



## **PARKS & OPEN SPACE ADVISORY COMMITTEE MEETING**

Time/Date of Meeting: 6:30 p.m., Thursday, Nov. 17, 2022

Location: Boulder County Courthouse

1325 Pearl Street, Third Floor, Boulder

<b>TO:</b>	Parks & Open Space Advisory Committee
<b>FROM:</b>	Jeff Moline, Senior Planner, Parks & Open Space Ethan Abner, Long Range Planner, CP&P
<b>AGENDA ITEM:</b>	<b>Updates to the Environmental Resource Element Maps and Supporting Information of the Boulder County Comprehensive Plan</b>
<b>ACTION REQUESTED:</b>	Recommendation to the Planning Commission

### **Introduction**

Parks & Open Space (POS) and Community Planning & Permitting (CP&P) staff are suggesting four general changes to the maps and associated information of the Environmental Resources Element (ERE) of the Boulder County Comprehensive Plan (BCCP). To be clear, staff is not suggesting any changes to the text or policies of the Comprehensive Plan itself. Rather, in accordance with BCCP policies about updating supplemental information, staff is supporting a number of minor changes that aid in the use of ERE maps and incorporate new data, lists, and rankings. In describing the four changes, for the first one, staff proposes displaying the environmental resource information in municipalities and county subdivisions on official BCCP ERE maps to provide a more comprehensive understanding of these resources inside the geographic boundary of the county. This is currently not the practice with ERE maps. Second, staff identified several issues impacting the Wetlands and Riparian Areas Map as well as the Rare Plant Areas and Significant Natural Communities Map and would like to correct those. Third, due to updated information in the last eight years, staff is recommending changes to the Species of Special Concern and Significant Natural Communities List and accompanying narrative. Finally, staff is recommending the removal of Critical Wildlife Habitat (CWH) #36 from the CWH map. In that last case, the approved update to the Carolyn Holmberg Preserve at Rock Creek Farm Management Plan in 2020 stipulated the removal of prairie dogs from the CWH area and a conversion to agricultural uses. This management change is occurring and the CWH designation should be updated now to reflect this by removing it from the CWH map.

### **Updates to BCCP ERE Maps and Accompanying Mapping Procedures Related to Municipal and County Subdivision Data**

The maps of the BCCP have been inconsistent about the inclusion of municipal and subdivision data. In some maps (and this is generally the case for ERE maps) the municipal and subdivision data have been clipped and screened out. Staff's understanding is that in the past the municipal data was generally excluded from ERE maps because including this data within the maps has had the potential to give the impression that the county has regulatory control over that land. However, the absence of municipal and subdivision data (and the inconsistency of including or excluding the data) has presented some confusion among staff who are trying to interpret the information for applicants, the public, and decision-makers.

For example, do wetlands in unincorporated portions of the county really end at a county subdivision or city limit? Or has the mapped information merely been screened out? By including the information, county staff can make better recommendations in land use and POS decision-making processes.

POS and CP&P staff have worked together to resolve this issue and agree that by consistently including the municipal and subdivision data in our BCCP mapping where quality data sets exist (i.e. for cases in which the municipal and subdivision data are relatively complete and of the same quality as the data we have for the county areas) staff will gain a broader context for the resource characteristics of the area surrounding a subject property located in unincorporated Boulder County. Additionally, this information could be used to inform comments on municipal referral requests. County staff will only use the information to provide geographic context and inform regulatory decisions in unincorporated Boulder County. It would not be used for any regulatory decision making within municipalities. The current and proposed mapping approaches are summarized in Attachment A. All ERE maps are created using the best available data, but this data is not comprehensive. Rather, it is intended to serve as a geographic trigger to determine whether a closer review or analysis is warranted based on the context and characteristics present in the area. The proposed changes do not result in any changes in designations or land use processes for any private or public properties. Attachment B is a draft of the updated Wetlands and Riparian Areas and Rare Plant Areas and Significant Natural Communities BCCP Maps.

#### **Updates and Corrections to BCCP ERE Maps due to New Information**

Staff proposes adjustments to the ERE Wetlands Map as a result of updated hydrology information, new mapping methods at the City of Boulder Open Space and Mountain Parks, and new National Wetland Inventory mapping from the USFWS. With respect to non-wetland vegetation communities, the county has received new mapping from a variety of sources which will be updated in the supporting information. This includes new data from the City of Boulder; BCPOS for newly acquired and surveyed properties; changed mapping methodology by local, state, and federal agencies, as well as the United States National Vegetation Classification (USNVC); and information from Rocky Mountain National Park (RMNP). This new information would update the Significant Natural Communities and Rare Plants Map. Apart from changes due to new data and information, there were some errors discovered in the previous maps as well and those are being addressed. While most of the new data does involve public lands, some of the proposed changes could add resource designations (e.g., Significant Natural Communities) to private, unincorporated lands in order to properly reflect the existence of those resources. Attachment C is a draft of the updated Rare Plant Areas and Significant Natural Communities Map.

#### **Updates to the Species of Special Concern and Significant Natural Communities list**

Most of the agencies that manage lands in Boulder County continually monitor the populations and occurrences of plant and animal species of concern. Additionally, the state and federal governments maintain threatened and endangered species lists. Lastly, the Colorado Natural Heritage Program, provides updated status on species and significant natural communities. POS staff members review this new information, and based on recent updates they are recommending changes to the list. An updated list is provided as Attachment D.

### **Update to Critical Wildlife Habitat Map: Removal of CWH #36**

During the 2020 update to the Carolyn Holmberg at Rock Creek Farm (CHP-RCF) Management Plan, staff determined that changed conditions surrounding CWH #36, led to a decrease in its overall habitat suitability. The original intention for the designation of this area as CWH was to support burrowing owl nesting. However, nesting has not occurred since 2012, and while this is not a guarantee that nesting might not occur in the future, staff is reasonably confident that the regional changes as well as local changes have created conditions that are no longer favorable for burrowing owl nesting within this 40 acres.

Examples of regional changes include significant development in eastern Boulder County, which has destroyed hundreds of acres of surrounding prairie dog colonies. Without neighboring prairie dog colonies, dispersal and natural movement patterns of the prairie dogs is no longer possible. This impacts burrowing owls, and the number of suitable nesting sites in eastern Boulder County has declined dramatically. Consequently, the source populations of burrowing owls have also been negatively impacted.

Since 2012, the agricultural tenant of CHP-RCF has intensified farming operations consistent with their lease, including the installation of pivot irrigation, increased visitation as part of the Fall U-Pick-Em pumpkin agritourism, and installation of an overhead utility line. These changes adjacent to the 40-acre parcel have reduced the suitability of the habitat to support nesting burrowing owls. These forty acres were, in essence, an island within active agricultural activities. Unfortunately, combined with the regional changes, and the intensified farming operations, 40 acres is not enough area to provide a buffer to these disturbances, and support functioning habitat.

Staff's recommendation to remove the 40-acre preserve was determined after careful consideration of all these factors during the management planning process, see Attachment E. With the implementation of the updated management plan, staff is recommending the corresponding removal of the CWH designation of the site. At the same time, POS is managing portions of the property where burrowing owls have more recently nested in a way that would continue and support their use of the southern and western sections of the site. Across the county, the designation of CWHs can promote the importance of these areas, but at times, changes beyond the county's control may make these designations no longer appropriate as in this case with CWH #36. See Figure 1 below for excerpt of Critical Wildlife Habitat and Migration Corridors Map.

### **Conclusion**

In effort to keep the BCCP document as up to date as possible, the county strives to incorporate the latest information into the elements that make up the maps and background data. In this case, POS and CP&P staff have provided updated ERE maps and materials for the BCCP. In accordance with BCCP policy, staff is requesting POSAC's review and recommendation to the Planning Commission. The Planning Commission ultimately approves changes to the BCCP and the supporting elements. This POSAC report, materials, and meeting will be the initial opportunity for the public to provide comments on these items. The report will be available for review on the POSAC webpage:

<https://bouldercounty.gov/government/boards-and-commissions/parks-and-open-space-advisory-committee/>. Because this update is to the ERE of the BCCP, the materials will also be available on the CP&P website: <https://bouldercounty.gov/property-and-land/land-use/planning/boulder-county-comprehensive-plan/update/environmental-resources-element/>.

