

**T&E PLANT ELEMENT OCCURRENCE  
EXTERNAL FIELD FORM DATA DICTIONARY**



Element Scientific Name: \_\_\_\_\_  
(For a list of elements tracked by CNHP, refer to <http://www.cnhp.colostate.edu/list.html>)

**Element Scientific Name:** State scientific name for an Element/Species.

Survey Date: (yyyy-mm-dd)

**Survey Date:** the year, month and day (or days) that you surveyed for the Element.

Observer(s) Name & Affiliation:  
Observer(s) Address & Phone Number:

**Observer(s) Name & Affiliation:** Your name and organization, if any

**Observer(s) Address & Phone Number:** email address and phone number so CNHP may contact you with any questions about the data you are submitting.

**Land Ownership**

Owner Type:  Private  USFS  BLM  State  Military  Indian  BuRec  NPS  Other: \_\_\_\_\_

Owner Name (or National Forest, BLM District, etc.): \_\_\_\_\_

Owner Comments (special requests, permissions, circumstances): \_\_\_\_\_

Data Sensitive Element Occurrence:  Y  N

If yes, list reason (i.e., landowner requests confidentiality): \_\_\_\_\_

**Ownership:** This field is used for information about the owner (e.g. owner(s) name, address, phone number, contacts other than owners, information about the owner (key to gate required, etc.).

**Data Sensitive Element Occurrence:** Indicates whether the location of the element occurrence is considered sensitive by landowner. Occurrences are most often considered sensitive due to land status, such private property. Precise locations of sensitive occurrences are not released.

**Locational Information (REQUIRED)**

*(Provide a photocopy of map with location of the occurrence marked or outlined, or a shapefile)*

Survey site Name (from 7.5' quad):

County: \_\_\_\_\_ Elevation (range if applicable): \_\_\_\_\_

Legal Description: Township: Range: Section: ¼ Sec:

Additional T/R/S, Sections or ¼ Secs:

GPS Coordinates: UTM Zone: Northing: Easting:

Additional UTM coordinates: Northing: Easting:

Datum:

GPS accuracy (if known):

GPS make/model:

**Locational Information:** This field provides the information CNHP needs to map the precise location of the observed element in our database. Redundancy is built in (i.e. requiring both TRS and GPS coordinates) to ensure elements are accurately mapped, and to compensate for any errors in reporting of locational data. Please report both the township, range section (TRS) where the element was found and

GPS coordinates of the occurrence. Indicate what projection the coordinates are in (we use NAD83 Zone 13 UTMs). GPS accuracy, if known, and make and model help us define the precision of the location.

**Directions:**

Driving and hiking directions and prominent topographical features:

**Directions:** Provide directions with enough detail that a person unfamiliar with the site could drive/navigate to the occurrence.

**Element Occurrence Data (REQUIRED)**

Number of Individuals (exact count, if feasible or check range below; if plants are spreading vegetatively, indicate number of aerial stems):

Estimated Population Size:

Size of Area Covered by Population:

Full extent of occurrence visited/mapped:

Additional EO Data Comments:

Phenology:

Reproductive Success:

Age Classes Present:

Vigor:

Pollinators:

Evidence of Disease, Predation, Herbivory or Injury:

Look alikes present:

Additional Site/Plant Condition Comments:

Landscape Context Comments:

**Number of Individuals:** Provide an exact count, if feasible or check one of the boxes indicating an estimated range of individuals if an exact count is not feasible. If plants are spreading vegetatively, indicate number of aerial stems.

**Estimated Population Size:** The entry for this field should be as precise as possible, avoid using terms like 100s or 1000s. Please also indicate the estimation method used (e.g. ocular estimate, plot, transect, etc.).

**Size of Area Covered by Population:** If feasible measure the area occupied by the plant occurrence, or calculate the area in GIS. Report as acres, square feet or square meters.

**Full extent of occurrence visited/mapped:** Some occurrences may be quite large, with subpopulations scattered over a large area, sometimes several kilometers. In that case, please indicate if you surveyed the entire extent of the known occurrence, or only a portion.

**Additional EO Data Comments:** Provide any comments you may have regarding the size and extent of the occurrence, which were not addressed above.

**Phenology:** Indicate what percent of the observed individuals are vegetative, dormant, or in flower and fruit, note that you may have plants that are in both flower and fruit, and therefore the total % may be more than 100%. Ex. - Vegetative: 20%, Flower, 70%, Fruit: 80%, Dormant: 5%.

