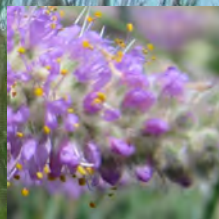
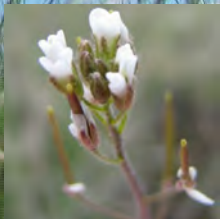


A Pocket Guide to

RARE PLANTS OF SOUTHERN SASKATCHEWAN



A Pocket Guide to
Rare Plants of Southern Saskatchewan

Originally Created by Sarah Vinge-Mazer

Rare Plant Rescue Program

Nature Saskatchewan

Nature
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Visit us at www.naturesask.ca

Call in your rare plant sightings, toll-free! (SK only)

1-800-667-4668

Thank you to Anna Leighton, Sheila Lamont, Mary Vetter, Tara Sample, Candace Neufeld, Chet Neufeld, Margaret Skeel, Andrea Kotylak, Jennifer Banning, Carolyn Gaudet, and Rebecca Magnus for their contributions during the review process.

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Revisions to this pocket guide were done by Kristen Martin (2014) and Emily Putz (2017).

Distribution maps were provided by the Saskatchewan
Conservation Data Centre.

This Guide is Dedicated to Land Stewards Everywhere!

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THE Rare Plant Rescue (RPR) program is a unique voluntary stewardship program for Saskatchewan landowners with rare plants or rare plant habitat on their land. Launched in 2002, RPR aims to conserve rare plant habitat by building strong, respectful relationships with landowners and providing them with the information they need to make informed stewardship decisions. As of 2017, approximately 103,000 acres (41, 682 hectares) of valuable rare plant habitat are being conserved voluntarily by Saskatchewan land manager participants while they continue to use the land for their operations.



The purpose of this guide is to increase awareness about southern Saskatchewan's rarest plant species. It does not provide comprehensive information about any one species, but rather lists those characteristics that are needed to distinguish the rare species from their more common look-alikes. Some of the information included in the species and habitat descriptions may be specific to Saskatchewan. The information presented here is to be used for guidance only. For more information on species at risk or the Rare Plant Rescue program, please contact Nature Saskatchewan.

EACH of southern Saskatchewan's rare plant species is subject to a number of threats. Many of these species are found in similar habitats (e.g., sandy soils and dunes) and therefore have threats in common.

The most common reason for the disappearance or decline of rare plants are fragmentation, degradation and loss of habitat where the plants are found. This can be caused by one or more factors, sometimes working together, and can include but is not limited to the following:

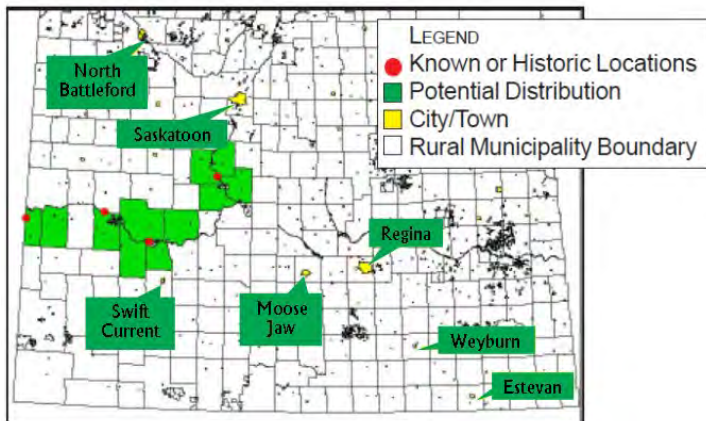
- stabilization of dune habitats
- invasion of woody species (tree and shrub encroachment)
- invasion by invasive non-native species (e.g. leafy spurge, downy brome)
- cultivation
- sand and gravel extraction
- oil and gas activities
- coal strip mining
- urban expansion
- Changes to the natural disturbance processes (e.g. grazing and fire)
- Changes to hydrological processes

AWARENESS of rare plant species is very important to their conservation effort, so spread the word! Programs like Rare Plant Rescue rely on landowner support and cooperation, so the more people who know about rare plants and Rare Plant Rescue, the more we can work together to conserve this heritage!

REPORT a rare plant by calling Rare Plant Rescue at **1-800-667-4668** (SK only). If you are unsure whether you have found a rare plant, we can come out to verify it. Your reports help to increase knowledge about the distribution and population numbers of rare plants, without which conservation is difficult.

