile of trail to bring the Lyons-to-Boulder connection closer to reality.

Geer Canyon Drive provides access to Heil Valley Ranch. However, an off-road trail provides a safer, more enjoyable and appropriate connection from Lefthand Canyon Drive to Heil Valley Ranch for cyclists and pedestrian traffic. Developing trails and facilities requires an understanding of our user community and of the natural and cultural resources on the property. Once planned, trail and facility construction will move forward with oversight from natural and cultural resource staff.

### **Trails**

The facilities map shows the conceptual location for trails to be developed on Heil 2 (Figure 3). These trails are designed to capitalize on the location of Heil 2 while working within the very narrow topography of the property. Both east and west side trails will briefly enter the Heil Valley Ranch property for connectivity, sustainability, and user safety.

#### **1. West Side**

The trails on the west side of the property are designed to provide a multi-use connection between Lefthand Canyon Drive and the existing trails on Heil Valley Ranch. The trail will cross the Lake Ditch before separating to create a “beginner’s loop between the Lake Ditch and the proposed Heil 2 trailhead. North of the trailhead the trail will split to create a single-direction loop trail. The loop will be field-located by staff and will be designed to minimize crowding, trail impacts, and impacts to wildlife and vegetation.

#### **2. East Side**

The trail on the east side of the property is intended to connect the Corral Area with the Heil Valley Ranch trailhead. The trail will be open to pedestrians and equestrians only. The trail will use a “low water crossing” structure to cross Geer Canyon Creek without a bridge structure. The trail will provide opportunities to view historic sites as well as the two rare plant alliances located in the northern part of the property. A short spur trail to the Grindstone Quarry will allow pedestrians a closer look and, with signage, an interpretation of the unique site. There will be a pedestrian/equestrian only spur trail that will link the east and west side trails at the north end of Heil 2 utilizing an improved culvert crossing (to be constructed by Boulder County Transportation to connect Geer Canyon Drive with an existing access road).



## Trailheads

At Heil 2, trailheads provide access to trails, cultural resources, and educational opportunities.

Trailheads are located near adjacent roads where people will use them, and where they will have minimal impact on the important natural and cultural resources on a property. The proposed trailheads at Heil 2 are intended to add overall vehicle parking capacity and to enhance equestrian access to the North Foothills Open Space and provide direct access to the recreational opportunities within the Heil 2 property itself. Heil 2 trailhead improvements are listed and described below:

### 1. Develop Trailhead at Corral Area

Parks and Open Space will design and construct a trailhead adjacent to the existing corral area (Figure 3). The trailhead will include four horse-trailer parking spots and 20 passenger vehicle spots. The trailhead will be designed in the same fashion as the other Heil Valley Ranch trailheads and will include a restroom. The development of this trailhead will allow BCPOS to remove equestrian spaces from the Heil Valley Ranch trailhead, which will provide the opportunity to expand the number of passenger vehicle spaces at the Heil Valley Ranch Trailhead.

The corral trailhead serves multiple purposes which should help reduce conflict as well as expand access. The goal of this trailhead is to provide hikers access to the corral area, Altona Schoolhouse, and trails on Heil 2 along with equestrian parking, which means less parking conflict at the Heil Valley Ranch Trailhead. It will also be expandable, though any expansion will require consultation with neighbors and with the county Department of Transportation. The inclusion of additional parking will be accompanied by signing of Geer Canyon Drive for no parking on shoulders. This trailhead will improve visitor safety and reduce parking conflict on busy days.

### 2. Parking at Altona School

The Altona Schoolhouse is currently undergoing restoration and its future interpretation will involve the cooperation of multiple BCPOS divisions. Once the restoration is complete, the schoolhouse will provide an opportunity for the public to see a piece of Boulder County's early education history. The building will also be open to school groups to experience programs inside the schoolhouse. To accommodate future programming at the schoolhouse, the Recreation and Facilities Division will improve the existing driveway encircling the schoolhouse to allow groups to safely park there for the day separated from the public right-of-way. In order to accommodate the desire of members of the public to visit the site at other un-programmed times, Parks and Open Space will work with Boulder County Transportation to develop a small pull-off parking area along Left Hand Canyon Drive. The parking area will provide for two (2) short term parking spaces and will be signed to prohibit parking except for the purpose of visiting the schoolhouse. A design for the parking area will be created in concert with Boulder County Transportation.