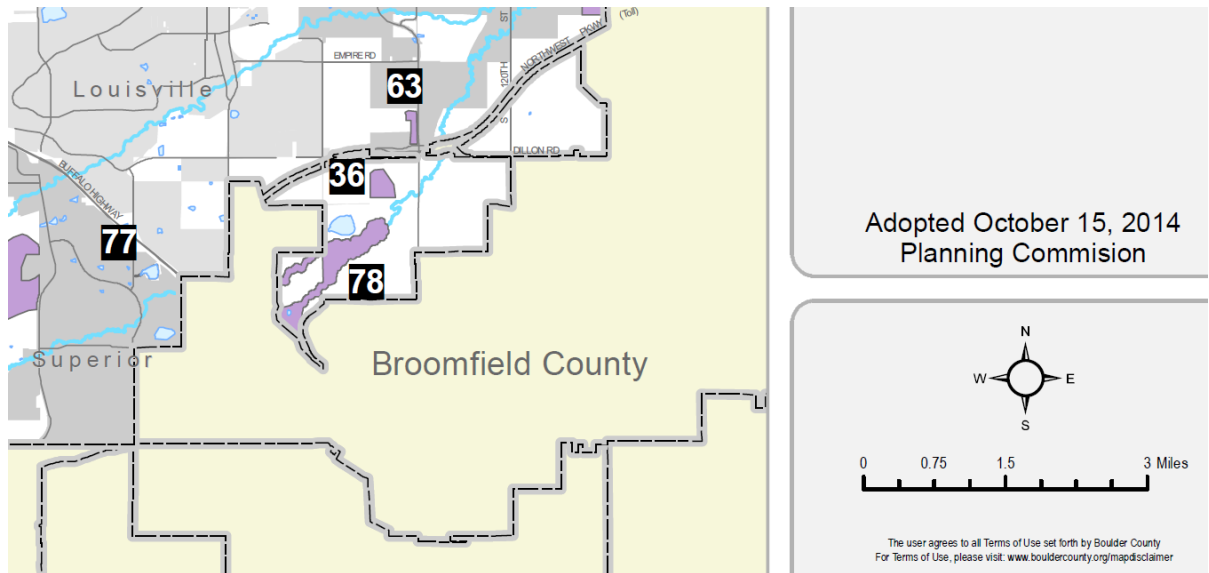


Figure 1., Excerpt from BCCP ERE Critical Wildlife Habitat and Migration Corridors Map.

### **Attachments**

Attachment A. Mapping Protocols for Wetlands, Riparian Areas, and Significant Natural Communities in ERE of BCCP

Attachment B. Draft Updated Wetlands and Riparian Area BCCP Map

Attachment C. Draft Updated Rare Plants Areas and Significant Natural Communities BCCP Map

Attachment D. Updates to the Species of Special Concern and Significant Natural Communities list

Attachment E. Excerpts from Carolyn Holmberg Preserve at Rock Creek Farm Management Plan 2020 Update

## Attachment A.

### Mapping Protocols for Wetlands, Riparian Areas, and Significant Natural Communities in ERE of BCCP

#### Wetlands

##### *Current Mapping Protocol*

- Use data from: BCPOS, City of Boulder, City of Boulder OSMP, RMNP, USFWS National Wetland Inventory.
- Remove wetlands in county subdivisions.
- Remove wetlands in municipal areas. Note: This was done inconsistently.
- Buffer distances based on POS Plant Ecology staff determinations.
- Remove wetlands in open water areas.
- Remove wetlands outside of county boundary.
- Manual edits to data and GIS performed by POS Plant Ecology staff.

##### *Proposed Mapping Protocol*

- Use data from: BCPOS, City of Boulder, City of Boulder OSMP, RMNP, USFWS National Wetland Inventory updated by CNHP.
- Buffer distances based on POS Plant Ecology staff determinations.
- Wetlands will not be removed in county subdivisions or municipalities where information is available.
- Remove open wetlands in open water.
- Remove wetlands outside of county boundary.
- Manual edits to data and GIS performed by POS Plant Ecology staff.

#### Riparian Areas

##### *Current Mapping Protocol*

- Use data from: BCPOS, City of Boulder, City of Boulder OSMP, CPW, RMNP, USFWS National Wetland Inventory.
- Remove riparian areas in county subdivisions.
- Remove riparian in municipal areas. Note: This was done inconsistently.
- Buffer distances based on POS Plant Ecology staff determinations.
- Remove riparian areas in open water.
- Remove riparian areas outside of county boundary.
- Manual edits to data and GIS performed by POS Plant Ecology staff.

##### *Proposed Mapping Protocol*

- Use data from: BCPOS, City of Boulder, City of Boulder OSMP, RMNP, USFWS National Wetland Inventory updated by CNHP.
- Buffer distances based on POS Plant Ecology staff determinations.
- Riparian Areas will not be removed in county subdivisions or municipalities.
- Remove riparian areas in open water.
- Remove riparian areas outside of county boundary.
- Manual edits to data and GIS performed by POS Plant Ecology staff.

#### Significant Natural Communities

##### *Current Mapping Protocol*

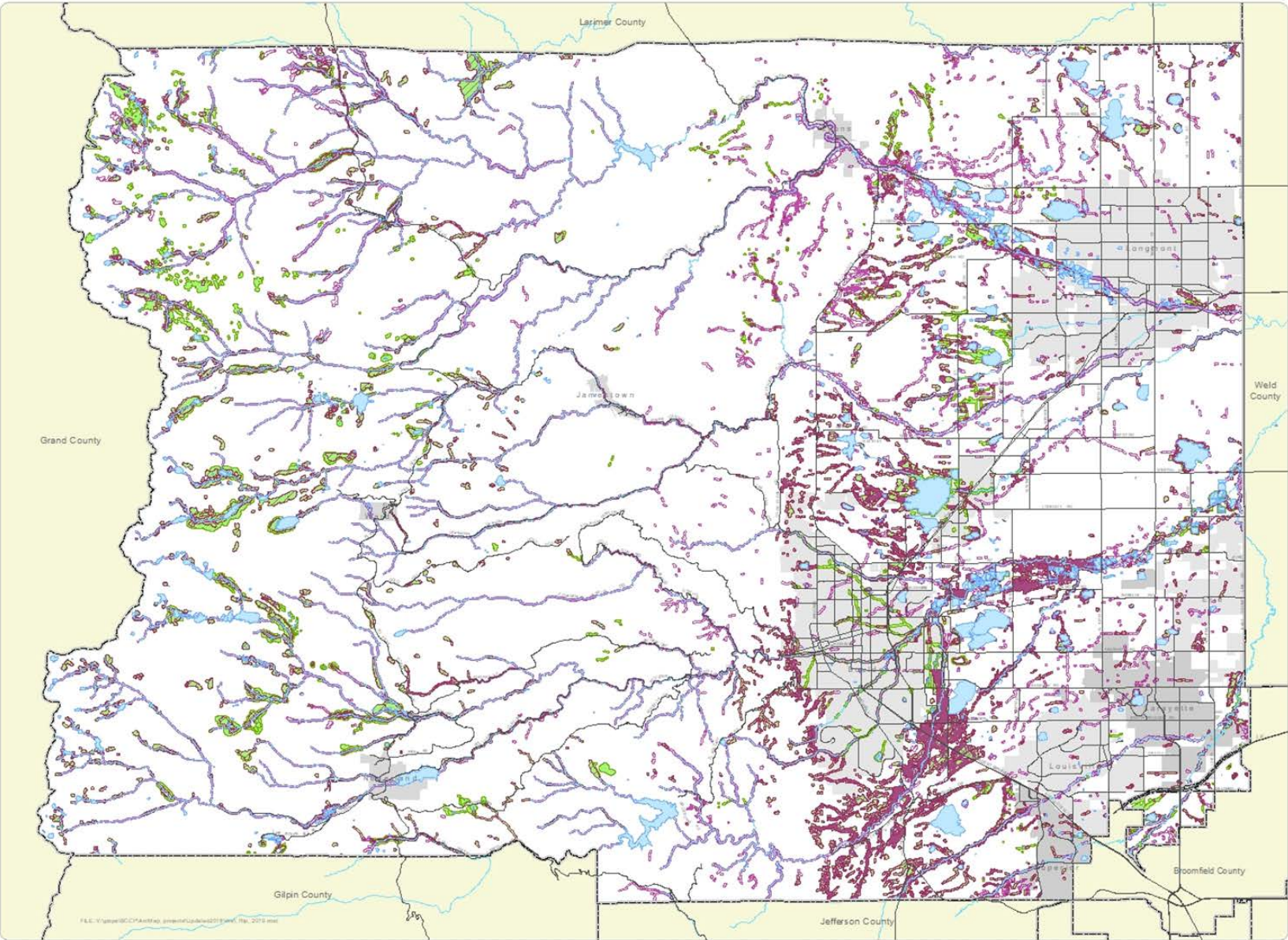
- Use data from: BCPOS, City of Boulder, City of Boulder OSMP, CPW, RMNP, USFS, International Tree Ring Database
- Remove SNC outside of county boundary.
- Generalize feature locations so that sensitive species locations could not be located.
- Apply cartographic representation to create more natural looking features on the maps.

##### *Proposed Mapping Protocol*

- *The methodology does not appear to need to change for SNC. It doesn't appear that the subdivisions or municipalities were clipped out during the analysis process. I do need to automate this process, so in the process of automating this I will double check that neither were clipped.*



ATTACHMENT B. Draft Updated Wetlands and Riparian Areas Map



### Wetlands and Riparian Areas

 Boulder County Comprehensive Plan

#### Riparian Areas 2020



An area recognized by the presence of linear bands of trees, shrubs, and herbaceous vegetation along a waterway where plant communities and soil moisture differ from surrounding upland vegetation and soils

#### Wetlands 2020



Lands transitional between terrestrial and aquatic systems where the water table is usually at or near the surface or the land is covered by shallow water with one or more of the following attributes: (1) at least periodically, the land supports predominantly hydrophytes (wetland plants); (2) the substrate is predominantly un-drained hydric soil; and/or (3) the substrate is non-soil and is saturated with water or covered by shallow water at some time during the growing season of each year (USFWS 1993).