JOIN Rare Plant Rescue to get involved and stay informed! If you are a landowner or land manager with native prairie in any of the “green zones” (refer to distribution maps), call us to discuss joining Rare Plant Rescue. Those outside the green zones who have native prairie are welcome to join as well! We can provide information and support on strengthening your land stewardship and mitigating threats such as invasive species.

DISTRIBUTION maps are provided for each species in this guide. These maps show the known locations (including historic locations) of the species as well as their potential distribution. The green zones denote rural municipalities in the vicinity of known locations where other occurrences may exist. Landowners in these areas may already be conserving rare plants and not even know it!





Small-flowered Sand-verbena

Tripterocalyx micranthus

Four-o'clock Family (Nyctaginaceae)

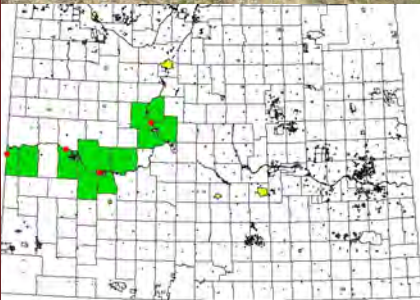
IDENTIFICATION

- low growing annual, with trailing, succulent stems
- opposite leaves are 2 thick, fleshy, strongly veined and have wavy, non-toothed margins
- small, greenish-white flowers are arranged in an umbel
- 2 cm long fruits have papery wings that are pink/peach in colour



HABITAT

- slopes and sandy dunes in areas of active or partially stabilized sand



INFO & DISTRIBUTION

- grows quickly and starts blooming early in June
- known sites are along the South Saskatchewan River with the potential for many other sites to exist

Look-alike species:

- Sand Dock (*Rumex venosus*)

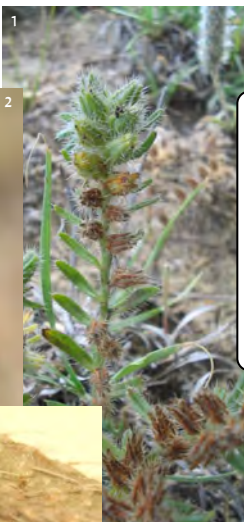
Tiny Cryptantha

Cryptantha minima

Borage Family (Boraginaceae)

IDENTIFICATION

- an annual up to 20 cm tall, and bristly-hairy throughout spatula-shaped leaves that have pistulate hairs (seen as small dots)
- few basal leaves
- leaf-like bracts below all flowers
- sepals have a whitish nerve tubular, miniature white flowers with yellow centres
- fruit is composed of 4 nutlets (3 small and rough, 1 larger and smooth)



HABITAT

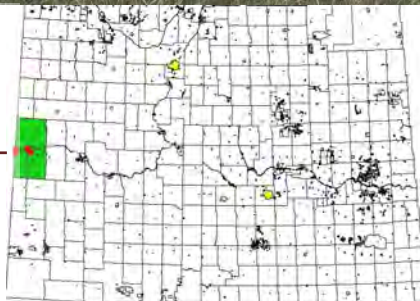
- dry sandy slopes of river valleys or associated rolling uplands

INFO & DISTRIBUTION

- blooms May-June
- known sites occur at the west extent of the South Saskatchewan River
- downlisted in 2017 from endangered

Look-alike species:

- Fendler's Cryptanthe (*Cryptantha fendleri*)
- Kelsey's Cryptanthe (*C. kelseyana*)
- Clustered Oreocarya (*O. celosioides*)



Threatened

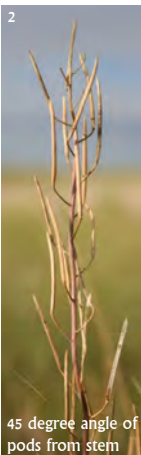
Slender Mouse-ear-cress

Transberingia bursifolia ssp. *virgata*

Mustard Family (Brassicaceae)

IDENTIFICATION

- erect biennial 15-40 cm tall, with single or branched stems
- dentate basal leaves are in a rosette
- stem leaves have lobes at their bases that clasp the stem
- plant is covered in branched, greyish hairs
- white flowers have 4 petals
- seeds grow in 1.5-4 cm long pods that are round in cross-section
- pod stalks often form a 45° angle with the stem
- Pods upright and pointed at tip (not beaked)