### 3. Administration/Special Event Parking



At the north end of the Heil 2 property is the Dude Ranch Barn that was used by the previous owners. The Heil Family altered the original small garage building to serve as a food preparation and serving area for the dude ranch visitors. The building has suffered from long-term deferred maintenance and would require major repairs in order to be effectively used for BCPOS activities. At the same time, due to its close proximity to the existing Heil Valley Ranch trailhead, this area has been used for parking for participants in BCPOS-led projects on Heil Ranch as a way to reduce impacts to parking capacity at the main visitor lot. Staff feels this “program parking” is the most appropriate use for this site, helps minimize parking issues, and provides a contained parking area that helps organize groups of visitors participating in employee-led projects and programs.

To accommodate this change, the building will be deconstructed and the area will be graded to permit parking spots on a road base driveway. The parking area will be accessed via an existing access road from Geer Canyon Drive, which will be gated and locked to control use where existing developed areas are reverted to natural areas, staff will reestablish native plant.

## **Protect and maintain existing natural resources**

Heil 2 is located in an ecologically important Foothills Ecotone a transition between major ecosystems. Plants and wildlife uncommon in both neighboring ecosystems as well as in either ecosystem come here. In addition, the location of this property between two hogbacks with an intermittent stream flowing through the property, adds to the ecological complexity and high diversity of plants and wildlife.

### **Plant Ecology**

Vegetation at Heil 2 has been strongly influenced by human activity, whether from the history of settlement and ranching or the practice of suppressing the natural disturbance regime of fire. The process of human settlement brought in non-native pasture grasses and forbs and displaced native prairie grasses and forbs. These human activities contributed to the distribution of aggressive invasive weeds and other non-native species that will continue to impact this area for many years.

Although influenced by human occupation and use, the vegetation present at Heil 2 is representative of a Rocky Mountain Lower Montane-Foothill Shrubland Ecosystem (Figure 4). This ecosystem is dominated by shrub communities where poor or shallow soils limit tree growth and grass-dominated meadows where deeper soils are found. These communities are adapted to fire. Native Mountain mahogany (*Cercocarpus montanus*), and three leaf sumac (*Rhus trilobata*) are the dominant shrubs with native mixed grasses and forbs in the understory. These native plants have numerous threats, one of which is competition from the high incidence of non-native grasses such as cheatgrass, dominate meadows, reducing diversity and impacting ecosystems.

The Colorado Natural Heritage Program completed an inventory of Boulder County and determined that these Foothill Shrublands have a very limited distribution. These foothill shrublands have been found to have high levels of plant diversity and are important ecological systems for wildlife. CNHP suggested protection and careful management of these areas because of the quality, rarity and threat posed to these systems.