**Reproductive success:** Is there evidence of seed dispersal and establishment, i.e. were seedlings observed?

**Age Classes Present:** Indicate the age classes of the individuals observed. Ex. – Seedling: 5%, Immature: 15%, Mature: 70%, Senescent: 10%.

**Vigor:** Do the plants, as a whole appear weak, normal or vigorous? For example, in a drought year plants may be feeble vs. a wet year when plant growth is vigorous.

**Pollinators:** Were any pollinators (bees, wasps, ants, flies, moths, etc.) observed on the plants? If yes, indicate the number and type of pollinators to the best of your ability.

**Evidence of Disease, Predation, Herbivory or Injury:** Avoid only answering yes, provide a list of what was observed (e.g. - appears to be grazed by elk, fungus on leaves, etc.)

Indicate the percent of the individuals affected, and the type of damage incurred. Ex.- 10% of the individuals were browsed by deer.

**Look alikes present:** Was there another species in the area that could be confused with the target species, and if so, what was the look alike species, and how did you distinguish it from the target species.

**Additional Site/Plant Condition Comments:** Provide any details on productivity [vigor], health of the population, degree of anthropogenic disturbance, naturalness of hydrology, and other ecological processes within the occurrence, not addressed above. Please provide % of occurrence affected, if known, following values for threats listed in Management Comments section. Ex.- Altered hydrology at the site is causing a low level (5-20%) of the plants to have reduced vigor.

**Landscape Context Comments:** An integrated measure of the quality of biotic and abiotic factors, structures, and processes surrounding the Element Occurrence (EO), and the degree to which they affect the continued existence of the occurrence. Components of this factor are:

- landscape structure and extent surrounding the EO, including genetic connectivity;
- development/maturity of the surrounding landscape context (for community EOs);
- ecological processes in the surrounding landscape context;
- species composition and biological structure of the surrounding landscape context;
- abiotic physical/chemical factors in the surrounding landscape context.

Please provide % of the surrounding landscape affected, if known, following values for threats listed in Management Comments section. Ex. – There is a moderate amount (20-60%) of the surrounding landscape which is fragmented by two-track roads.

**Element Occurrence Habitat Description**

Habitat in the immediate area (ex. shale barren):

Dominant Plant Community:

Additional Associated Plant Species:

Topographic Position:

Aspect:

Slope:

Slope Shape:

Light Exposure:

Moisture:

Proximity to moisture:

Soil Texture:

Geomorphic Land Form:

**Element Occurrence Habitat Description**

**Habitat in the immediate area:** Describe the general landscape on which the occurrence is found. Ex. shale barren.

**Dominant Plant Community:** List dominant species currently present, include age structure and percent cover if known. Ex. - Moderate cover (20-60%) of mature pinyon/juniper woodland.

**Additional Associated Plant Species:** List the top five plant species that are most commonly seen with this species.

**Topographic Position:** Domain values for Topographic Position are:

**Ridge Top/Interfluve** - (crest, summit, ridge): linear top of ridge, hill or mountain; the elevated area between two fluves (drainageways) that sheds water to the drainageways.

**Upper/High Slope** - (shoulder slope, upper slope, convex creep slope): geomorphic component that forms the uppermost inclined surface at the top of a slope. It comprises the transition zone from backslope to summit, and the surface is dominantly convex in profile and erosional in origin.

**Mesa or Plateau Top** - (high level) level top of mesa or plateau.

**Midslope** - (transportational midslope, middle slope): intermediate slope position between high and low.

**Cliff Face/Back Slope** - (dip slope): subset of midslopes which are steep, linear and may include cliff segments (fall faces).

**Shelf on Cliff Face**- (Step in slope, ledge, terracette): nearly level shelf interrupting a steep slope, rock wall, or cliff face.

**Low slope** - (lower slope, foot slope, colluvial footslope): inner gently inclined surface at the base of a slope. Surface profile is generally concave and a transition between midslope or back slope, and toeslope.

**Toe slope** - (alluvial toe slope): outermost gently inclined surface at base of a slope. Toe slopes in profile are commonly gentle and liner and characterized by alluvial deposition.

**Valley/Basin Floor** - (terrace): valley floor or shoreline representing the former position of an alluvial plain, lake, or shore. OR (depression): nearly level to gently sloping, bottom surface of an intermontane basin.

**Channel Wall** - (bank): sloping side of a channel.

**Channel Bed** - (narrow valley bottom, gully arroyo): bed of single or braided watercourse commonly barren of vegetation and formed of modern alluvium.