45 degree angle of pods from stem



3 Leaf lobes clasp stem

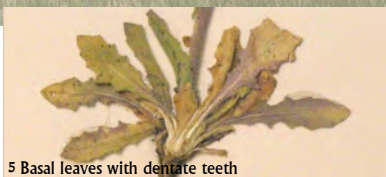
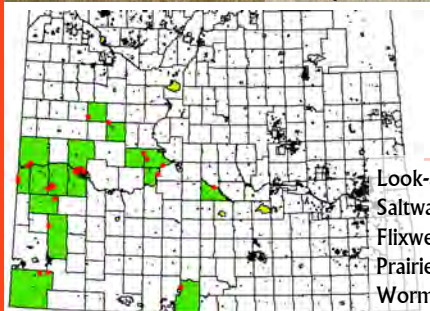
HABITAT

- flat to rolling terrain in short to mid-grass prairie
- sandy to loamy soils, often in low depressions or at slope bases



INFO & DISTRIBUTION

- blooms in May-June
- difficult to find because it blends in with grasses
- Restricted to southwestern Saskatchewan in the province



5 Basal leaves with dentate teeth

- Look-alike species:
- -Rock Cress (*Arabis* spp.)
 - Saltwater Cress (*Thellungiella salusuginea*)
 - Flixweed (*Descurainia sophia*)
 - Small-Flowered Prairie-Rocket (*Erysimum inconspicuum*)
 - Wormseed Mustard (*E. cheiranthoides*)

Smooth Goosefoot

Chenopodium subglabrum

Goosefoot Family (Chenopodiaceae)

IDENTIFICATION

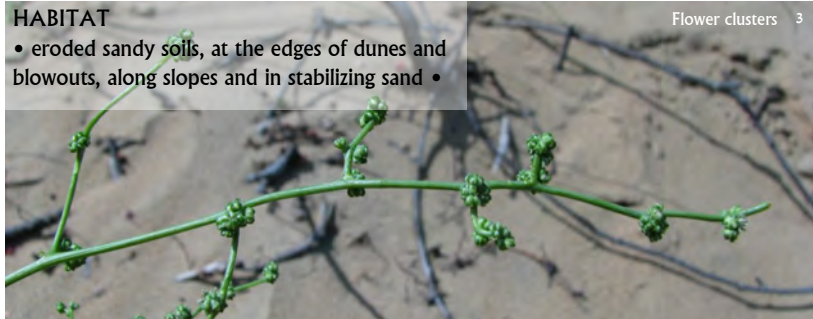
- annual, 10-50 (up to 80) cm tall, yellowish-green in colour
- leaves are fleshy, linear, 1-veined and smooth (not mealy)
- flowers grow in dense clusters that are spaced relatively far apart on the panicle
- inflorescence only slightly mealy
- pericarp (surrounding the seed) can be rubbed off



Threatened

HABITAT

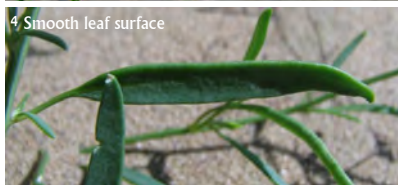
- eroded sandy soils, at the edges of dunes and blowouts, along slopes and in stabilizing sand



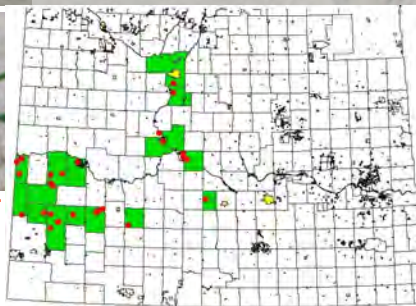
Flower clusters

INFO & DISTRIBUTION

- found in 11 SK sand hill complexes



Smooth leaf surface



Look-alike species:

- Narrow-leaved Goosefoot (*Chenopodium leptophyllum*)



Inflated leaf base

Western Spiderwort

Tradescantia occidentalis var. *occidentalis*

Spiderwort Family (Commelinaceae)

IDENTIFICATION

- erect perennial with parallel veins (monocot), 5-60 cm tall, with slender stems
- grass-like leaves have inflated base and are partially folded
- flowers have 3 deep-purple petals with wavy margins; the 3 inflated leaf base sepals are green