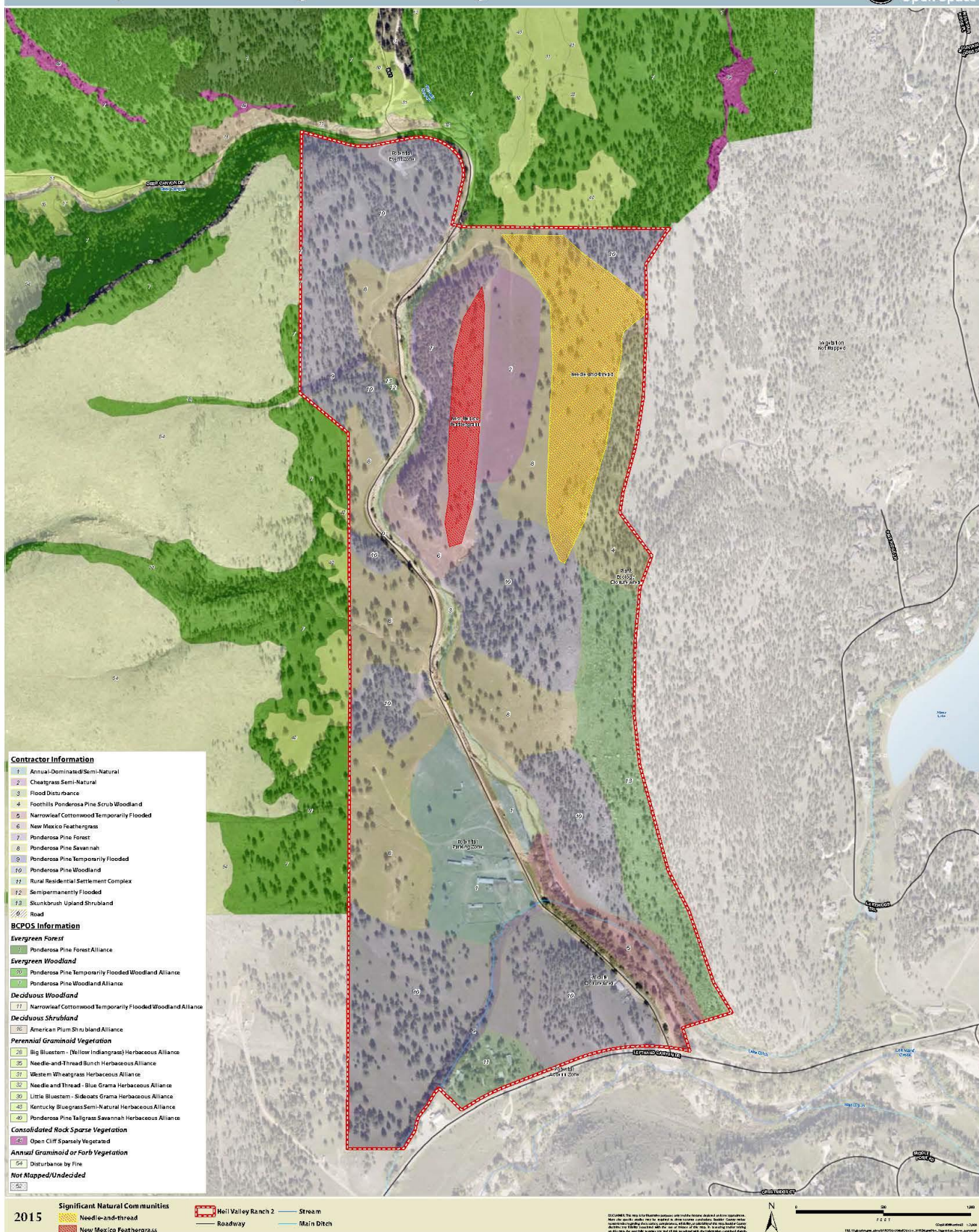


Figure 4: Vegetation



<b>Vegetation Community</b>	<b>Size in Acres</b>	<b>Location</b>
<b>Ponderosa Pine Woodland Alliance</b>	59.7	Throughout property
<b>Ponderosa Pine Tallgrass Savannah Herbaceous Alliance</b>	63.2	West, central, and northeast portions of the property
<b>New Mexico Feathergrass Herbaceous Alliance</b>	8.1	North-central portion of the property
<b>Ponderosa Pine Temporarily Flooded Woodland Alliance</b>	3.6	Along Lake Ditch and small drainage in northwest portion of property
<b>Ponderosa Pine Forest Alliance</b>	7.6	North-central portion of property on east side of Geer Canyon Drive
<b>Narrowleaf Cottonwood Temporarily Flooded Woodland Alliance</b>	5.6	Along southern one-quarter of Geer Canyon Creek
<b>Foothills Ponderosa Pine Scrub Woodland Alliance</b>	8.4	On backside of first hogback in northeast portion of property
<b>Skunkbrush Upland Shrubland Alliance</b>	16.6	On backside of southern two-thirds of first hogback along east property line
<b>Flood Disturbance, Temporarily Flooded</b>	4.6	Along northern three-quarters of Geer Canyon Creek
<b>Annual-Dominated Upland Disturbance Alliance/Semi-natural Herbaceous Alliance</b>	11.9	Around site of old ranch buildings
<b>Rural Residential Settlement Complex</b>	3.2	Around two houses and other buildings north of Lefthand Canyon Drive
<b>Cheatgrass Semi-Natural Herbaceous Alliance</b>	7.2	Small valley in north-central portion of property
<b>Semipermanently Flooded Herbaceous Alliance</b>	0.2	Around Frog Pond in northwest portion of property

Table 1. Vegetation Communities present at Heil 2

Two significant natural communities found on Heil 2 during the Biological Resource Evaluation in 2014 (Appendix B), which occur in sandstones and limestones associated with hogbacks are:

1. New Mexico Feathergrass (*Hesperostipa neomexicana*) Herbaceous Vegetation Community is globally vulnerable and rare within the state.



2. Needle-and-Thread (*Hesperostipa comata*) Colorado Front Range Herbaceous Vegetation Community is globally critically imperiled and state critically imperiled (This community is part of the Ponderosa Pine Tallgrass Savannah Alliance).

. The communities present should be protected for the long-term, rare communities should be sustained and where possible expanded, and threats to native communities should be aggressively managed.

