

Seedling Guide

Zion National Park Soil Seed Bank Study

JFSP Project (07-2-4-0)

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Scientific Name: *Amaranthus albus* (prostrate pigweed) - nonnative, annual forb

Family: *Amaranthaceae*

Notes: Red stem and distinctly incised mid-vein on seed leaves are characteristic of this species.



Scientific Name: *Astragalus nuttallianus* (small flowered milkvetch) - native, annual forb

Family: *Fabaceae*

Notes: Cotyledons are similar to those of *Lotus humistratus* and *L. denticulatus*, but are less thick, longer and are not mottled (*L. humistratus*) or shiny (*L. denticulatus*).



Scientific Name: *Bassia prostrata* (forage kochia) – nonnative, perennial forb

Family: *Chenopodiaceae*

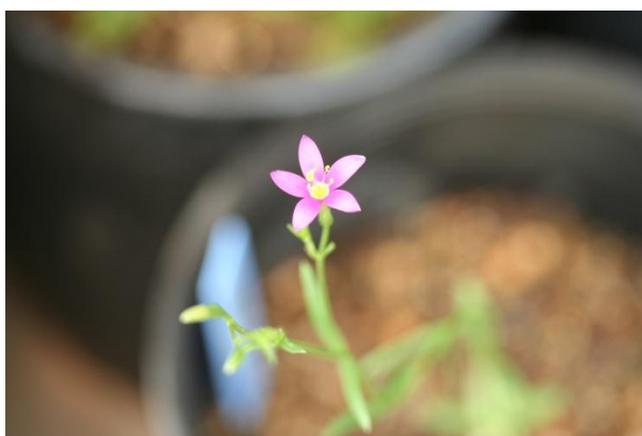
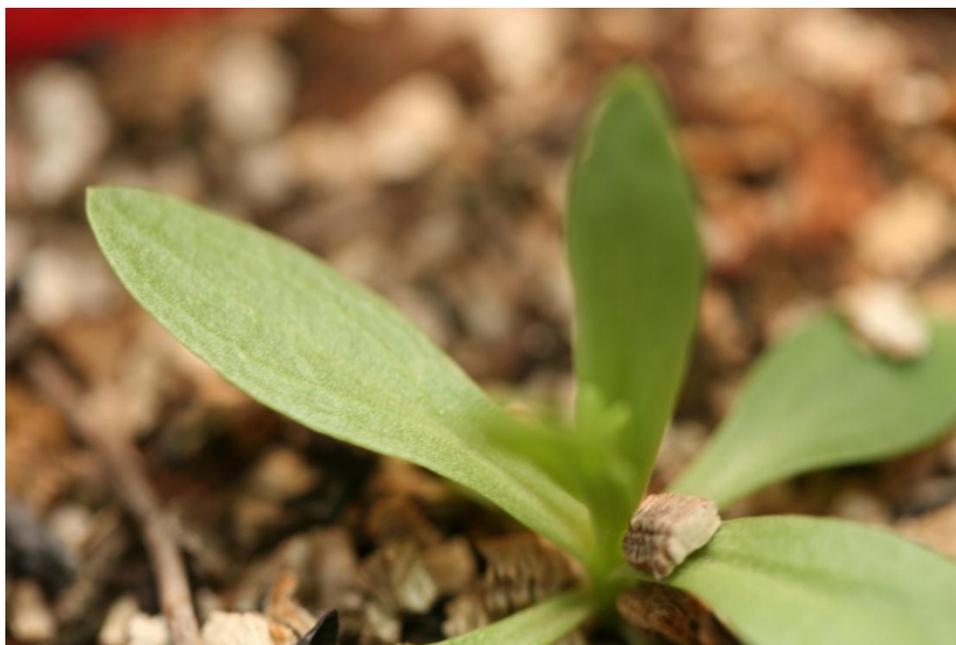
Notes: Somewhat resembles a tamarisk seedling.



Scientific Name: *Bromus tectorum* (cheatgrass) - nonnative, annual grass

Family: *Poaceae*

Notes: Leaf blades begin to twist soon after emergence. The collar and blade margins are hairy. Ligules are membranous with a ciliate margin. *B. rubens* is similar in appearance but hairs grow only on the ventral and dorsal surfaces of the leaf blades and not on the margins, the membranous ligule is triangular in shape and the leaf blades seldom twist.



Scientific Name: *Centaurium calycosum* (Arizona centaury) – native, annual forb

Family: *Gentianaceae*

Notes: Leaf veins are impressed.



Scientific Name: *Ceratocephalus testiculatus* (curveseed butterwort) – nonnative, annual forb

Family: *Ranunculaceae*

Notes: When first emerging, seedlings look very similar to *Myosurus cupulatus*, but leaves soon become dissected and are not as elongated.



Scientific Name: *Chamaesyce albomarginata* (whitemargin sandwort) – native, perennial forb
Family: *Euphorbiaceae*
Notes: Cotyledons have a distinct central groove. Seedlings quickly form into sprawling mats.



Scientific Name: *Conyza canadensis* (Canadian horseweed) – native, annual forb

Family: *Asteraceae*

Notes: The two-lobed leaf is diagnostic for this plant. Young leaves will have a sparse cover of white hairs on the upper surface. Similar in appearance to seedlings of *Lepidium lasiocarpum*, but *L. lasiocarpum* quickly develops multiple-lobed leaves.