3 Young plants appear grass-like

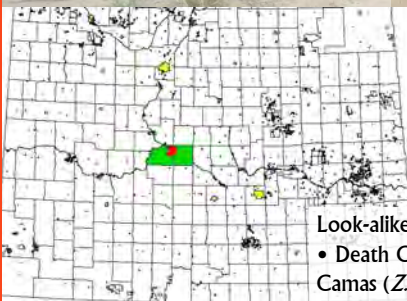


HABITAT

- partially stabilized sand dunes
- steep south-facing slopes and blowouts

INFO & DISTRIBUTION

- blooms in July; flowers open in early morning and close by midday
- known sites occur in the Elbow Sand Hills



5

Look-alike species, appearing vegetatively similar:

- Death Camas (*Zigadenus venenosus*)
- Smooth Camas (*Z. elegans*)
- Goat's Beard (*Tragopogon* spp.)

Dwarf Woolly-heads

Psilocarphus brevissimus var. *brevissimus*

Aster Family (Asteraceae)

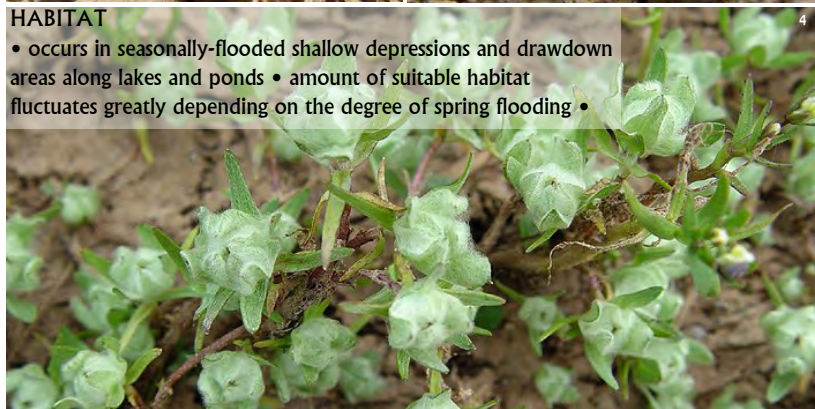
IDENTIFICATION

- very small, woolly, low annual herb arising from a short taproot
- has narrow, short, opposite stem leaves in a tight rosette
- upper leaves usually surpass the flower heads
- flowers are in dense, fuzzy-looking clusters



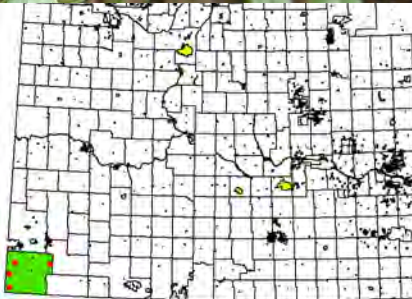
HABITAT

- occurs in seasonally-flooded shallow depressions and drawdown areas along lakes and ponds
- amount of suitable habitat fluctuates greatly depending on the degree of spring flooding



INFO & DISTRIBUTION

- blooms in June-July
- found in the extreme southwestern corner of the province
- its habitat is at risk of being plowed up in dry years



Look-alike species:

- Cudweeds (*Gnaphalium* spp.)

Buffalograss

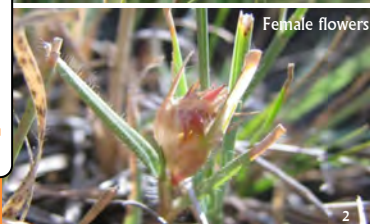
Bouteloua dactyloides

Grass Family (Poaceae)

IDENTIFICATION

- stoloniferous grass up to 12 cm tall, usually forming mats
- curly leaves have fine hairs
- male and female spikes on separate plants
- male flowers have orange stamens
- female flowers are hidden amongst the leaves close to the ground
- seeds develop inside a 6 mm long, hard, toothed bur

1 Male flowers



Female flowers

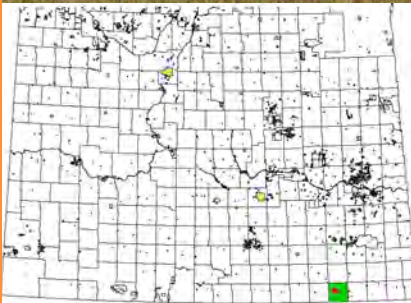


HABITAT

- dry, shallow coulee bottoms and lower slopes on clay soils



4



INFO & DISTRIBUTION

- appears as golden patches in August
- provides good forage and thrives with grazing
- found in the Estevan area
- downlisted in 2017 from threatened