### Alliance Management

The New Mexico feathergrass alliance (*Hesperostipa neomexicana*) seems to be directly associated with and dependent upon the geologic substrate underlying the alliance The Needle and thread alliance (*Hesperostipa comata*) may respond positively to management.

The first step will be to accurately survey and delineate the two alliances on the ground. At that point, plant ecology staff will protect these alliances as trail development occurs by having the routes avoid or minimize their impacts. Once the trail is built plant ecology staff will work with Education and Outreach and Agricultural Resources staff. In the first case, to interpret these rare plant alliances and in the second to manage grazing, if it becomes possible, to protect these plant alliances. Protection can be further advanced by encouraging visitors to stay on trails to reduce weed spread.

### Geer Canyon Creek Restoration

Geer Canyon riparian vegetation was severely damaged by the 2013 flood event. At the point where the creek enters Heil 2, flood waters severely damaged Geer Canyon Drive and destroyed the riparian habitat by washing away much of the soil and plant communities that stabilized the creek. Along with Heil Valley Ranch, the purchase of Heil 2 placed the entirety of the damaged creek within Boulder County Parks and Open Space management. This single ownership will allow stream restoration to be carried out comprehensively. Parks and Open Space will work with the Department of Transportation, the Left Hand Watershed Oversight Group, and the Comprehensive Creek Recovery Program to develop, design, and secure funding where possible for a creek recovery program. This process can be slow, but with the flood recovery knowledge gained in recent years, the help of our volunteer community, and the expertise of our staff, and the resiliency of natural systems restoration is possible. As of December 2015, it is anticipated that Transportation will be repairing Geer Canyon Drive in 2016. Funding is in place to prepare preliminary creek restoration plans in 2016 as well.

### Forestry

Heil 2 has 123 acres of tree-dominated alliances. Most of these are on steep slopes or in areas that were not desirable for grazing livestock. The forest stands to the west of Heil 2 were severely damaged by the 2004 Overland Fire. Forest stands are generally in a stable state and need for management limited.

While the Forestry Workgroup feels that the forests on Heil 2 are in a “stable state” management will continue on a small scale. Some of the first forestry activities at Heil 2 will include some infrastructure work such as working with Transportation to restore a culvert and crossing of Geer Creek to allow easy vehicular access to the east side of Heil 2 and Heil Valley Ranch. This will allow for management of the southeastern corner of Heil Valley Ranch. The management in this area will consist of thinning the tree



stands. With thinning adjacent to the “stable” stands on Heil 2, pressure to manage the Heil 2 stands will not be as great.

Forests in this area of Colorado are generally understood to exist within a cycle of disturbance. Natural disturbances include pests, fire, wind, and other forces that impact the number and density of trees in an area. Boulder County attempts to manage in a way that mimics this disturbance pattern or regime. Man-made disturbance regimes can include thinning, prescribed fire, and small clearing operations. Heil 2 management will focus on these practices and depend on regular analysis by the Forestry workgroup.

## Weeds

Weeds are a significant problem throughout the Front Range of Colorado and Heil 2 is no exception (Figure 5). In order to promote the protection and continuity of native ecosystems, Boulder County seeks to aggressively manage weeds on Boulder County property. Boulder County Parks and Open Space uses the County Weed Management Plan to provide the general outlines of how weeds are managed across the county. Heil 2 has a number of heavily impacted areas that will be a focus of management efforts including the development of a property-specific plan.

Colorado classifies the most problematic weeds. By law, occurrences of ‘List A’ species must be eradicated. The state encourages the management of List B and C species and, in some parts of the state, these may be identified by counties as being of particular concern and while there is no legal requirement to treat them, Boulder County Parks and Open Space targets selected species and strives to reduce the occurrence and prevalence of weeds throughout its properties.

At Heil 2 the most serious weed occurrences occur in the corral area, the northeastern pasture, and the southwestern pasture. The most common weeds in these areas include List B species such as Diffuse knapweed (*Centaurea diffusa*), Mullein (*Verbascum var.*), various species of Thistle, and cheat grass (List C). List A species have not been regularly seen on the property. However, a Myrtle spurge (*Euphorbia myrsinites*) infestation was treated this year and Mediterranean sage (*Salvia aethiopis*) is being treated on Heil Valley Ranch and may be at the north end of the Heil 2 property.

Since the property was purchased in 2012, BCPOS Weed Management staff have been working to identify ways to address these infestations. This work is on-going and involves both identification and eradication efforts. Weeds can thrive on disturbance and many may have received a big boost in the areas damaged by flood.

