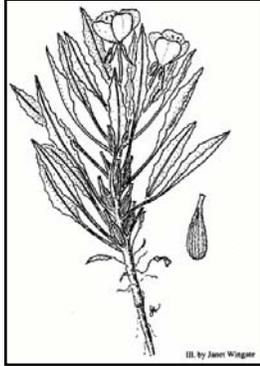


1. Arkansas Valley Evening Primrose (*Oenothera harringtonii*)

Family: Evening Primrose

Flowering/Fruiting Period: Flowers mid May-June.

Habitat: On compacted silty clays to looser rocky and sandy soils in open grasslands. Elev. 4700-6100 ft.



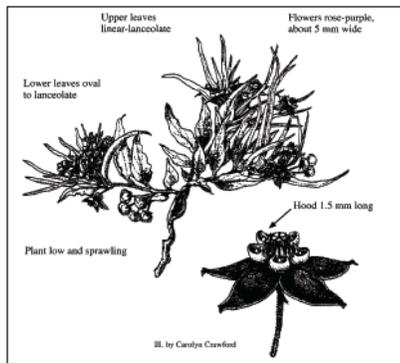
Arkansas Valley Evening Primrose is an annual or sometimes biennial species. This plant is a robust, fragrant, white-flowered member of the Evening primrose family. It stands 15- 40cm tall and supports large white flowers with petals that are 2-2.6cm long (Spackman-Panjabi 2004). Generally five to ten flowers per stem open each day. The petals are white, fading to pink, with a broad notch from 3 to 5mm deep. It has a stout taproot with one to five stems from a definite basal rosette. The stems are yellowish-fawn color usually with reddish-purple splotches (Ladyman 2005). This species is found in grassland communities, in fine textured soils within a limited distribution in El Paso, Fremont, Huerfano, Las Animas, Pueblo and Otero counties, Colorado (Spackman-Panjabi 2004).

2. Dwarf Milkweed/Wheel Milkweed (*Asclepias uncialis*)

Family: Milkweed

Flowering/Fruiting Period: Late April-May/June-early July.

Habitat: Shortgrass prairie, often on sandstone-derived soils and gravelly or rocky slopes. Elev. 4000-6500 ft.



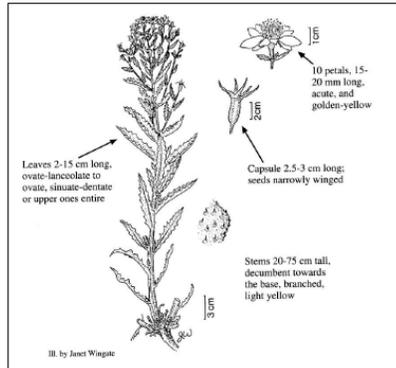
Dwarf Milkweed is a small, herbaceous perennial with several to many spreading or erect stems 1 to 2.5 inches high. The stems contain a milky sap, and they appear to elongate when the plant is in fruit. The species is distinguished by the presence of two different forms of leaves; lower leaves are oval to lance-shaped, while upper leaves are much narrower and longer. The rose-purple flowers are 0.25 inches wide and generally occur in clusters of seven to 12 at the tips of the stems. *Dwarf Milkweed* flowers from late April to mid-May, and fruits are produced in late May and early June. Seeds are about 0.25 inches long with a tuft of silky hairs about 1 inch long (Decker 2006).

3. Golden Blazing Star (*Mentzelia chrysantha*)

Family: Stickleaf

Flowering/Fruiting Period: July-early September/late August-early September. Flowers open in the evening.

Habitat: Barren slopes of limestone, shale, or clay. Elev. 5120-5700 ft.



Golden Blazing Star is a yellow-flowered member of the Stickleaf family. The plants stand about 20-75 cm tall and support bright yellow flowers with 10 petals, 15-20mm long. The leaves, stems, and fruits are covered with hairs, and these hairs are elaborately hooked or barbed, and they may serve as a physical defense against insects, as a dispersal mechanism, or to reflect light to reduce heat and water usage (Anderson 2006). The flowers open at about 6pm and remain open until about 9pm. This plant is found on barren slopes in soils derived from limestone, shale, or clay within a limited distribution in Fremont and Pueblo counties, Colorado (Spackman-Panjabi 2004).

