



LESSON SEVEN:

At-Risk, Threatened and
Endangered Plants of
Nebraska



What are endangered and threatened species?

Endangered Species are plants or animals that have been identified as being at risk of extinction throughout all or a large part of their range.

Threatened Species are plants or animals that are likely to become endangered in the near future.

Critical Habitats are areas essential to the survival of endangered and threatened species.

What is the Endangered Species Act?

The Endangered Species Act (ESA) was enacted by Congress in 1973. Under this act the federal government was given the responsibility to protect and manage these species and their critical habitat.

Under the Endangered Species Act lists of protected plant and animal species have been developed. When a plant or animal is given ESA protection, it is said to be listed. Additional species, called candidate species, are evaluated for possible protection.

The U.S. Fish and Wildlife Service oversees listing and protection of land animals and plants and freshwater fish. The National Marine Fisheries Service oversees marine fish and wildlife.



What Criteria Is Used to List a Species Under the ESA?

The following criteria is evaluated when a species is being considered for listing:

- ❖ Has a large percentage of the species' vital habitat been degraded or destroyed?
- ❖ Has the species been over consumed by commercial, recreational, scientific or educational uses?
- ❖ Is the species threatened by disease or predation?
- ❖ Do current regulations or legislation inadequately protect the species?
- ❖ Are there other man-made factors threatening the long-term survival of the species?

How Many Species Are Federally Listed as Endangered or Threatened?

According to Worldatlas.com, there are approximately 1,540 federally listed species. The US Fish and Wildlife Service estimates that of the listed species whose condition is known, 68% are stable or improving and 32% are declining.

Type of Endangered Species	Number
Mollusks and Invertebrates	580
Plants, Fungi, and Protists	498
Fishes	251
Birds	82
Amphibians	56
Reptiles	37
Mammals	36

What Federally Listed Endangered Species Are (or Were) Found in Nebraska?

- ❖ Eskimo Curlew
- ❖ Whooping Crane
- ❖ Interior Least Tern
- ❖ Black Footed Ferret
- ❖ Gray Wolf
- ❖ Blowout Penstemon
- ❖ Pallid Sturgeon
- ❖ Topeka Shiner
- ❖ Scaleshell Mussel
- ❖ American Burying Beetle
- ❖ Salt Creek Tiger Beetle



Photo: Blowout Penstemon, Photo Source: Kristin Dickinson

What Are Nebraska's State Listed Endangered Species?

In addition to the 11 federally listed endangered species, there are 5 state listed endangered species:

- ❖ Swift Fox
- ❖ Sturgeon Chub
- ❖ Blacknose Shiner
- ❖ Colorado Butterfly Plant *
- ❖ Saltwort

*Federally listed as Threatened

Photo: Saltwort



What Federally Listed Threatened Species Are Found in Nebraska?

- ❖ Piping Plover
- ❖ Rufa Red Knot
- ❖ Colorado Butterfly Plant
- ❖ Northern Long-eared Bat
- ❖ Western Prairie Fringed Orchid
- ❖ Ute Ladies'-tresses

Photo: Ute Ladies'-tresses. Photo Source: North American Orchid Center



What Are Nebraska's State Listed Threatened Species?

In addition to the 6 federally listed threatened species found in Nebraska, there are 9 state listed threatened species:

- ❖ Mountain Plover
- ❖ River Otter
- ❖ Southern Flying Squirrel
- ❖ Lake Sturgeon
- ❖ Northern Red Belly Dace
- ❖ Finescale Dace
- ❖ Western Massasauga
- ❖ American Ginseng
- ❖ Small White Lady's Slipper

Photo: Small White Lady's Slipper. Photo Source: USDA National Plants Database



What Is an At-Risk Species?

In addition to threatened and endangered species, each state designates at-risk species.

Tier I At-risk Species are species that are globally or nationally at risk of extinction or extirpation (totally removed) and include threatened and endangered species.

- ❖ Nebraska has 89 Tier I At-risk species

Tier II At-risk Species are species that are at-risk in Nebraska, but doing well in other parts of their range.

- ❖ Nebraska has 680 Tier II At-risk species

Photo: Matted Prickly-phlox is one of Nebraska's Tier I species



NEBRASKA'S
THREATENED AND
ENDANGERED (T&E)
RANGELAND PLANTS



Threatened and Endangered Plants Found in Nebraska – Federally and State Listed:

- ❖ Blowout Penstemon – Sandhills Rangelands
- ❖ Colorado Butterfly Plant – Kimball County Wetlands
- ❖ Saltwort – Saline Wetlands – Lancaster and Saunders Counties
- ❖ Western Prairie Fringed Orchid – Subirrigated Meadows
- ❖ Ute Ladies'-tresses – Western Nebraska (Sioux County) meadows and stream bottomlands
- ❖ American Ginseng – Forestland along Missouri River
- ❖ Small White Lady's Slipper – Bottomlands and Meadows

Blowout Penstemon

Is a native, perennial plant known from the Nebraska Sandhills and the Ferris Dunes of Carbon County Wyoming.

Often grows in multi-stemmed clumps with stems 10-20" tall. The leaves have a slight bluish, waxy bloom.

Has sweetly fragrant, blue to lavender to pink flowers.

Is rare and found in open sand areas (blowouts) of the western Sandhills. It was thought to be extinct in 1940, but populations were found in 1968.

Its habitat has been reduced due to removal of natural disturbances including fires and large bison herds. This removal along with implementation of range management practices which have increased the vegetative cover and stabilized the dunes.