Look-alike species:

- Blue Grama Grass (*Bouteloua gracilis*)

Hairy Prairie-clover

Dalea villosa var. *villosa*

Legume Family (Fabaceae)

IDENTIFICATION

- perennial, 30-60 cm tall, stems are somewhat woody, growing along the ground or rising at an angle
- leaves are pinnately divided into 9-17 leaflets that are glandular dotted
- leaves and stems are densely hairy and surfaces are soft to the touch
- tiny, purple-rose coloured, pea-type flowers occur in dense terminal spikes up to 10 cm long; younger, upper flowers not yet open when lower, older

flowers are mature •

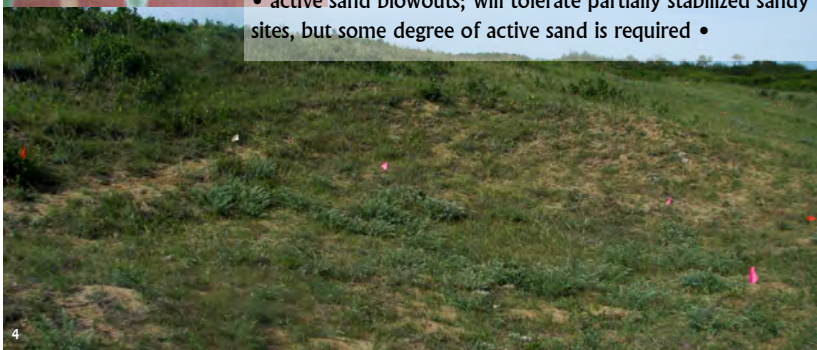


3 Glandular dots on leaves



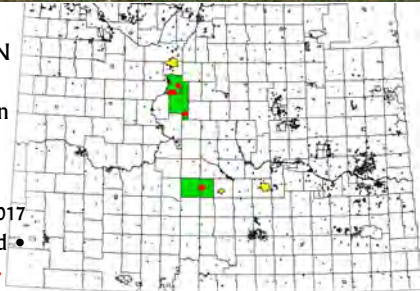
HABITAT

- active sand blowouts; will tolerate partially stabilized sandy sites, but some degree of active sand is required •



INFO & DISTRIBUTION

- blooms July-August • known sites are near Mortlach and Dundurn • downlisted in 2017 from threatened •



Look-alike species: • Purple Prairie-clover (*Dalea purpurea*) •

Prickly Milk-vetch

Astragalus kentrophyta var. *kentrophyta*

Legume Family (Fabaceae)

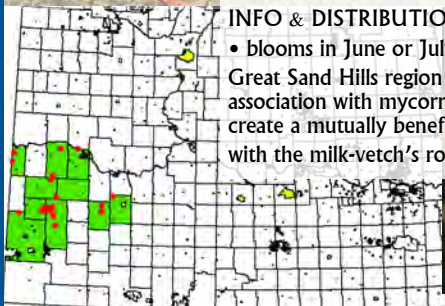
IDENTIFICATION

- perennial with branched stems 10-40 cm long, growing along the ground and often forming mats up to 15 cm tall
- leaves divided into 3-7 narrow leaflets that are spine-tipped
- stipules also spine-tipped
- typical pea flowers are white with purple tinge
- produces grey, hairy, elliptical pods



HABITAT

- sites having disturbed, compacted, sandy/gravelly soil among sand dunes



INFO & DISTRIBUTION

- blooms in June or July
- found in the Great Sand Hills region
- often grows in association with mycorrhizal fungi which create a mutually beneficial relationship with the milk-vetch's roots

Spine-tipped leaves



Plains Grape-fern

Botrychium campestre

Adder's-tongue Family (Ophioglossaceae)



Provincially Rare

IDENTIFICATION

- erect fleshy perennial, growing 2-12 cm tall
- each plant consists of only 2 "leaves" (actually 2 portions of 1 leaf) on a short stalk
- one "leaf" is a sterile blade, and the other a fertile blade bearing grape-like clusters of sporangia (first green then turning brown)
- fertile blade is 1.5 times as long as sterile blade
- sterile blade is once divided into narrowly spatula shaped segments having shallow rounded teeth at the blunted edges