**(null)** - Not assessed or unknown

**Aspect:** The aspect(s) of the slope(s) (compass direction in which the slope faces) of the terrain on which the Element Occurrence (EO) is primarily located. Domain values for Aspect are:

Flat  
Variable  
N (338 - 22 degrees)  
NE (23 - 67 degrees)  
E (68 - 112 degrees)  
SE (113 - 157 degrees)  
S (158 - 202 degrees)  
SW (203 - 247 degrees)  
W (248 - 292 degrees)  
NW (293 - 337 degrees)

**Slope:** The general slope(s) of the terrain on which the Element Occurrence (EO) is primarily located. Domain values for Slope:

Flat (0%, 0 degrees)  
Gentle (0 - 5%, 1 - 10 degrees)  
Moderate (5 - 15%, 10 - 25 degrees)  
Somewhat steep (15 - 25%, 25 - 50 degrees)  
Steep (25 - 45%, 50 - 100 degrees)  
Very steep (45 - 70%, 100 - 275 degrees)  
Cliff (70 - 100%, 275 - 300 degrees)  
Overhanging/Sheltered (>100%, >300 degrees)

**Slope Shape:** The general shape of the slope on which the Element Occurrence (EO) is primarily located. Values are: Concave, Convex, Straight or Other. Multiple values may be selected.

**Light Exposure:** The general lighting pattern in the primary area in which the Element Occurrence (EO) occurs. Values are: Open, Shaded, Partial Shade and Other. Multiple values may be selected.

**Moisture:** The soil moisture in the primary area in which the Element Occurrence (EO) occurs. Values are: Dry, Moist, Saturated, Inundated, Seasonal Seepage, Streambank, and Other. Multiple values may be selected.

**Proximity to Moisture:** This field is used for alpine sites where a species is influenced by snowmelt, on snow free sites or snow covered sites. Proximity should be reported in feet or meters, as appropriate.

**Soil Texture:** Indicates the soil texture(s) that characterize the habitat of the Element Occurrence (EO). Values for Soil Texture are: Silt, Clay, Loam, Sand, Gravel, Cobble and Other. More than one value may be chosen. If Cobble is chosen, please indicate the size of the fragments in inches or centimeters.

**Geomorphic Landform:** Indicate the primary landform on which the Element Occurrence is found. Options are numerous and include glaciated mountain slopes and ridges, alpine glacial valley, cirque, rolling uplands, breaklands, floodplain, cutbank, hogback, cliff, gully, canyon, etc.

**Protection Comments** (Comments on any legal protection, special land designations, or strategies needed or in place.)

**Protection Comments:** Comments on any legal protection or special land designations needed to ensure continued existence of the Element Occurrence (EO), and the chances and means of fulfilling those needs, or comments on existing protection strategies or special land designations for the site. Please ensure your comments are as fact-based as possible and avoid broad subjective statements. This field should be a descriptive field.

#### **Management Comments**

Threat and Management comments apply to:

Management comments (This could include special fencing, signage and other concerns.):

Evidence of Threats and Disturbance (e.g. effects on population viability due to mining, recreation, grazing, exotic species; past/present/future recommendations; comments on any management needed to ensure continued existence of the EO, as well as the chances and means of fulfilling those needs):

Predominant Land Uses:

Threat Categories (adapted from the Colorado Rare Plant SWAP):

Collection or other Direct Mortality Uses:

Grazing:

Recreational disturbance (motorized and non-motorized recreation):

Resource Extraction (mining, oil & gas drilling):

Habitat Degradation (fragmentation, trail development, utility lines, hydrologic alteration, etc.):

Habitat Conversion (urban, industrial, agricultural development, etc):

Invasive or Exotic Species (plants, pathogens):

Pollution (chemical run-off, dust, air pollution):

#### **Management Comments**

**Threat and Management comments apply to:** Some occurrences may be quite large, with subpopulations scattered over a large area, sometimes several kilometers. Therefore, please indicate if your comments apply to the entire extent of the known occurrence, or only the portion you surveyed.

**Management Comments:** Comments on any management needed to ensure continued existence of the Element Occurrence (EO), as well as the chances and means of fulfilling those needs. Please ensure your comments are as fact-based as possible, avoid broad subjective statements. This field should be a descriptive field. This could include special fencing, signage and other concerns for the Element Occurrence and the area in which it is found.

**Evidence of Threats and Disturbance:** Indicate any observed effects on population viability due to mining, recreation, grazing, exotic species, and other land use. Provide details on any past, present, or future management activities at the site, and comment on any future management needed to ensure the continued existence of the EO.