Figure 5 shows the distribution of noxious weeds mapped on the property and their removal priority. List A weed species will be eradicated as required by state law. Weed species will be mapped and Weeds Management Staff will work with Plant Ecology staff and Agricultural Resources staff to use Integrated Pest Management (IPM) strategies to address problem areas. Strategies might include hand removal, mechanical removal, pesticides, grazing, and prescribed fire.





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## Wildlife

Using records and data for Heil Valley Ranch, BCPOS staff can predict the wildlife that likely reside in or use Heil 2 based on the ecosystems present. In addition, it is possible to identify the areas most valuable to those wildlife species. With this information we can develop management strategies that will reduce negative impacts to wildlife using the property or improve habitat where necessary to benefit wildlife.

Given the habitat on Heil 2, staff estimates that species diversity on the property tops 71 mammals, 167 birds, and 15 amphibians and reptiles (Appendix B).

Figure 6 shows the important corridors and sites for wildlife. These areas are of particular importance and may inform management decisions and are described in more detail below.

1. American elk use the property as winter range, but also as one of a few movement corridors between important habitat areas on either side of Heil 2 (Hoerath 2007). They also use the property as part of their winter range.
2. Several bat species of special concern use the property. Upper Geer Canyon, located northwest of the property, has high bat use and maternity roosts for several bat species of special concern. Species located in Geer Canyon include fringed myotis, big brown bat, western small-footed myotis, and silver-haired bat. A maternity colony is present in Geer Canyon for fringed myotis. Mist-netting on Heil Valley Ranch 2 found fringed myotis and big brown bat. The mist netting was conducted near Frog Pond (Adams 2003). Fringed myotis is a "clutter specialist," favoring denser forests for feeding. Water sources are one of the most important ecological limiting factors for bats (Adams 2003). Further studies may find different bat species using the cliff faces in the southeast of Heil 2.
3. A wildlife movement corridor is present along the southern boundary of the property adjacent to Lefthand Canyon Drive. This includes a highway crossing that links Heil Valley Ranch 2 to lands to the south and Lefthand Creek. Animals documented using this route include bobcat, mule deer, and wild turkey.
4. One of the most likely small-mammal species of special concern to be present on the property is northern rock mouse. It would most likely be found in the exposed rock ledges and shrublands on the backside of the first hogback.
5. The woodlands, shrublands, and rock outcrops of the backside of the first hogback compromise significant avian habitat. Three Boulder County Species of Special Concern were located in this area, including multiple Virginia's warblers and rock wrens, and a lazuli bunting. This is also the most likely habitat for western scrub-jays and bushtits, also species of concern.
6. Heil Valley Ranch 2 is the eastern buffer to the Overland Burn area, located west of the property on the second hogback. Lewis's woodpeckers and red-headed woodpeckers have been documented nesting in the burn area. Rock wrens are also present. Burn areas are unique



habitats, providing an abundance of standing dead trees for primary and secondary cavity nesters during the several decades the trees remain standing.

7. Western chorus frogs and tiger salamanders have been present in Frog Pond, while western chorus frogs have also been observed along Geer Canyon Creek.

Wildlife access and movement within and through Heil 2 should be protected by limiting impacts to identified sites and corridors (Figure 6). By limiting crossings of trail

The wildlife biology work-group will work with the other work-groups at Heil 2 in order to maintain these important areas. Much of the work will consist of monitoring and collaboration between BCPOS staff and dedicated volunteers. Boulder County Parks and Open Space works with the state wildlife management agency, Colorado Parks and Wildlife, for management of individual animals. One of the primary roles of BCPOS is to manage lands to allow wildlife species to flourish in their native habitats. On Heil 2, wildlife staff will work with seasonal staff and volunteers to monitor both populations and corridors

### Agricultural Resources

Agriculture was the principal activity at Heil Valley Ranch for decades. agriculture can still play a role at Heil 2 as a land management tool. The manner in which the Heil family ran their cattle operation on the property had an impact on many of the plant communities. With specific types of grazing management, livestock could return to have a positive impact on managing weed species on the property and on maintaining the open shrubland ecosystem that dominates the property.

The Agricultural Resources team will work closely with Resource Management to identify opportunities for grazing where and where possible. Grazing livestock can be used to reduce weed pressures and to maintain open areas on the property. Using temporary fencing on existing fence posts, livestock can graze small areas for short periods of time. This practice can avoid impacts to visitor use and augment forest and grassland management employed by the Resource Management group.