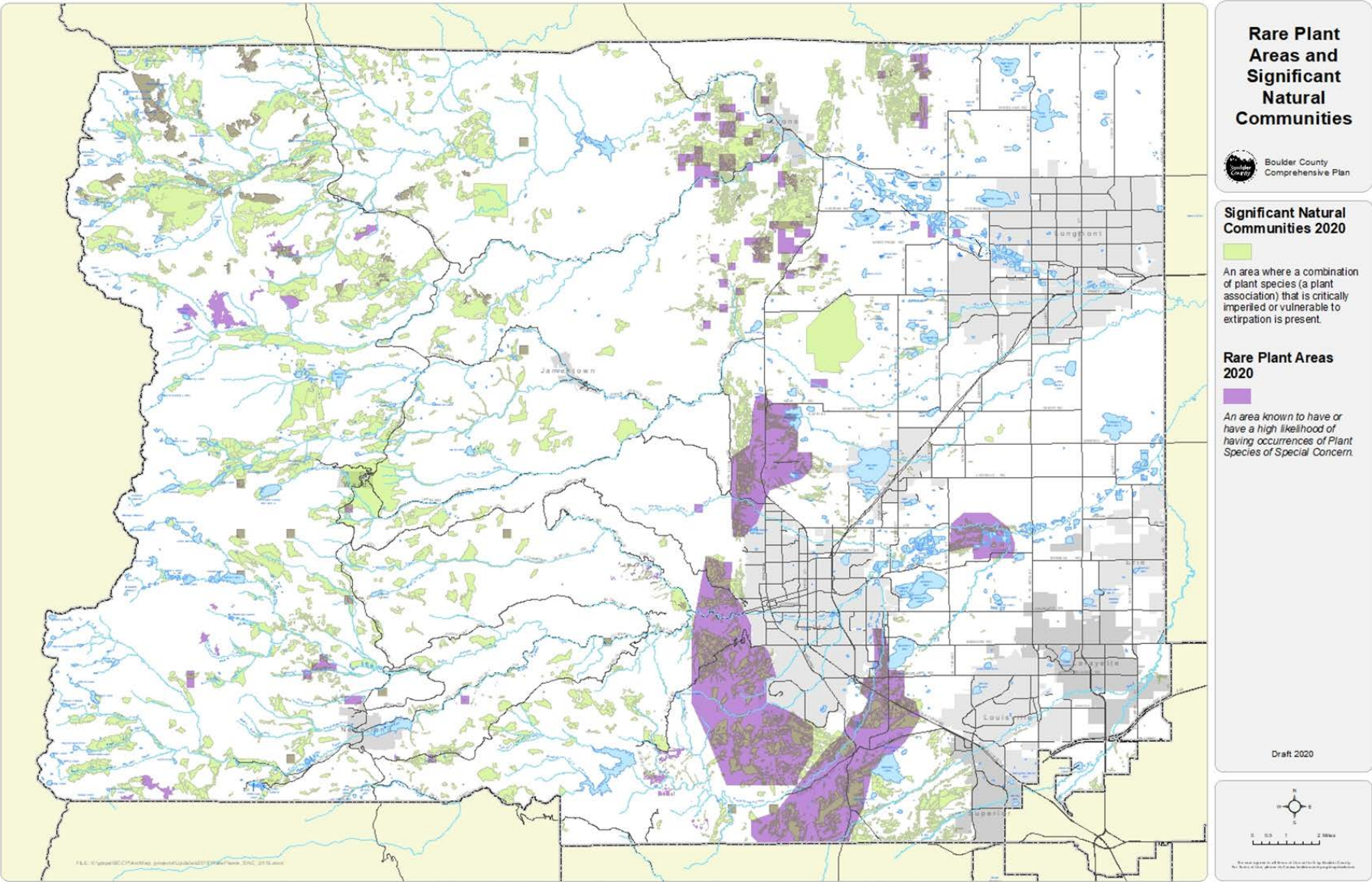
Draft 2020



This map is a draft and is not for use in legal proceedings. It is not a warranty of accuracy or completeness. It is not a representation of ownership or liability. It is not a representation of the Boulder County Board of Commissioners or the Boulder County Board of Directors. It is not a representation of the Boulder County Board of Directors or the Boulder County Board of Commissioners.



ATTACHMENT C. Draft Updated Rare Plant Areas and Significant Natural Communities Map





## Attachment D

### **Boulder County Plant Species of Special Concern and Significant Natural Communities**

As described in the recently updated Goals and Policies of the Environmental Resources Elements (the ERE) of the Boulder County Comprehensive Plan, Species of Special Concern include the flora and fauna in the county whose populations may be threatened or endangered, locally rare, experiencing long-term non-cyclical population declines, isolated or restricted to distinct local habitat types, or native species which have ceased to exist within Boulder County. As provided for in Goal

B.2 of the ERE, the Boulder County Species of Special Concern List (SSC List) includes this compilation of rare plants and significant natural communities of special status that warrant protection in order to prevent population or habitat loss. The list was developed through consultation with botany and plant ecology professionals in federal, state, and local governmental agencies, non-governmental conservation organizations, local universities, and private consultants, as well as Boulder County conservation experts. The majority of species and communities appearing on this list are recognized by the Colorado Natural Heritage Program (CNHP). CNHP is a non-profit organization sponsored by Colorado State University that tracks and ranks Colorado's rare and imperiled species and habitats. The list comprises species CNHP ranks as critically imperiled, imperiled, or vulnerable to extirpation globally (G1-G3) or statewide (S1-S3). Species ranked as apparently secure or demonstrably secure (G4-G5, S4-S5) are excluded from the list, unless they satisfy other criteria below.

The SSC List is intended to comprehensively document Boulder County species and communities as they exist today. To be listed on the SSC List, a species/community must meet at least one of the required or two or more of the conditional criteria. In some instances, a species has been included on the list even though it does not meet the SSC List criteria. This is based on professional judgment and only occurs with species for which there is presently incomplete or uncertain information available. The list will be updated as more information is learned about individual species or communities including changes to their status. Areas where these resources are known to occur or have a likelihood of occurring are illustrated on the respective maps of the Environmental Resource Element.

### **Criteria for Designating Plant Species of Special Concern and Significant Natural Communities**

#### Required

1. Species/Communities with Federal Status (listed or proposed threatened or endangered -- LT, LE, PT), candidates for listing -- C or under review for listing), e.g., Ute ladies'-tresses orchid (*Spiranthes diluvialis*) LT, G2G3/S2 (U.S. Fish and Wildlife Service 2013, CNHP 2013);
2. All G1-G2 and S1-S2 species that are not also federally listed;
3. Collectable/Harvestable: Species threatened by collection or harvest including showy varieties of orchids, lilies, penstemon, and cacti;

#### Conditional

4. Species/communities with U.S. Forest Service Region 2 (USFS R2) sensitive species,<sup>1</sup> National Park Service (NPS) sensitive species within Rocky Mountain National Park (RMNP)<sup>2</sup>, or City of Boulder Open Space and Mountain Parks (OSMP) sensitive status;

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<sup>1</sup> This criterion acknowledges that USFS R2 boundaries extend beyond Boulder County and encompass habitats that do not occur within the county, thus not all USFS R2 sensitive species appear on the SSC List.



5. Species/communities that could occur within Boulder County based on known records from adjacent counties or based on known suitable habitat in Boulder County for the species and that CNHP ranks as critically imperiled, imperiled, or vulnerable to extirpation either globally (G1 – G3) or statewide (S1 – S3), e.g., autumn willow (*Salix serissima*) – G4/S1 and American black currant (*Ribes americanum*) – G5/S2;
6. Relictual species/communities having undergone a documented long-term decline or having a critically low population size relative to their historic presence and/or relative abundance in a given ecosystem, e.g., American groundnut (*Apios americana*) – G5/S1 and big bluestem – prairie dropseed (*Andropogon gerardii* – *Sporobolus heterolepis*) Western Foothills Grassland – G2/S1;
7. Species/communities endemic to Boulder County or region,<sup>3</sup> e.g., Colorado aletes (*Aletes humilis*) – G2G3/S2S3 and Bell’s Twinpod (*Physaria bellii*) – G2G3/S2S3;
8. Species/communities known or thought to be extinct or extirpated in Boulder County, i.e., species that historically occupied and are native to Boulder County, that may exist in surrounding regions, and that may be able to repopulate Boulder County, e.g. manyhead sedge (*Carex sychnocephala*) – G5/SH;
9. Species/communities whose populations in the County that are vulnerable to threats<sup>4</sup> affecting their populations either directly or indirectly, e.g. limber pine (*Pinus flexilis*);
10. Species/communities that have a disproportionately large effect on the diversity within the ecosystem(s) they inhabit e.g., montane riparian forests such as quaking aspen/thinleaf alder (*Populus tremuloides* / *Alnus incana*) Riparian Forest – G3/S4;
11. Species/communities that are either naturally rare,<sup>5</sup> at the edge of their range in Boulder County, or are isolated or imperiled, e.g., black spleenwort (*Asplenium adiantum-nigrum*) – G5/S1, montane willow carrs such as *Salix bebbiana* Wet Shrubland – G3/S2, and alkali wetlands such as *Suaeda calceoliformis* Wet Meadow – GNR/SU;
12. Species/communities that support sensitive wildlife, e.g., Western hops (*Humulus neomexicanus*), the only host plant for the Hops Azure (*Celestrina humulus*) – G2G3/S2 Northwestern Plains Grassland (*Andropogon gerardii* – *Schizachyrium scoparium*) dominated by big and little bluestem, two native host plants for Arogos skipper (*Atrytone arogos*) – G2/G3/S2.