**Predominant Land Uses:** List the current land use at the site.

**Threat Categories:** The categories below are adapted from the Colorado Rare Plant SWAP and NatureServe, and should be ranked using the values below, based on the portion of the Element Occurrence (or the area surveyed as indicated above) that is affected by the specific threat. These threat categories will help quantify the scope, severity and immediacy of threats to both individual Element Occurrences, and the species as a whole.

Domain values for Scope of Threat:

High = > 60% of occurrence or area surveyed  
Moderate = 20-60% of occurrence or area surveyed  
Low = 5-20% of occurrence or area surveyed  
Very Low = < 5% of occurrence or area surveyed  
Trace + < 1% of occurrence or area surveyed  
None = none observed in occurrence or area surveyed  
Unknown = proportion of occurrence, or area surveyed is unknown  
Null = Rank factor not assessed

**Collection or other Direct Mortality Uses:** Indicate the percentage of the occurrence which appears to have been collected or killed by trampling, or other activities. Provide comments if necessary to clarify the effect of the threat on the EO.

**Grazing:** Indicate the percentage of the occurrence which appears to have been grazed or browsed. Provide comments if necessary to clarify the effect of the threat on the EO.

**Recreational disturbance (motorized and non-motorized recreation):** Indicate the percentage of the occurrence which appears to have been disturbed by motorized and/or non-motorized recreation. This would include 4-wheel driving, OHVs, hiking, climbing, camping, fishing, etc. Provide comments if necessary to clarify the effect of the threat on the EO.

**Resource Extraction (mining, oil & gas drilling):** Indicate the percentage of the occurrence which appears to have been disturbed by resource extraction. This would include mining, and oil and gas drilling, and logging. Provide comments if necessary to clarify the effect of the threat on the EO.

**Habitat Degradation (fragmentation, trail development, utility lines, hydrologic alteration, etc.):** Indicate the percentage of the occurrence which appears to have been disturbed or altered by habitat degradation. This would include fragmentation from road and trail development, utility lines, oil and gas pipelines, altered fire regime, hydrologic alteration, etc.. Provide comments if necessary to clarify the effect of the threat on the EO.

**Habitat Conversion (urban, industrial, agricultural development, etc):** Indicate the percentage of the occurrence which appears to have been disturbed or altered by habitat conversion. This would include housing and urban development, industrial development, conversion to cropland, and water storage. Provide comments if necessary to clarify the effect of the threat on the EO.

**Invasive or Exotic Species (plants, pathogens):** Indicate the percentage of the occurrence which appears to have been impacted by invasive or exotic species. This would include the presence of invasive weedy plant species, introduced genetic material, plant pathogens or biocontrols. Provide comments if necessary to clarify the effect of the threat on the EO.

**Pollution (chemical run-off, dust, air pollution):** Indicate the percentage of the occurrence which appears to have been impacted by pollution. This would include herbicide/pesticide spraying or runoff, dust deposition, salt, chemicals and toxins, and air pollution. Provide comments if necessary to clarify the effect of the threat on the EO.

Documentation

Photographs Taken:  
Specimens Taken:

**Documentation:**

**Photographs Taken:** Indicate if you took photos, where they are repositied, and what the photo numbers are.

**Specimens Taken:** Indicate if you collected a specimen(s), where they are repositied, and what the collection numbers are.

Survey Effort

People hours:  
Number of surveyors:  
Survey time at site:  
Extent of area surveyed:  
Comments:

**Survey Effort**

**People hours:** Indicate the total number of hours surveying the site. EX. – Two people surveyed for two hours each = 4 people hours.

**Number of surveyors:** Report the number of people who were conducting this survey.

**Survey time at site:** Indicate the number of hours or days spent surveying the site. EX. – Two hours.

**Extent of area surveyed:** Indicate what area you surveyed. EX. – Surveyed all shale barrens within the BLM property in S6.

**Comments:** Indicate how was suitable habitat identified, what areas need additional survey, etc.

Survey Method

Transect:  
Ocular estimation:  
Quadrat:  
Other:

**Survey Method**

**Transect:** Check box if survey was conducted along a transect, and indicate in meters the separation distance between transects.

**Ocular estimation:** Check box if survey was conducted using ocular estimation.

**Quadrat:** Check box if survey was conducted within a quadrat, and indicate the length/size of the quadrat and the number of quadrants sampled.

**Other:** Describe method used, if not one of the above.

**General Comments:**

**General Comments:** Include any comments needed that do not fit in any other category.