Fencing is a remnant of the property's ranching heritage. There are both boundary and interior fence systems of varying ages and in varying states of repair. Some fencing, such as the boundary fencing and wood fencing around the corrals will remain in place for the long term. Fences delineate the boundary and provide infrastructure to properly manage the property and protect our neighbors from public trespass. Fencing around the corral is an important part of the historic context of this area and helps interpret the site for visitors.

Fencing can have a negative impact on wildlife and it can be a safety hazard for visitors. Staff will remove fencing that is not part of the corral area. Outside the corral area fence strands will be removed, but fence posts will remain. In some small areas, southwest of the corrals, fencing may remain, but be altered to a smooth-wire fence to protect wildlife but enable grazing by livestock to take place in the future if prescribed. Keeping other fence-posts up on the property helps maintain the context of ranching on the property and in cases where grazing is seen as appropriate, fence-posts can hold temporary fencing.



## **Protect and interpret cultural resources**

Heil 2 contains a diverse range of cultural resources from the prehistoric era to its long ranching history. The protection and interpretation of some of these cultural resources will involve the cooperation of multiple BCPOS divisions. The following section identifies the resources, describes how they will be managed, and how visitors will access them.

### **Corral Area**

The corral area served as the center of the Heil family's ranching operation. Located west of Geer Canyon Creek and Geer Canyon Drive the corrals include a ranch office, railroad cars, camper, pole barns, and a number of fenced paddocks for livestock. The corral area is about one acre in size. There are 15 permanent and temporary buildings.

The Heil's corral area is an example of ranching that continues to be an important part of Colorado's economy. The area will be managed to allow public access and interpretation of the ranch facilities. Figure 3 indicates the buildings and structures that will be removed for public safety. The figure also represents trails that will be built to allow for access to the ranch complex for Heil 2 visitors. Fencing that defines the central corral area and is important for the context of the ranching operation will remain in place. Where fencing is removed to promote wildlife movement, fence posts will remain in place to provide historic context of the extensive fence history of the property.

### **Altona Schoolhouse**

The Altona Schoolhouse is a one room school house in the southwest corner of the property. Constructed in 1880, the schoolhouse served children in the Altona community and families living in the Lefthand Canyon area. It is one of only a few examples of schoolhouses from that time period remaining in Boulder County and in public ownership.

The Altona Schoolhouse restoration and its future interpretation will involve the cooperation of multiple BCPOS divisions. Once restoration of the building is complete, it will provide an opportunity for the public to see a restored one room schoolhouse and experience programs highlighting the county's rural education system. The area around the building will also be managed to promote visitation outside of special programs. Interpretation may include signage and interpretive panels.

### **Heil Family Houses**

There are four houses in the southern part of Heil 2. These houses, three of which are recorded as having been relocated from Boulder, belonged to the various members of the Heil family who lived at Heil Valley Ranch.

East of Geer Canyon Creek is a sandstone sided house. This house was damaged in the 2013 flood. Adjacent to Geer Canyon Drive is the house that was owned and occupied by Bud and Velma Heil. This house is reportedly in good condition. North of Lefthand Canyon Drive, south of the Lake Ditch are two houses. These houses belonged to members of the family at different times.