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<sup>2</sup> This criterion acknowledges that that NPS RMNP boundaries extend beyond Boulder County and encompass habitats that do not occur within the county, thus not all NPS RMNP sensitive species appear on the SSC List.

<sup>3</sup> Species/communities endemic to Boulder County region indicates a species occurring only in Boulder County and in an adjacent county or counties.

<sup>4</sup> Direct or indirect threats to the stability of species populations or communities include disturbances such as climate change, disease, residential or commercial development, fire suppression, mechanical forest thinning, prescribed fire, etc.

<sup>5</sup> Species or communities that are “naturally rare” normally occur in low abundance throughout their range. While their populations may be stable, species that are rare on the landscape are more vulnerable to extirpation compared to species with large populations.

Boulder County Species of Special Concern and Significant Natural Communities

State Scientific Name	State Common Name	CNHP Global Rank	CHNP State Rank	Other Agency Ranking
<b>GYMNOSPERMS</b>				
<i>Pinus aristata</i>	bristlecone pine	Unranked	Unranked	BCPOS
<i>Pinus flexilis</i>	limber pine	Unranked	Unranked	BCPOS
<b>FERNS &amp; FERN ALLIES</b>				
<i>Argyrochosma fendleri</i>	Fendler's false cloak-fern	G3	S3	
<i>Asplenium adiantum-nigrum</i> (A. andrewsii )	black spleenwort	G5	S1	OSMP
<i>Asplenium septentrionale</i>	forked spleenwort	G5	S3S4	RMNP, OSMP
<i>Asplenium trichomanes</i>	maidenhair spleenwort	Unranked	Unranked	OSMP
<i>Athyrium filix-femina</i>	common lady-fern	Unranked	Unranked	OSMP
<i>Botrychium campestre</i> var. lineare	prairie moonwort	G3	S2S3	SWAP Tier 2, USFS
<i>Botrychium echo</i>	reflected moonwort	G3	S3S4	RMNP, OSMP
<i>Botrychium furculatum</i>	redbank moonwort	G4	S3	
<i>Botrychium hesperium</i>	western moonwort	G4	S3	RMNP
<i>Botrychium lanceolatum</i> var. lanceolatum	lanceleaf moonwort	G5T4T5	S3	RMNP
<i>Botrychium minganense</i>	Mingan moonwort	G5	S3	RMNP, OSMP
<i>Botrychium pinnatum</i>	northern moonwort	G5	S2	
<i>Botrychium simplex</i>	least moonwort	G5	S2	
<i>Botrychium simplex</i> var. compositum	least moonwort	G5T3T4	S1	
<i>Botrychium simplex</i> var. simplex	least moonwort	G5T3T4	S2	
<i>Botrypus virginianus</i>	rattlesnake fern	G5	S1	OSMP
<i>Cheilanthes fendleri</i>	hardy fern	Unranked	Unranked	OSMP
<i>Dryopteris expansa</i>	spreading woodfern	G5	S1	RMNP
<i>Dryopteris filix-mas</i>	male fern	Unranked	Unranked	OSMP
<i>Equisetum variegatum</i> (Hippochaete variegata)	variegated scouringrush	G5	S3	RMNP
<i>Isoetes occidentalis</i>	western quillwort	G4G5	S1	
<i>Isoetes tenella</i> (I.echiniospora)	spiny-spore quillwort	G5?T5?	S2	RMNP
<i>Pellaea wrightiana</i>	Wright's cliffbrake	G5	S2	OSMP
<i>Polypodium hesperium</i>	western polypody	G5	S1S2	RMNP
<i>Polypodium saximontanum</i>	Rocky Mountain polypody	G3?	S3	OSMP
<i>Selaginella weatherbiana</i>	Weatherby's spike-moss	G3G4	S3S4	OSMP
<b>NONVASCULAR</b>				
<i>Anacolia laevisphaera</i>	anacolia moss	G5?	S1S3	
<i>Anacolia menziesii</i>	Menzies' anacolia moss	G4	S1S3	
<i>Andreaea rupestris</i>	andreaea moss	G5	S1S3	RMNP
<i>Anoetangium handelii</i>		Unranked	Unranked	BCPOS
<i>Aulacomnium palustre</i> var. imbricatum	aulacomnium moss	G5TNR	S1S3	RMNP
<i>Brachythecium hyalotapetum</i>	brachythecium moss	Unranked	Unranked	BCPOS
<i>Bryoerythrophyllum ferruginascens</i>	bryoerythrophyllum moss	G3G4	S1S3	
<i>Bryum alpinum</i> (Imbribryum alpinum)	alpine bryum moss	G4G5	S1S3	
<i>Campylopus schimperi</i>	Schimper's campylopus moss	G3G4	S1S3	RMNP
<i>Didymodon anserinocapitatus</i>		G1	S1	
<i>Grimmia mollis</i> (Hydrogrimmia mollis)	grimmia dry rock moss	G5	S1S3	RMNP
<i>Grimmia teretinervis</i>	grimmia dry rock moss	G3G5	S1S3	RMNP
<i>Gymnomitrium corallioides</i>		G4G5	S1S3	RMNP
<i>Hylocomiastrum pyrenaicum</i>	hylocomiastrum moss	G5	S1S3	RMNP
<i>Hylocomium alaskanum</i>	splendid feather moss	G5	S1S3	RMNP
<i>Leptopterigynandrum austro-alpinum</i>	alpine leptopterigynandrum moss	G3G5	S1S3	RMNP
<i>Mnium blyttii</i>	Blytt's calcareous moss	G5?	S1S3	RMNP

Boulder County Species of Special Concern and Significant Natural Communities

State Scientific Name	State Common Name	CNHP Global Rank	CHNP State Rank	Other Agency Ranking
<i>Nardia geoscyphus</i>		G5	S1S3	RMNP
<i>Oreas martiana</i>	oreas moss	G5?	S1S3	RMNP
<i>Plagiothecium cavifolium</i>	plagiothecium moss	G5	S1S3	RMNP
<i>Pleurozium schreberi</i>	Schreber's big red stem moss, feathermoss	G5	S1S3	RMNP
<i>Pohlia tundrae</i>	tundra pohlia moss	G2G3	S1S3	RMNP
<i>Ptilium crista-castrensis</i>	knights plume moss	G5	S1S3	
<i>Rhytidiadelphus triquetrus</i>	rough goose neck moss	Unranked	Unranked	BCPOS
<i>Rhytidiopsis robusta</i>	robust rhytidiopsis moss	Unranked	Unranked	BCPOS
<i>Roellia roellii</i>	Roell's moss	G4	S1S3	RMNP
<i>Sphagnum angustifolium</i>	narrowleaf peatmoss	G5	S2	USFS
<i>Sphagnum contortum</i>	contorted sphagnum	G5	S1S3	RMNP
<b>MONOCOTS</b>				
<i>Acorus calamus</i>	sweet flag	G4?	S1	OSMP
<i>Aristida basiramea</i>	forked threeawn	G5	S2	OSMP
<i>Bromus pubescens (Bromopsis pubescens)</i>	hairy woodland brome	Unranked	Unranked	OSMP
<i>Calypso bulbosa</i>	fairy slipper orchid	Unranked	Unranked	OSMP
<i>Carex capitata ssp. arctogena</i>	capitate sedge	G5	S2	
<i>Carex conoidea</i>	openfield sedge	G5	S1	
<i>Carex crawei</i>	Crawe's sedge	G5	S1	
<i>Carex deweyana</i>	Dewey's sedge	Unranked	Unranked	OSMP
<i>Carex diandra</i>	lesser panicled sedge	G5	S2	USFS, RMNP
<i>Carex disperma</i>	soft-leaf sedge	Unranked	Unranked	OSMP
<i>Carex lasiocarpa</i>	whollyfruit sedge	G5	S2	
<i>Carex limosa</i>	mud sedge	G5	S2/S3	RMNP
<i>Carex livida</i>	livid sedge	G5	S1	USFS
<i>Carex oreocharis</i>	grassyslope sedge	G3	S3	RMNP, OSMP
<i>Carex sartwellii</i>	Sartwell's sedge	G5	S2	
<i>Carex saximontana</i>	Rocky Mountain sedge	G5	S2	OSMP
<i>Carex sprengelii</i>	Sprengel's sedge	G5	S2	OSMP
<i>Carex stenoptila</i>	river bank sedge	G3	S3	RMNP
<i>Carex sychnocephala</i>	manyhead sedge	G5	SH	
<i>Carex torreyi</i>	Torrey sedge	G4G5	S1	OSMP
<i>Corallorhiza striata</i>	striped coralroot	Unranked	Unranked	OSMP
<i>Corallorhiza wisteriana</i>	spring coralroot	Unranked	Unranked	OSMP
<i>Cypripedium fasciculatum</i>	clustered lady's slipper	G4	S3S4	RMNP
<i>Cypripedium parviflorum (C. calceolus ssp. parviflorum)</i>	lesser yellow lady's slipper	G5	S2	USFS
<i>Eriophorum gracile</i>	slender cottongrass	G5	S1S2	USFS
<i>Hesperostipa spartea</i>	porcupinegrass	Unranked	Unranked	OSMP
<i>Juncus brachycephalus</i>	smallhead rush	G5	S1	
<i>Juncus filiformis</i>	thread rush	Unranked	Unranked	BCPOS
<i>Juncus tweedyi (J. brevicaudatus )</i>	Tweedy's rush	G5	S1	RMNP
<i>Juncus vaseyi</i>	Vasey's rush	G5	S1	RMNP
<i>Kobresia simpliciuscula</i>	simple bog sedge	G5	S1	
<i>Lilium philadelphicum</i>	wood lily	G5	S3S4	RMNP, OSMP
<i>Lipocarpa aristulata (Hemicarpha micrantha )</i>	awned halfchaff sedge	Unranked	Unranked	BCPOS
<i>Listera borealis</i>	northern twayblade	G5	S2	RMNP