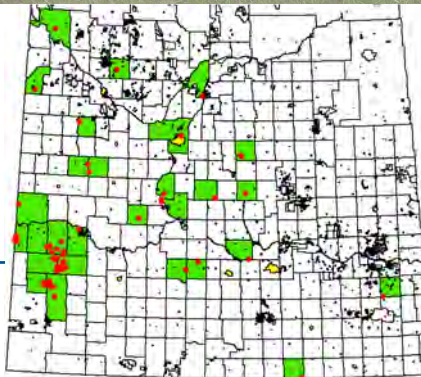
HABITAT

- found in well-drained soils: dry, gravelly or sandy prairie, sand dune complexes and the gravelly slough margins



INFO & DISTRIBUTION

- plant appears in April- May and disappears by the end of June



Look-alike species:

- Other Grape-fern or Moonwort species (*Botrychium spp.*)

Upland Evening Primrose

Neoholmgrenia andina

Evening Primrose Family (Onagraceae)



IDENTIFICATION

- small annual, with slender stems 2-8 cm all
- 1-3 cm long, narrow, alternate leaves are found towards the tops of the stems
- tiny flowers crowded in upper leaf 2 axils have 4 petals which are yellow when they open but turn greenish-reddish with age
- entire plant covered with short, fine hairs



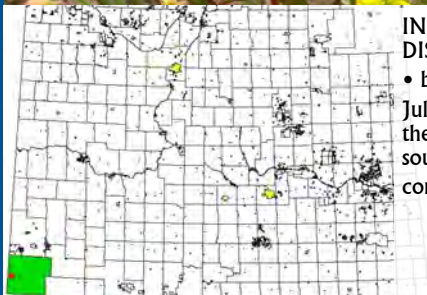
HABITAT

- dry prairie slopes, exposed sandy soils, south-facing hillsides



INFO & DISTRIBUTION

- blooms in May-July
- found in the extreme south-western corner of SK



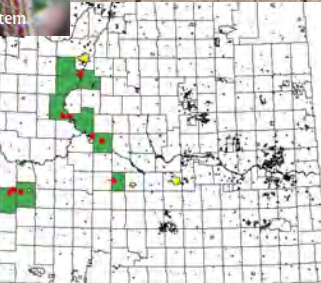
Bur Ragweed

Ambrosia acanthicarpa

Aster Family (Asteraceae)

IDENTIFICATION

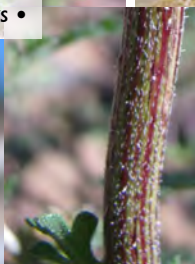
- a branched annual, reaching 15-60 cm in height
- plants often grow in dense clumps
- stems, leaves, and flower heads covered with stiff, rough hairs
- male and female flowers in separate heads on the same plant; male at the top of the plant, female just above leaves
- alternate leaves are deeply lobed
- burs have multiple rows of sharp spines



2 Female burs with sharp spines



5 Male flowers



4 Stiff hairs on stem

HABITAT

- dry, open sandy sites and river draws

INFO & DISTRIBUTION

- blooms in July-September
- known sites occur across south-western and south-central SK
- uncommon but may be abundant locally

Look-alike species:

- Common Ragweed (*Ambrosia artemisiifolia*)
- Western Ragweed (*A. psilostachya*)

Provincially Rare

Beaked Annual Skeletonweed

Shinnersoseris rostrata

Aster Family (Asteraceae)

IDENTIFICATION

- an annual, often branching, 10-75 cm tall
- long, linear leaves grow opposite each other on the lower part of the stem
- leaves and stem have a white/cream (not yellow) coloured milky sap
- flower heads have 7-11 pink florets, each with one large petal (not 5)
- white pappus is attached to seeds (not brown)

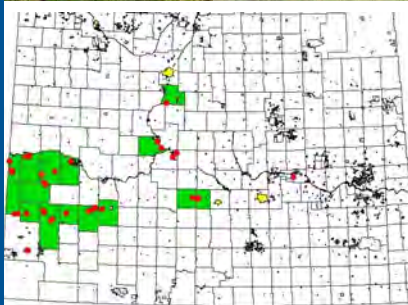
HABITAT

- disturbed areas of open sand, including dunes, blowouts and stream banks



INFO & DISTRIBUTION

- blooms in July-August
- scattered across southwestern SK



Look-alike species:

- Common Skeletonweed (*Lygodesmia juncea*)