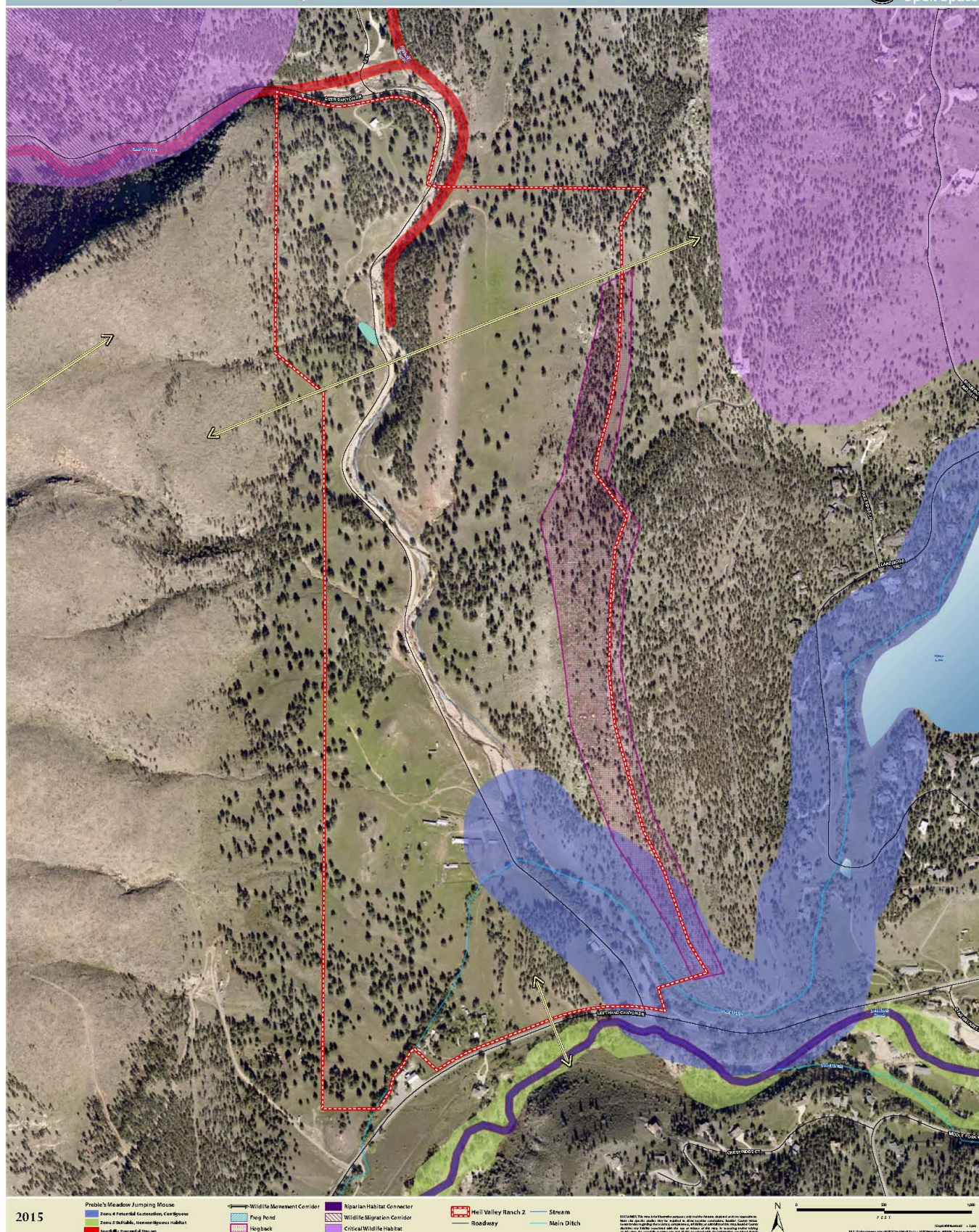


Figure 6: Wildlife



### Grindstone Quarry

The quarries of Heil Valley Ranch are well known. However, Heil 2 has its own quarrying history. On the west aspect of the eastern hogback that forms the eastern boundary of the property is a grindstone quarry. Grindstone quarries provided the sharpening/grinding wheels necessary for sharpening ferrous tools. This quarry was established by the Town of Altona's early resident and postmaster Peter Haldi. The Haldi Ditch, owned by Lefthand Water District, is named after Peter Haldi. The grindstone quarry on Heil 2 is the only remaining example of this type of quarry known to exist in Boulder County.

Peter Haldi's grindstone quarry shall be managed to limit long-term impacts to the site. Access into the site will be restricted. However, trails near the site will include opportunities to interpret the quarry, the stone wall features, and building foundation. Management will not extend to any restoration of the quarry features and impacts to the site access will be closely monitored.

### Lime Kiln

Lime kilns turn limestone into lime. Lime continues to be an important material in the construction and agricultural industries. Early settlers used lime as a constituent of mortar for building structures and for fertilizer. The lime kilns are a rare resource in Boulder County and the former Heil Valley Ranch has two (2), the other lime kiln is located along the Lichen Loop near the Geer Canyon Trailhead.

The pedestrian/equestrian trail on the east side of the property offers amazing views and a quiet trail experience, but it will also take visitors close to the lime kiln on Heil 2. Along with various work-groups, Education and Outreach plans to develop materials to interpret the kiln while protecting it from direct access in order to manage the long-term impacts to the structure.

Cultural resources like the lime kiln and the grindstone quarry are extremely fragile. Management will not extend to any restoration of the structure and access to the lime kiln will be prohibited. The value of these resources are in their connection to European settlement, the features themselves are intact and don't require restoration, but extensive visitor contact can both reduce their value and quickly destroy them.