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<i>Listera convallarioides</i>	broadlipped twayblade	G5	S2	RMNP, OSMP
<i>Listera cordata</i>	heartleaf twayblade	Unranked	Unranked	BCPOS
<i>Luzula subcapitata</i>	Colorado wood rush	G3	S3	RMNP
<i>Malaxis monophyllos</i> (M. <i>brachypoda</i> , M. <i>monophyllos</i> ssp. <i>brachypoda</i> )	white adder mouth orchid	G5T4T5	S1	USFS, OSMP
<i>Phippsia algida</i>	icegrass	G5	S2	
<i>Piperia unalascensis</i>	slender-spire orchid	Unranked	Unranked	OSMP
<i>Potamogeton diversifolius</i>	waterthread pondweed	G5	S1	OSMP
<i>Potamogeton epihydrus</i>	ribbonleaf pondweed	Unranked	Unranked	BCPOS
<i>Ruppia cirrhosa</i>	spiral ditchgrass	Unranked	Unranked	BCPOS
<i>Schizachne purpurascens</i>	false melic, purple oat	Unranked	Unranked	OSMP
<i>Sisyrinchium pallidum</i>	pale blue-eyed grass	G3	S3	BLM, RMNP
<i>Smilax lasioneura</i>	Blue Ridge carrionflower	G5	S3S4	OSMP
<i>Spiranthes diluvialis</i>	Ute ladies'-tresses	G2G3	S2	LT, SWAP Tier 1, OSMP
<b>DICOTS</b>				
<i>Aletes humilis</i>	Colorado aletes	G2G3	S2S3	RMNP
<i>Alsinanthe stricta</i> (Minuartia <i>stricta</i> )	bog stitchwort, rock sandwort	Unranked	Unranked	RMNP
<i>Amorpha nana</i>	dwarf leadplant	G5	S2	OSMP
<i>Anagallis minima</i> (Centunculus <i>minimus</i> )	Chaffweed	G5	S1	OSMP
<i>Antennaria howellii</i>	Howell's pussytoes	Unranked	Unranked	OSMP
<i>Apios americana</i>	American groundnut	G5	S1	OSMP
<i>Aquilegia saximontana</i>	Rocky Mountain blue columbine	G3	S3	RMNP
<i>Aralia nudicaulis</i>	wild sarsaparilla	Unranked	Unranked	OSMP
<i>Artemisia pattersonii</i>	Patterson's wormwood	G3G4	S2S3	RMNP
<i>Artemisia tridentata</i> ssp. <i>vaseyana</i> (Seriphidium <i>vaseyanum</i> )	mountain sagebrush	Unranked	Unranked	BCPOS
<i>Asclepias stenophylla</i>	narrow-leaved milkweed	G4G5	S2	OSMP
<i>Astragalus canadensis</i>	Canadian milkvetch	Unranked	Unranked	OSMP
<i>Astragalus sparsiflorus</i>	Front Range milkvetch	G2	S2	SWAP Tier 2
<i>Betula papyrifera</i>	paper birch	G5	S1	OSMP
<i>Castilleja puberula</i>	shortflower Indian paintbrush, downy indian-paintbrush	G3	S2S3	SWAP Tier 2, RMNP
<i>Chionophila jamesii</i>	Rocky Mountain snowlover	G4?	S3S4	RMNP
<i>Chrysosplenium tetrandrum</i>	northern golden saxifrage	Unranked	Unranked	BCPOS
<i>Claytonia rubra</i>	redstem springbeauty	G5	S1	
<i>Corylus cornuta</i>	beaked hazelnut	Unranked	Unranked	OSMP
<i>Crataegus chrysocarpa</i>	fireberry, yellow hawthorn	G5	S1	
<i>Crocanthemum bicknellii</i> (Helianthemum <i>bicknellii</i> )	hoary frostweed	G5	S2	OSMP
<i>Draba crassa</i>	thickleaf draba	G3G4	S3	RMNP
<i>Draba exungiculata</i>	clawless draba	G2	S2	SWAP Tier 2, USFS
<i>Draba fladnizensis</i>	Austrian draba, arctic draba	G5	S3	RMNP
<i>Draba grayana</i>	Gray's draba	G3	S3	SWAP Tier 2, USFS, RMNP
<i>Draba streptobrachia</i>	alpine tundra draba	G3	S3	RMNP
<i>Drymaria effusa</i> var. <i>depressa</i>	pinewoods drymary, spreading drymaria	G4T4	S1	RMNP

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<i>Eustoma exaltatum</i> ssp. <i>russellianum</i> ( <i>Eustoma grandiflorum</i> )	showy prairie gentian	G5T5?	S3S4	OSMP
<i>Humulus neomexicanus</i>	common hop	Unranked	Unranked	OSMP
<i>Lactuca biennis</i>	tall blue lettuce	Unranked	Unranked	OSMP
<i>Lactuca canadensis</i>	Canada lettuce	Unranked	Unranked	OSMP
<i>Lemna minuta</i>	least duckweed	Unranked	Unranked	BCPOS
<i>Liatris ligulistylis</i>	Rocky Mountain blazing star, gay-feather	G5?	S2	RMNP, OSMP
<i>Machaeranthera coloradoensis</i>	Colorado tansyaster	G3	S3	USFS
<i>Menyanthes trifoliata</i>	buckbean	Unranked	Unranked	BCPOS
<i>Mentzelia sinuata</i> ( <i>Mentzelia speciosa</i> ; <i>Nuttallia sinuata</i> ; <i>Nuttallia multiflora</i> )	leechleaf blazingstar, wavy- leaf stickleaf	G3	S3	RMNP, OSMP
<i>Mimulus gemmiparus</i>	Rocky Mountain monkeyflower, budding monkeyflower	G1	S1	SWAP Tier 2, USFS, RMNP
<i>Oenothera coloradensis</i> ( <i>Gaura neomexicana</i> ssp. <i>coloradensis</i> )	Colorado butterfly plant	G3T2	S1	SWAP Tier 1, OSMP
<i>Osmorhiza longistylis</i>	longstyle sweetroot	Unranked	Unranked	OSMP
<i>Oxytropis parryi</i>	Parry's oxytrope	G5	S1	
<i>Packera debilis</i>	weak groundsel	G4	S1	
<i>Papaver radiculatum</i> ssp. <i>kluanense</i> ( <i>P. kluanense</i> , <i>P. lapponicum</i> ssp. <i>occidentale</i> )	rooted poppy, alpine poppy	G5T4	S3S4	RMNP
<i>Parnassia kotzebuei</i>	Kotzebue's grass of parnassus	G5	S2	USFS, RMNP
<i>Pediocactus simpsonii</i>	mountain ball cactus	G4	Unranked	BCPOS, OSMP
<i>Pedimelum argophyllum</i>	silverleaf Indian breadroot, silver-leaf scurf pea	Unranked	Unranked	BCPOS, OSMP
<i>Pedimelum esculentum</i>	large Indian breadroot	Unranked	Unranked	BCPOS
<i>Penstemon harbourii</i>	Harbour's beardtongue	G3G4	S3S4	RMNP
<i>Penstemon gracilis</i>	lilac penstemon	Unranked	Unranked	OSMP
<i>Pericome caudata</i>	mountain tail-leaf	Unranked	Unranked	OSMP
<i>Phacelia denticulata</i>	Rocky Mountain phacelia	G3	S2	
<i>Physaria bellii</i>	Bell's twinpod	G2G3	S2S3	SWAP Tier 2, OSMP
<i>Physaria bellii</i> x <i>vitulifera</i>	twinpod hybrid	GNA	S1	
<i>Physaria vitulifera</i>	fliddleleaf twinpod	G3	S3	OSMP
<i>Potentilla ambigens</i>	silkyleaf cinquefoil	G3	S2	
<i>Potentilla rupicola</i> ( <i>P. effusa</i> var. <i>rupicola</i> )	rock cinquefoil	G5T2	S2	SWAP Tier 2, USFS, RMNP
<i>Pyrola picta</i>	whiteveined wintergreen, pictureleaf wintergreen	G4G5	S3S4	RMNP
<i>Ranunculus abortivus</i>	littleleaf buttercup	Unranked	Unranked	OSMP
<i>Ranunculus gelidus</i> ssp. <i>grayi</i> ( <i>R. karelinii</i> )	ice cold buttercup, tundra buttercup	G5	S2	
<i>Rotala ramosior</i>	toothcup	G5	S1	OSMP
<i>Rubus pubescens</i> var. <i>pubescens</i> ( <i>Cylactis pubescens</i> )	dwarf red blackberry	Unranked	Unranked	OSMP
<i>Salix candida</i>	sageleaf willow	G5	S2	USFS
<i>Salix serissima</i>	autumn willow	G5	S1	USFS, RMNP
<i>Sanicula marilandica</i>	Maryland sanicula	Unranked	Unranked	OSMP
<i>Stuckenia vaginata</i>	sheathed pondweed	Unranked	Unranked	BCPOS
<i>Telesonix jamesii</i>	James's telesonix	G3G4	S3	SWAP Tier 2, RMNP
<i>Thelypodium sagittatum</i>	arrow thelypod	G4	S1	