Small Lupine

Lupinus pusillus spp. *pusillus*

Legume Family (Fabaceae)

IDENTIFICATION

- an annual legume, growing up to 25 cm tall
- leaves are palmately compound, consisting of 3-9 leaflets radiating from a central point
- leaflets are hairy below, also with hairs on margins
- typical pea flowers can be white to deep blue-purple
- produces pods up to 2 cm long, with 2 seeds



Palmately compound leaves

HABITAT

- disturbed sandy areas of the prairie, including stream banks, dunes and badlands

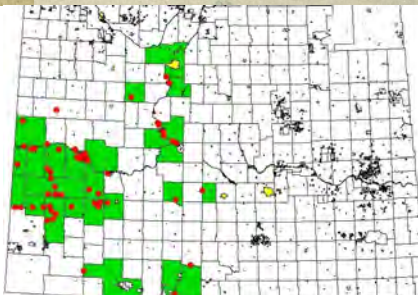


INFO & DISTRIBUTION

- blooms in June-July
- found throughout south-western SK



Seed pods and flowers



Look-alike species: • Perennial Lupine (*Lupinus argenteus*) • Silver-leaf Psoralea (*Pediomelum agrophyllum*) • Indian Breadroot (*P. esculentum*)

Annual - completes its life cycle in one growing season

Axil (leaf axil) - the angle between the stem and the leaf

Biennial - completes its life cycle in two growing seasons

Cyme - flat or round-topped flower cluster in which the central flowers bloom first

Decumbent - describing plant stems that lay on the ground but with tip pointed upwards

Endangered (status) - a species that is facing imminent extirpation (no longer found in Canada) or extinction

Inflorescence - referring to a group of flowers

Panicle - a branched flower cluster, with lowest branches being longest and flowering first

Pappus - hairs or bristles attached to a seed

Perennial - a plant that lives for more than two growing seasons

Pericarp - the wall of a fruit

Provincially Rare (status) - a species identified by the Saskatchewan Conservation Data Centre as being provincially at risk

Racemose - resembling a raceme, an elongated flower cluster with each flower having a stalk

Special Concern (status) - a species that may become a threatened or endangered because of a combination of biological characteristics and identified threats

Spike - an elongated flower cluster with each flower being stalkless or nearly so

Sporangia - a spore-sac or spore cluster

Spore - the tiny reproductive body of a non-seed plant (e.g., a fern or fern-like plant)

Stolon - an above-ground horizontal stem, also called a runner

Threatened (status) - a species that is likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

Umbel - a flat-topped flower cluster where all flower stalks arise from a common point

Uncommon (status) - has a very local or restricted range

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Tiny Cryptantha (pg5): 1,3 - CN; 2 - DH; 4 - CH; 5 - JN

Slender Mouse-ear-cress (pg6): 1 - JN; 2,4 - CN; 3 - TS; 5 - CH

Smooth Goosefoot (pg7): 1 - CN; 2 - TS; 3,4 - SV

Western Spiderwort (pg8): 1 - TS; 2,3 - SV; 4 - MR; 5 - CN

Dwarf Woollyheads (pg9): 1,2,3,4 - CW

Buffalograss (pg10): 1,2 - SV; 3,4 - TS

Hairy Prairie-clover (pg11): 1,3,5 - RM; 2 - CN; 4 - SV

Prickly Milk-vetch (pg12): 1 - JG; 2,3,4 - TS; 5 - LA

Plains Grape-fern (pg13): 1 - SV; 2 - RM; 3 - TS

Upland Evening Primrose (pg14): 1,2,3,4, - BL

Bur Ragweed (pg15): 1 - CN; 2,4,5 - SV; 3 - TS

Beaked Annual Skeletonweed (pg16): 1,4 - SV; 2,3 - TS

Small Lupine (pg17): 1 - SV; 2,4 - TS; 3 - RM;

Rare Plant Rescue
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For more information on Saskatchewan's rare plants and their conservation, or if you have a rare plant sighting to report, please call our toll-free number:

1-800-667-4668



Rare Plant Rescue, a Stewards of Saskatchewan program, is delivered by:

Nature SASKATCHEWAN

Promoting and protecting nature, its diversity, and the processes that sustain it since 1949. We believe that nature is not a place to visit, but home, and strive to leave a legacy of our natural heritage for future generations. Our vision is "Humanity in Harmony with Nature."

Nature Saskatchewan

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