### Management Tasks

Below is a table that presents the above text in a set of management tasks to be performed by the various divisions of BCPOS. While each task is discrete, the various roles and responsibilities of the work-groups and divisions responsible may change. Furthermore, completion times may vary based on funding, staff time, and the priorities of the county and its residents.



Project	Objective	Lead Work-group	Support	Timeline	Comments (This won't appear in the plan, it's a place to add thoughts for everyone on the planning team)
Cultural Resources					
	Complete a Class III archaeology survey	Cultural Resources		Short	
	Complete historical and architectural inventory site forms for all buildings and structures	Cultural Resources		Short	
	Develop work plan for cultural resources, buildings, and structures that will remain	Cultural Resources	Recreation and Facilities	Short	
	Deconstruct buildings and structures identified in work-plan	Recreation and Facilities	Cultural Resources & Education and Outreach	Medium	
	Monitor post-deconstruction restoration	Weed Management	Plant Ecology	Medium	
	Stabilize and protect retained buildings and structures	Recreation and Facilities	Cultural Resources & Education and Outreach	Medium	
	Catalogue ranching artifacts	Education and Outreach	Cultural Resources	Long	
	Remove identified ranch implements from property	Recreation and Facilities	Cultural Resources & Education and Outreach	Medium	
	Create plan for school programs at Altona school house	Education and Outreach	Cultural Resources & Recreation and Facilities	Medium	
Recreation and Facilities					
	Work with associated work groups to develop interpretive program for the corral area	Education and Outreach	Recreation and Facilities & Cultural Resources	Medium	
	Complete interpretive trail through corral area	Recreation and Facilities	Cultural Resources & Education and Outreach	Medium	
	Develop educational signage on trails	Education and Outreach	Recreation and Facilities & Cultural Resources	Medium	
	Develop site plan for the Grindstone Quarry	Cultural Resources	Recreation and Facilities	Medium	
	Monitor trail development near the Grindstone Quarry	Resource Protection	Recreation and Facilities, Cultural Resources, Resource Management	Short	
	Establish trails as outlined in Heil 2 Small Area Plan	Recreation and Facilities	Resource Management & Cultural Resources	Short	
	Establish link trails if necessary	Recreation and Facilities	Resource Management & Cultural Resources	Long	
	Work with Education and Outreach to interpret resource protection efforts	Education and Outreach	Resource Management	Medium	
	Work with Cultural Resources and Trails to develop signage to protect cultural resources	Education and Outreach	Cultural Resources	Medium	
	Establish signage to maintain trail use divisions as established in Heil 2 Small Area Plan	Recreation and Facilities	Education and Outreach	Short	



	Work with Land Use and Transportation to develop trailhead and parking areas	Recreation and Facilities	Education and Outreach	Medium	
	Establish special event accommodation at Dude Ranch building area	Recreation and Facilities	Education and Outreach	Medium	
	Perform regular maintenance checks on Geer Creek crossings, as trails are built.	Recreation and Facilities		Short	
	Work with Transportation and Land Use to establish safe access point to Heil 2 as defined in plan, as trails are built	Recreation and Facilities	Resource Planning	Short	
<i>Resource Management</i>					
	Develop addendum that folds Heil 2 into the larger Heil forest management plans	Forestry		Short/Long	
	Confirm location and extent of plant alliances requiring management oversight	Plant Ecology	Recreation and Facilities	Short	
	Develop plans to protect or propagate alliances	Plant Ecology	Recreation and Facilities	Medium/Long	
	Work with Education and Outreach to interpret work	Education and Outreach	Plant Ecology & Recreation and Facilities	Long	
	Advocate for funding for Geer Canyon Creek Recovery Planning, Design, and Construction	Resource Planning	Resource Management & Recreation and Facilities	Short/Long	
	Manage impacts from facilities development	Resource Management	Recreation and Facilities	Medium	
	Represent Parks and Open Space interests during redevelopment of Geer Canyon Drive	Resource Planning	Resource Management	Short	
	Work with Resource Management to identify best places for trail crossings on creek, as trails are built	Recreation and Facilities	Resource Management, Resource Planning, Resource Protection	Short	
	Develop weed eradication and management plan	Weed Management	Resource Management	Medium	
	Establish monitoring program for wildlife corridors and monitor for changes in use patterns	Wildlife	Education and Outreach	Short	
	Restoration design for creeks and uplands	Resource Management	Resource Planning	Long	