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<i>Tonestus lyallii</i> ( <i>Haplopappus lyallii</i> )	Lyall's goldenweed	Unranked	Unranked	RMNP
<i>Triodanis leptocarpa</i>	slim-pod Venus's Looking-glass	G5?	S1	OSMP
<i>Utricularia minor</i>	lesser bladderwort	G5	S3	USFS
<i>Utricularia ochroleuca</i>	yellowishwhite bladderwort	G4G5	S1	
<i>Viola pedatifida</i>	prairie violet	G5	S2	OSMP
<i>Viola selkirkii</i>	Selkirk's violet	G5	S2	USFS, RMNP
<b>SIGNIFICANT NATURAL COMMUNITIES</b>				
<i>Abies lasiocarpa</i> - <i>Picea engelmannii</i> / Moss Forest	Subalpine Fir - Engelmann Spruce / Moss Forest	G4	SU	
<i>Achnatherum hymenoides</i> Shale Barren Grassland	Indian Ricegrass Shale Barren Grassland	G2	SU	
<i>Alnus incana</i> - <i>Salix</i> ( <i>monticola</i> , <i>lucida</i> , <i>ligulifolia</i> ) Wet Shrubland	Gray Alder - (Park Willow, Shining Willow, Strapleaf Willow) Wet Shrubland	G3	S3	
<i>Alnus incana</i> - <i>Salix drummondiana</i> Wet Shrubland	Gray Alder - Drummond's Willow Wet Shrubland	G3	S3	
<i>Alnus incana</i> / <i>Equisetum arvense</i> Wet Shrubland	Gray Alder / Field Horsetail Wet Shrubland	G3	S1	
<i>Alnus incana</i> / <i>Mesic Forbs</i> Wet Shrubland	Thinleaf Alder / Mesic Forb Riparian Shrubland	G3	S3	
<i>Alnus incana</i> / <i>Mesic Graminoids</i> Wet Shrubland	Gray Alder / Mesic Graminoids Wet Shrubland	G3	S2	
<i>Andropogon gerardii</i> - <i>Schizachyrium scoparium</i> Northwestern Plains Grassland	Big Bluestem - Little Bluestem Northwestern Plains Grassland	G2?	S2	
<i>Andropogon gerardii</i> - <i>Sorghastrum nutans</i> West-Central Plains Grassland	Big Bluestem - Indiangrass West-Central Plains Grassland	G2	S2	
<i>Andropogon gerardii</i> - <i>Sporobolus heterolepis</i> Western Foothills Grassland	Big Bluestem - Prairie Dropseed Western Foothills Grassland	G2	S1	
<i>Betula glandulosa</i> / <i>Sphagnum</i> spp. Shrub Fen	Dwarf Birch / Sphagnum Shrubland	G2	S2	
<i>Betula occidentalis</i> / <i>Maianthemum stellatum</i> Wet Shrubland	Water Birch / Starry False Lily-of-the-Valley Wet Shrubland	G4?	S3	
<i>Betula occidentalis</i> / <i>Mesic Graminoids</i> Wet Shrubland	Water Birch / Mesic Graminoids Wet Shrubland	G3	S2	
<i>Bouteloua gracilis</i> - <i>Bouteloua hirsuta</i> Grassland	Blue Grama - Hairy Grama Grassland	G3G4	SU	
<i>Bouteloua gracilis</i> - <i>Bouteloua dactyloides</i> Grassland	Blue Grama - Buffalograss Grassland	G4	S2?	
<i>Calamagrostis stricta</i> Wet Meadow	Slimstem Reedgrass Wet Meadow	GU	S2S3	
<i>Caltha leptosepala</i> Wet Meadow	White Marsh-marigold Wet Meadow	G4	S4	
<i>Carex aquatilis</i> / <i>Sphagnum</i> spp. Fen	Water Sedge - Peatmoss species Fen	G2G3	S2S3	
<i>Carex diandra</i> Wet Meadow Fen	Lesser Panicked Sedge Wet Meadow Fen	GNR	S1	
<i>Carex lasiocarpa</i> Fen	Woolly-fruit Sedge Fen	G4?	S1	
<i>Carex praegracilis</i> Wet Meadow	Clustered Field Sedge Wet Meadow	G3G4	S2	
<i>Carex rupestris</i> - <i>Trifolium dasyphyllum</i> Alpine Turf	Curly Sedge - Alpine Clover Alpine Turf	G3G4	S1	
<i>Carex saxatilis</i> Fen	Rock Sedge Fen	G3	S1	
<i>Celtis laevigata</i> var. <i>reticulata</i> / <i>Pseudoroegneria spicata</i> Wet Scrub	Netleaf Hackberry / Bluebunch Wheatgrass Wet Scrub	G2G3	S1	



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<i>Cercocarpus montanus</i> / <i>Elymus lanceolatus</i> ssp. <i>lanceolatus</i> Shrubland	Mountain Mahogany / Griffith's Wheatgrass Shrubland	GU	S2	
<i>Cercocarpus montanus</i> - <i>Rhus trilobata</i> / <i>Andropogon gerardii</i> Shrubland	Mountain Mahogany - Skunkbush / Big Bluestem Shrubland	G2G3	S2	
<i>Cercocarpus montanus</i> / <i>Achnatherum scribneri</i> Shrubland	Alderleaf Mountain-mahogany / Scribner's Needlegrass Shrubland	G3	S3	
<i>Cercocarpus montanus</i> / <i>Hesperostipa comata</i> Shrubland	Alderleaf Mountain-mahogany / Needle-and-Thread Shrubland	G2	S2	
<i>Cercocarpus montanus</i> / <i>Hesperostipa neomexicana</i> Shrubland	Alderleaf Mountain-mahogany / New Mexico Feathergrass Shrubland	G2G3	S2	
<i>Corylus cornuta</i> Wet Shrubland	Beaked Hazelnut Wet Shrubland	G3	S1	
<i>Danthonia parryi</i> Grassland	Parry's Oatgrass Grassland	G3	S3	
<i>Deschampsia cespitosa</i> - Wet Meadow	Tufted Hairgrass - Wet Meadow	G4	S4	
<i>Distichlis spicata</i> Alkaline Wet Meadow	Salt Meadows	G5	S5	
<i>Eleocharis quinqueflora</i> Fen	Few-flower Spikerush Fen	G4	S4	
<i>Eleocharis rostellata</i> Marsh	Beaked Spikerush Marsh	G3	S2	
<i>Festuca thurberi</i> Subalpine Grassland	Thurber's Fescue Subalpine Grassland	G3	S1S2	
<i>Geum rossii</i> - <i>Trifolium</i> ssp. Alpine Turf	Ross' Avens - Clover species Alpine Turf	G3	S2	
<i>Glyceria grandis</i> Wet Meadow	American Mannagrass Wet Meadow	G2?	S1	
<i>Hesperostipa comata</i> - <i>Achnatherum hymenoides</i> Grassland	Needle-and-Thread - Indian Ricegrass Grassland	G2?	S1	
<i>Hesperostipa comata</i> - <i>Bouteloua gracilis</i> Central Grassland	Needle-and-Thread - Blue Grama Central Grassland	GNR	S2	
<i>Hesperostipa comata</i> Colorado Front Range Grassland	Needle-and-Thread Colorado Front Range Grassland	G1G2	S2	
<i>Hesperostipa neomexicana</i> Grassland	New Mexico Feathergrass Grassland	G3	S2	
<i>Juncus parryi</i> / <i>Sibbaldia procumbens</i> Alpine Snowbed	Parry's Rush / Creeping Sibbaldia Alpine Snowbed	G3G4	S1	
<i>Kobresia myosuroides</i> - <i>Carex rupestris</i> var. <i>drummondiana</i> Alpine Turf	Bellardi Bog Sedge - Drummond's Sedge Alpine Turf	G3	S1	
<i>Muhlenbergia montana</i> Grassland	Mountain Muhly Grassland	G3G4	S2	
<i>Muhlenbergia montana</i> - <i>Hesperostipa comata</i> Grassland	Mountain Muhly - Needle-and-Thread Grassland	G1G2	S2	
<i>Pascopyrum smithii</i> - <i>Eleocharis</i> spp. Wet Meadow	Western Wheatgrass - Spikerush species Wet Meadow	G1	S1	
<i>Picea engelmannii</i> / <i>Trifolium dasyphyllum</i> Forest	Engelmann Spruce / Alpine Clover Forest	G2?	S2	
<i>Picea pungens</i> / <i>Alnus incana</i> Riparian Woodland	Blue Spruce / Gray Alder Riparian Woodland	G3	S3	
<i>Picea pungens</i> / <i>Betula occidentalis</i> Riparian Woodland	Blue Spruce / Water Birch Riparian Woodland	G2	S2	
<i>Picea pungens</i> / <i>Linnaea borealis</i> Forest	Blue Spruce / Twinflower Forest	G4	SU	
<i>Pinus flexilis</i> / <i>Arctostaphylos uva-ursi</i> Woodland	Limber Pine / Kinnikinnick Woodland	G4	S1	
<i>Pinus flexilis</i> / <i>Juniperus communis</i> Woodland	Limber Pine / Common Juniper Woodland	G5	S5	