Is one of the first plants to colonize newly formed blowouts. It is short lived and is replaced by other plants as the open sand re-vegetates.

<https://www.fws.gov/mountain-prairie/es/blowoutPenstemon.php>

<http://rarespecies.nebraska.gov/portfolio/blowout-penstemon/>

Photo: Blowout Penstemon in an active blowout Photo Source: Kristin Dickinson



Colorado Butterfly Plant

Is as biennial or short-lived perennial, native plant with lifespan of 2 years (occasionally longer).

Makes a rosette during its first year. In year two, the plant produces a tall stem (1-2') and flowers. Leaves are narrow and reach about 2" in length but get smaller as they move up the stem.

Has flowers made up of four sepals and four larger pink to whitish-pink petals. Eight long stamens extend well beyond the petals.

Flowers open late in the afternoon and close in the morning.

Is found in southeastern Wyoming, northcentral Colorado, and extreme western Nebraska in wetlands habitats of Kimball County.

Prefers open habitat and will die out if vegetation is heavy.

Developed under a disturbance regime that included periodic flooding along with grazing and wildfire which caused the open habitats in which this plant grows.

<https://www.fws.gov/mountain-prairie/es/coloradoButterflyPlant.php>

Photo: Colorado Butterfly Plant. Photo Source: Nebraska Game and Parks Commission



Saltwort

Is a native, annual forb with a low growing fleshy, succulent stem.

Has very strict habitat requirements and is found only on heavy, clayey soils with salinity levels of 2.5-4.7% and a water table within 3' of the soil surface.

Is one of the few plants that can grow in salt flats.

In Nebraska is only found in Lancaster and Saunders Counties within in the Salt Creek and Rock Creek watersheds.

Has very small, scaly leaves that are appressed (lie flat against) to the stem.

Forms dense colonies when conditions are favorable, but grow individually under drought or other unfavorable conditions.

<http://rarespecies.nebraska.gov/portfolio/saltwort/>

Photo: Saltwort colonies



Western Prairie Fringed Orchid

Is as perennial, native plant found in wet to moist soils of eastern Nebraska and in the northern Sandhills.

Is found in upland prairies of eastern Nebraska (Tallgrass Prairie area), in wet prairies and meadows of central and northeast Nebraska, and in Sandhills subirrigated meadows.

Has a raceme inflorescence made up of up to 40 white to cream to greenish colored flowers on each stalk.

Is pollinated by night-flying hawkmoths.

Is rare due to habitat conversion to cropland, competition with non-native plants (cool season grasses and leafy spurge), intensive haying, and draining of wetlands.

<http://rarespecies.nebraska.gov/portfolio/western-prairie-fringed-orchid/>

Upper Photo: Western Prairie Fringed Orchid Lower Photo: One of the night-flying hawkmoth species. Photo source: Flickr



Ute Ladies'-tresses

Is a perennial, native orchid which grows along riparian edges, gravel bars, old oxbows, high flow channels, and moist to wet meadows along perennial streams. It is found in Colorado, Idaho, Montana, Nebraska, Nevada, Utah, Washington, Wyoming

Is found in a portion of the Niobrara River Valley in Sioux County, Nebraska in low, subirrigated and wet meadows with somewhat alkaline soils.

Has a spike inflorescence which consists of small white or ivory flowers clustered at the top of the stem.

<https://www.fws.gov/mountain-prairie/es/uteLadiestress.php>

<http://rarespecies.nebraska.gov/portfolio/ute-ladies-tresses/>

Photo: Ute Ladies'-tresses. Photo Source: Colorado National Heritage Program



Small White Lady's Slipper

Is a perennial, native orchid found in river valleys and moist soils of north central and north eastern United States. It occurs in moist prairies and sedge meadows.

In Nebraska occurs in low, sub-irrigated wet meadows along the Niobrara, Missouri, Elkhorn, and central and eastern Platte River systems.

Has a flower that resembles an open pouch. The flower is white with a few rose-pink markings.

<http://rarespecies.nebraska.gov/portfolio/small-white-ladys-slipper/>

Photo: Small White Lady's Slipper. Photo Source: Nebraska Rare Species Conservation for Education



American Ginseng

Is a perennial, native plant found in deciduous forests.

Occurs in in the oak-hickory forests which are dense enough to provide full shade. In Nebraska, it occurs in moist ravines along the Missouri River.

Has whorled, palmate leaves and a small, greenish-white flower.

Is valued for medicinal uses and can legally be harvested in some states. Since it is a State Listed Threatened Species, native populations of American ginseng can not be legally harvested in Nebraska.

Commercially grown tame plants can legally be harvested in Nebraska. Overharvesting is common in the US.

<https://www.fws.gov/international/plants/american-ginseng.html>

<http://outdoornebraska.gov/americanginseng/>



Photo: American Ginseng. Photo Source: US Fish and Wildlife Service, International Affairs

Activities and References

Activities

- Learn to identify Nebraska's T&E plants
- Learn where these plants occur and on which ecological sites they may be found
- Identify actions that could be taken to increase the abundance of these plants.

References

- <https://www.nwf.org/Educational-Resources/Wildlife-Guide/Understanding-Conservation/Endangered-Species>
- <https://www.worldatlas.com/articles/how-many-endangered-species-are-there-in-the-us.html>
- <http://outdoornebraska.gov/atriskspecies/>
- <http://rarespecies.nebraska.gov/species/>
- All references listed within this PowerPoint



Blowout
Penstemon



Colorado
Butterfly
Plant



Ute Ladies'
Tresses

END OF LESSON SEVEN