4. Pueblo Goldenweed (*Oonopsis puebloensis*)

Family: Sunflower

Flowering/Fruiting Period: Flowers in July.

Habitat: Barren shale outcrops of the Smoky Hill Member of the Niobrara Formation in sparse shrublands or pinyon-juniper woodlands. Elev. 4800-5500 ft.



Pueblo Goldenweed is a yellow-flowered member of the Asteraceae (Sunflower family). The plants stand about 15-30cm tall and support bright yellow ray and disk flowers. This plant is found on barren shale outcrops in sparse shrublands or pinyon juniper woodlands. This species was discovered in 1982, and is known from a limited distribution in Fremont and Pueblo counties, Colorado. It has been documented on about 400 acres within an elevation range of 4800-5500 feet (Spackman-Panjabi 2004).

5.Round-leaf four-o'clock (*Mirabilis rotundifolia*)

Family: Four O'Clock

Flowering/Fruiting Period: Flowers in June. Flowers open before dawn and remain open until mid morning.

Habitat: Restricted to barren shale outcrops of the Smoky Hill Member of the Niobrara Formation in sparse shrublands or woodlands. James' Seaheath (*Frankenia jamesii*) is the most commonly associated species. Elev. 4800-5600 ft.



Round-leaf four- o'clock is known only from Las Animas, Fremont, and Pueblo counties in southeastern Colorado, and is a showy member of the Nyctaginaceae (Four-O'Clock family). Plants stand about 20 –30 cm tall and support bright magenta flowers with petals that are about 1cm long, and have five exserted stamens. The flowers open before dawn, and generally close by mid-morning. This species is found on barren chalk outcrops of the Smoky Hill Member of the Niobrara Formation in sparse shrublands or woodlands (Spackman-Panjabi 2004).

6. Plains Escarpment Prairies

This system includes cliffs, outcrops, breaks and barrens throughout the Western Great Plains. In the southwestern portion of the eco-region, occurrences of this system are most often found on Cretaceous bedrock of the Middle and Upper Chalk members of the Smoky Hills Member of the Niobrara Formation.

Cliff and outcrops support a variety of plant communities, depending on the steepness, exposure, and soil conditions of the site. The tops of the escarpment are often dominated by the adjacent shortgrass or mixed grass prairie communities. Vegetation of the cliffs and outcrops is typically sparse, and often restricted to shelves, cracks and crevices in the rock, or other areas where soil accumulation allows growth. The lack of vegetation on many sites protects them from fire, and in a few instances the rocky cliffs support disjunct populations of foothill species including Ponderosa Pine and Rocky Mountain Juniper (Kelso 1999).



extent exaggerated for display

References Cited

Anderson, D.G. (2006, July 3). *Mentzelia chrysantha* Engelmann ex Brandegee (golden blazing star): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: <http://www.fs.fed.us/r2/projects/scp/assessments/mentzeliachrysantha.pdf> [date of access].

Colorado Rare Plant Master List. Online. www.cnhp.colostate.edu/rareplants/masterlist.html

Decker, K. (2006, April 24). *Asclepias uncialis* Greene (wheel milkweed): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: <http://www.fs.fed.us/r2/projects/scp/assessments/asclepiasuncialis.pdf> [date of access].

Kelso, S. 1999. A Comparative Study of the Shale Barrens Flora on the Niobrara Formation in Southeastern Colorado. Report to the Colorado Natural Areas Program.

Ladyman, J.A.R. (2005, February 1). *Oenothera harringtonii* Wagner, Stockhouse & Klein (Colorado Springs evening-primrose): a technical conservation assessment. [Online]. USDA Forest Service, Rocky Mountain Region. Available: <http://www.fs.fed.us/r2/projects/scp/assessments/oenotheraharringtonii.pdf> [date of access].

Spackman-Panjabi, S.C. (2004, May). *Visiting insect diversity and visitation rates for seven globally-imperiled plant species in Colorado's middle Arkansas Valley.* Colorado Natural Heritage Program. College of Natural Resources. Colorado State University. Prepared for Native Plant Conservation Alliance and National Fish and Wildlife Foundation.

***LAKE PUEBLO STATE PARK:
RARE PLANT SPECIES HANDOUT***



Golden Blazing Star
Photo by Susan Spackman-Panjabi

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August 11, 2006**