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<i>Pinus ponderosa</i> / <i>Artemisia tridentata</i> ssp. <i>vaseyana</i> Woodland	Ponderosa Pine / Mountain Big Sagebrush Woodland	GNR	S1	
<i>Pinus ponderosa</i> / <i>Carex inops</i> ssp. <i>heliophila</i> Woodland	Ponderosa Pine / Sun Sedge Woodland	G3G4	S1	
<i>Pinus ponderosa</i> / <i>Cercocarpus montanus</i> / <i>Andropogon gerardii</i> Open Woodland	Ponderosa Pine / Alderleaf Mountain-mahogany / Big Bluestem Open Woodland	G2	S2	
<i>Pinus ponderosa</i> / <i>Leucopoa kingii</i> Woodland	Ponderosa Pine / Spike Fescue Woodland	G3	S3	
<i>Pinus ponderosa</i> / <i>Muhlenbergia montana</i> Woodland	Ponderosa Pine / Mountain Muhly Woodland	G4G5	S2	
<i>Pinus ponderosa</i> var. <i>scopulorum</i> / <i>Purshia tridentata</i> Southern Rocky Mountain Woodland	Ponderosa Pine / Antelope Bitterbrush Southern Rocky Mountain Woodland	G3G5	S5	
<i>Pinus ponderosa</i> / <i>Schizachyrium scoparium</i> Woodland	Ponderosa Pine / Little Bluestem Woodland	G3G4	S1	
<i>Populus angustifolia</i> / <i>Alnus incana</i> Riparian Woodland	Narrowleaf Cottonwood / Gray Alder Riparian Woodland	G3	S3	
<i>Populus angustifolia</i> / <i>Betula occidentalis</i> Riparian Woodland	Narrowleaf Cottonwood / Water Birch Riparian Woodland	G3	S3	
<i>Populus angustifolia</i> / <i>Salix irrorata</i> Riparian Woodland	Narrowleaf Cottonwood / Dewystem Willow Riparian Woodland	G2	S2	
<i>Populus balsamifera</i> Woodland	Balsam Poplar Woodland	GU	S2	
<i>Populus deltoides</i> - ( <i>Salix amygdaloides</i> ) / <i>Salix</i> ( <i>exigua</i> , <i>interior</i> ) Floodplain Woodland	Eastern Cottonwood - (Peachleaf Willow) / (Narrowleaf Willow, Sandbar Willow) Floodplain Woodland	G3G4	S3	
<i>Populus tremuloides</i> / <i>Acer glabrum</i> Forest	Quaking Aspen / Rocky Mountain Maple Forest	G3	S3	
<i>Populus tremuloides</i> / <i>Alnus incana</i> Riparian Forest	Quaking Aspen / Gray Alder Riparian Forest	G3	S4	
<i>Populus tremuloides</i> / <i>Betula occidentalis</i> Riparian Forest	Quaking Aspen / Water Birch Riparian Forest	G3	S2	
<i>Populus tremuloides</i> / <i>Calamagrostis canadensis</i> Riparian Forest	Quaking Aspen / Bluejoint Swamp Forest	G3	SU	
<i>Populus tremuloides</i> / <i>Corylus cornuta</i> Forest	Quaking Aspen / Beaked Hazelnut Forest	G3	S1	
<i>Populus tremuloides</i> / <i>Lonicera involucrata</i> Forest	Quaking Aspen / Twinberry Honeysuckle Forest	G3	S1	
<i>Populus tremuloides</i> / <i>Ribes montigenum</i> Riparian Forest	Quaking Aspen / Gooseberry Currant Riparian Forest	G2	SU	
<i>Populus tremuloides</i> / <i>Vaccinium myrtillus</i> Forest	Quaking Aspen / Whortleberry Forest	G3	S1	
<i>Potamogeton natans</i> Aquatic Vegetation	Floating Pondweed Aquatic Vegetation	G5?	S1	
<i>Pseudotsuga menziesii</i> / <i>Betula occidentalis</i> Riparian Woodland	Douglas-fir / Water Birch Riparian Woodland	G3?	S2	
<i>Pseudotsuga menziesii</i> / <i>Paxistima myrsinites</i> Forest	Douglas-fir / Oregon Boxleaf Forest	G2G3	S2	

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<i>Purshia tridentata</i> / <i>Artemisia frigida</i> / <i>Hesperostipa comata</i> Shrubland	Antelope Bitterbrush / Prairie Sagewort / Needle-and-Thread Shrubland	G1G2	S1S2	
<i>Purshia tridentata</i> / <i>Muhlenbergia montana</i> Shrubland	Antelope Bitterbrush / Mountain Muhly Shrubland	G2	S2	
<i>Rhus trilobata</i> Moist Wet Shrubland	Skunkbush Sumac Moist Wet Shrubland	G3	S3	
<i>Rhus trilobata</i> Rocky Mountain Shrubland	Skunkbush Sumac Rocky Mountain Shrubland	G2	S2	
<i>Salix arctica</i> / <i>Salix nivalis</i> Dwarf Shrubland	Arctic Willow - Net-Veined Willow Shrubland	G2GQ	S2	
<i>Salix bebbiana</i> Wet Shrubland	Bebb's Willow Wet Shrubland	G3?	S2	
<i>Salix boothii</i> / <i>Calamagrostis canadensis</i> Shrubland	Booth Willow / Canadian Reed Grass Shrubland	G3G4Q	S1	
<i>Salix boothii</i> / <i>Carex utriculata</i> Shrubland	Booth's Willow / Beaked Sedge Shrubland	G4	S2	
<i>Salix boothii</i> / <i>Deschampsia caespitosa</i> / <i>Geum rossii</i> Wet Shrubland	Booth's Willow / Tufted Hairgrass - Ross' Avens Wet Shrubland	G4	S4	
<i>Salix boothii</i> Mesic Forbs Wet Shrubland	Booth's Willow / Mesic Forbs Wet Shrubland	G3	S3	
<i>Salix boothii</i> Mesic Graminoids Wet Shrubland	Booth's Willow / Mesic Graminoids Wet Shrubland	G3?	S3	
<i>Salix brachycarpa</i> / <i>Carex aquatilis</i> Wet Shrubland	Short-fruit Willow / Water Sedge Wet Shrubland	G2G3	S2	
<i>Salix drummondiana</i> / <i>Calamagrostis canadensis</i> Wet Shrubland	Drummond's Willow / Bluejoint Wet Shrubland	G3	S3	
<i>Salix geyeriana</i> - <i>Salix monticola</i> / <i>Calamagrostis canadensis</i> Wet Shrubland	Geyer's Willow - Park Willow / Bluejoint Wet Shrubland	G3	S2	
<i>Salix geyeriana</i> / <i>Calamagrostis canadensis</i> Wet Shrubland	Geyer's Willow / Bluejoint Wet Shrubland	G5	S2	
<i>Salix geyeriana</i> / <i>Carex aquatilis</i> Wet Shrubland	Geyer's Willow / Water Sedge Wet Shrubland	G3	S2	
<i>Salix monticola</i> / <i>Calamagrostis canadensis</i> Wet Shrubland	Park Willow / Bluejoint Wet Shrubland	G3	S3	
<i>Salix monticola</i> / <i>Carex aquatilis</i> Wet Shrubland	Park Willow / Water Sedge Wet Shrubland	G3	S2	
<i>Salix monticola</i> / <i>Carex utriculata</i> Wet Shrubland	Park Willow / Northwest Territory Sedge Wet Shrubland	G3	S3	
<i>Salix monticola</i> / Mesic Graminoids Wet Shrubland	Park Willow / Mesic Graminoids Wet Shrubland	G3	S3	
<i>Salix planifolia</i> / <i>Deschampsia caespitosa</i> Wet Shrubland	Diamondleaf Willow / Tufted Hairgrass Wet Shrubland	G2G3	S2	
<i>Salix wolfii</i> / Mesic Forbs Wet Shrubland	Wolf's Willow / Mesic Forbs Wet Shrubland	G3	S3	
<i>Schizachyrium scoparium</i> - <i>Bouteloua curtipendula</i> Western Great Plains Grassland	Little Bluestem - Sideoats Grama Western Great Plains Grassland	G3	S2	
<i>Spartina pectinata</i> Western Wet Meadow	Prairie Cordgrass Western Wet Meadow	G3?	S2	
<i>Suaeda calceoliformis</i> Wet Meadow	Pursh Seepweed Wet Meadow	GNR	SU	
<i>Symphoricarpos occidentalis</i> Shrubland	Western Snowberry Shrubland	G4G5	S4	
<b>SPECIES WITH THE POTENTIAL TO OCCUR IN BOULDER COUNTY</b>				
<i>Andraea heinemannii</i>		G3G5	S1S3	RMNP



Boulder County Species of Special Concern and Significant Natural Communities

State Scientific Name	State Common Name	CNHP Global Rank	CNHP State Rank	Other Agency Ranking
<i>Botrychium tunux</i>	Moosewort	G3G4	S2	
<i>Carex leptalea</i>	bristle-stalk sedge	G5	S1	RMNP
<i>Cystopteris montana</i>	mountain bladder fern	G5	S1	RMNP
<i>Draba porsildii</i>	Porsild's draba	Unranked	Unranked	RMNP
<i>Erocallis triphylla</i>	Dwarf spring beauty	G4?	S2	RMNP
<i>Heteranthera limosa</i>	blue mudplantain	Unranked	Unranked	BCPOS
<i>Lewisia rediviva</i>	Bitterroot	G5	S3	RMNP
<i>Myosurus apetalus</i> var. <i>montanus</i>	bristly mousetail	Unranked	Unranked	BCPOS
<i>Oligoneuron album</i> ( <i>Solidago ptarmicoides</i> , <i>Unamia alba</i> )	prairie goldenrod	G5	S2	
<i>Potamogeton praelongus</i>	whitestem pondweed	G5	S1	
<i>Rhytidium rugosum</i>	golden glade-moss	G5	S1S3	RMNP
<i>Ribes americanum</i>	American black current	G5	S2	
<i>Sagittaria brevirostra</i>	shortbeak arrowhead	Unranked	Unranked	BCPOS

# Boulder County Species of Special Concern and Significant Natural Communities

## **DEFINITIONS**

### **Federal Status**

ESA, United States Endangered Species Act

LE, Listed Endangered

LT, Listed Threatened

C, Candidate for listing

### **Colorado Natural Heritage Program (CNHP)/NatureServe Imperilment Ranks\***

G-Rank: Global Rank, S-Rank: Colorado Rank

G/S1, Critically Imperiled

G/S2, Imperiled

G/S3, Vulnerable to extirpation, typically between 21-100 occurrences.

G/S4, Apparently secure

G/S5 Secure

G/S?, Unranked. Some evidence that species may be imperiled, but awaiting formal rarity ranking.

G/SU, Unrankable due to lack of information or substantially conflicting information.

G/SH, Possibly extirpated or extinct.

GQ, Indicates uncertainty about taxonomic status.

G/S#?, Indicates uncertainty about an assigned rank, or the rank has not yet been assessed.

G#T#, Trinomial rank (T) is used for subspecies or varieties. These species or subspecies are ranked on the same criteria as G1- G5.

GNR/SNR, Global not ranked/State not ranked. CNHP has not yet looked at this species.

TNR, Not yet ranked globally due to lack of information.

*\*Note: Where two numbers appear in a global or state rank, e.g., S2S3, the actual rank of the element falls between the two numbers. CNHP experts tend to round up to the more conservative number, e.g., if S2S3, consider the species a 'S2' until further information is available (Jill Handwerk, personal communication).*

### **(BLM) Bureau of Land Management Colorado Sensitive Species List**

Sensitive plant species or communities

### **(BCPOS) Boulder County Parks & Open Space Sensitive Status**

Sensitive species within Boulder County

### **(OSMP) City of Boulder Open Space and Mountain Parks Sensitive Status**

Sensitive plant species or communities as designated on OSMP lands.

### **(CPW) Colorado Parks and Wildlife State Wildlife Action Plan (SWAP)**

CPW Rare Plant Addendum to the SWAP (2015)

### **(RMNP) National Park Service, Rocky Mountain National Park Sensitive Status**

Sensitive species appearing on NPS' 'State Endangered, Threatened or Rare Species for Rocky Mountain National Park' list (NPS 2006).

### **(USFS) United States Forest Service Sensitive Status**

Indicates a sensitive species designated by the USFS Rocky Mountain Regional Forester to occur on USFS managed lands within Boulder County.

## **ATTACHMENT E. Excerpts from Carolyn Holmberg Preserve at Rock Creek Farm Management Plan 2020 Update**

### Property Update-Natural Resources

Wildlife page 29:

CWH #36 is a discrete, 40-acre exclusion set aside for black-tailed prairie dogs and nesting burrowing owls, with confirmed presence of Ord's kangaroo rat. This 40-acre site was established by the BOCC. It was designated as CWH in 1983 and had been farmed in the past. The 2002 plan envisioned that CWH #36 could be successfully managed given that the surrounding land use is designated for agricultural operations. However, changes in farming operations have intensified the use to include installation of pivot irrigation, increased visitation as part of the Fall U-Pick-Em pumpkin agritourism, an overhead utility line, and increased herbivory by a dense and confined prairie dog colony. These changes have reduced the suitability of the habitat to support nesting burrowing owls.

### **3.1 Development of Management Direction** starting on page 39:

The POS ID team used the list of planning issues to develop a matrix of management options. Those were then assessed with the goal of defining what is desirable and achievable for the management of any given resource while considering the impacts on other resources. This framework is intended to ensure each resource of the property is provided for and maintained through balanced, sound, informed, and sustainable land management practices.

The team determined several issues needed an assessment of several options to identify a preferred alternative as a staff recommendation for guiding future land management. These issues generally involve an intersection of resource uses. Therefore, some degree of compromise is needed to reduce conflict and still ensure the vision and goals of the property can be sustainably achieved. They include:

1. Designation and use of 40-acre burrowing owl preserve and field 65 – Subsequent to the 1987 revision of the management plan, the BOCC set aside 40 acres of non-irrigated dryland cropland that was no longer in production in the northern end of the property as a prairie dog/burrowing owl preserve. This area was set aside because of the prevalence of nesting burrowing owls in this area. Since 2002, BCPOS staff and the agricultural tenant have spent considerable time and effort to manage prairie dogs that migrate off the 40-acre preserve into the adjacent cultivated fields designated as NPD, as well as installing and maintaining barrier fencing materials.

### **3.2 Management Direction**

The following section details the 13 planning issues listed above that need resolution to improve land management at CHP/RCF. This section provides a summary of each planning issue and includes a set of objectives, background information, opportunities and options considered, as well as the proposed recommendations for management direction.

#### **#1 DESIGNATION AND USE OF 40-ACRE BURROWING OWL PRESERVE AND FIELD 65**

1. Objectives
  - Emphasize contiguous wildlife habitat in the southern portion of the property
  - Encourage more efficient use of agricultural lands of statewide and local importance
  - Consolidate cropland management
  - Minimize challenges of managing prairie dogs in surrounding agricultural/NPD areas



Background The BOCC set aside field 7 as a burrowing owl preserve subsequent to a management plan amendment completed for CHP/RCF in the late 1980s. Located in the northern end of the property, field 7 had been non-irrigated dryland that was no longer in active agricultural production. Field 65, located west of 104th Street and north of the existing Cradleboard Trail, is designated as a Multiple Objective Area with active prairie dog colonies and includes rangeland and dryland cropland.

The preserve on field 7 is surrounded by active irrigated cropland, which is designated as NPD. A handful of burrowing owl nests were observed on the preserve between 2001 and 2012, when the last nesting occurred. It is speculated that changed conditions, including the installation of a center pivot and visitor use activities associated with the U-Pick-Em pumpkin fest, have affected the potential for successful nesting activities. The size of this fragmented habitat patch may be contributing to unsuccessful nesting activities. Prairie dogs often encroach onto surrounding NPD cropland. Management activities to contain the prairie dog colony requires ongoing levels of high maintenance and funding.

#### Recommendation

**The designation of the current 40-acre preserve (field 7) will be changed to support active agricultural operations. Although it might remain rangeland in the short term, it most likely would ultimately be transferred to irrigated cropland (it was non-irrigated dryland cropland before). There is the potential to relocate a future center pivot sprinkler. An existing overhead power line would need to be relocated underground to do so.**

Field 65 will be reclaimed to perennial grassland to support contiguous wildlife habitat area and grasslands west of South 104th Street. Grassland restoration will require an initial cover crop to be planted. Livestock grazing will be used to remove cover crop and manage weeds as part of restoration efforts. Once reseeding of perennial grasses occurs, a respite from grazing is anticipated for two to five years to allow successful establishment. By consolidating agricultural acreage and emphasizing prairie dogs and grassland restoration in the southern and western parts of the property, BCPOS will be able to more realistically manage areas suitable for burrowing owl nesting. These contiguous acres provide areas relatively undisturbed by recreational or agricultural activities.

#### Field 7

- 1. Change designation and use to NPD irrigated cropland in support of active agricultural operation**
- 2. Place existing overhead power line underground in order to irrigate this field with a center pivot or lateral sprinkler**
- 3. Relocate prairie dogs to suitable areas within BCPOS lands using the guidelines and relocation criteria defined in the Prairie Dog Policy**

#### Field 65

1. Discontinue crop production as part of the agricultural operation
2. Temporarily defer livestock grazing until the plant community recovers
3. Following grassland restoration and after an estimated two- to five-year respite, continue livestock grazing as an allowable use through a prescriptive grazing plan, as described in the grassland restoration recommendations (below), in consideration of goals for sustaining prairie dog habitat