Scientific Name: *Cryptantha gracilis* (narrowleaf cryptantha) – native, annual forb

Family: *Boraginaceae*

Notes: Long, linear leaves distinguishes this species from many other members of this genus and family.



Scientific Name: *Cylindropuntia whipplei* (Whipple cholla) – native, perennial shrub

Family: *Cactaceae*

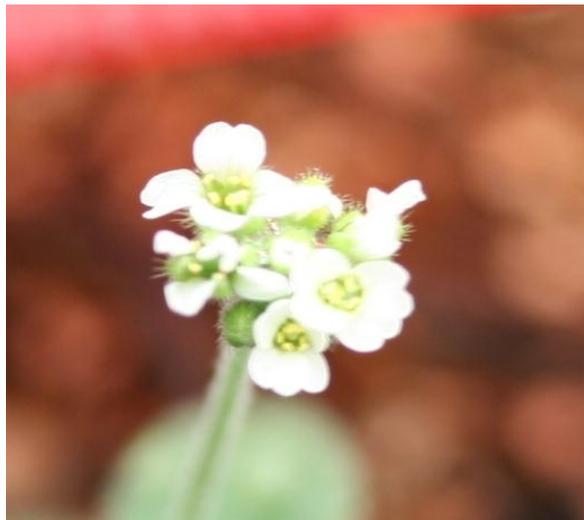
Notes: red cotyledons



Scientific Name: *Descurainia pinnata* (tansy mustard) – native, biennial forb.

Family: *Brassicaceae*

Notes:



Scientific Name: *Draba cuneifolia* (wedgeleaf draba) – native, annual forb

Family: *Brassicaceae*

Notes: Stellate hairs, white flowers. Leaf form variable.



Scientific Name: *Eriogonum palmerianum* (Palmer's buckwheat) – native, annual forb

Family: *Polygonaceae*

Note: Difficult to distinguish between *E. palmerianum* and *E. davidsonii* at seedling stage. *E. palmerianum* has more cobweb-like hairs on the leaves and stems. Begins branching at ground level, whereas *E. davidsonii* branches after main stem has emerged.



Scientific Name: *Erodium cicutarium* (redstem stork'sbill) – nonnative, annual forb

Family: *Geraniaceae*

Notes: One of the first species to emerge from the soil samples.



Scientific Name: *Gilia inconspicua* (shy gilia) – native annual forb

Family: *Polemoneaceae*

Notes: Cotyledons are similar in appearance to those of *Ceratocephala testiculatus*.



Scientific Name: *Gutierrezia sarothrae* (broom snakeweed) – native, perennial shrub

Family: *Asteraceae*

Notes: Punctate glands on leaves. When crushed, leaves produce a resin-like odor.



Scientific Name: *Lactuca serriola* (prickly lettuce) – nonnative, biennial forb.

Family: *Asteraceae*

Notes: Cotyledons have white hairs along the leaf margins. Secondary leaves have bristles along the midrib.



Scientific Name: *Lepidium lasiocarpum* (shaggyfruit pepperweed) – native, annual forb

Family: *Brassicaceae*

Notes:



Scientific Name: *Lotus denticulatus* (riverbar bird's-foot trefoil) – native, annual forb

Family: *Fabaceae*

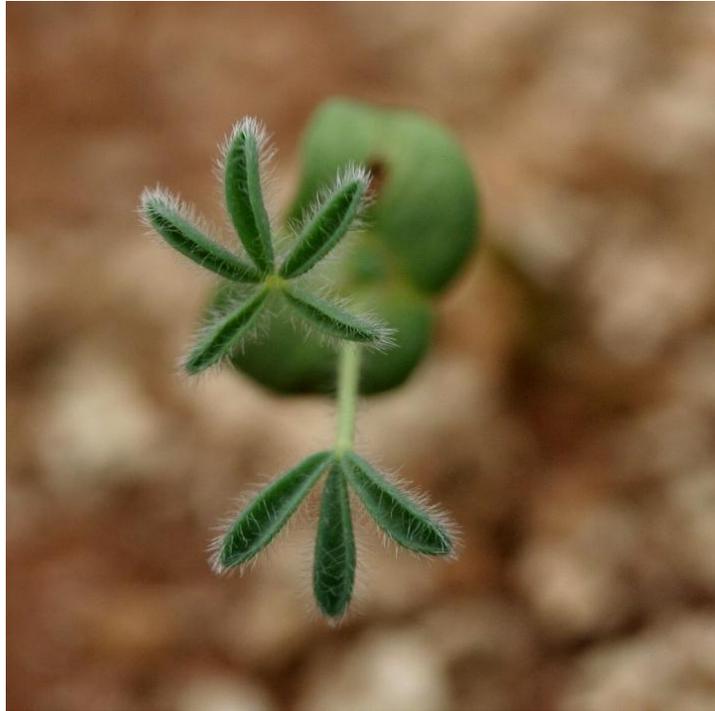
Notes: Stems are generally red. Cotyledons can be light green but, are usually dark green and shiny. Leaves are darker green and more acute than the similar appearing *L. humistratus*.



Scientific Name: *Lotus humistratus* (foothill deervetch) – native, annual forb

Family: *Fabaceae*

Notes: Cotyledons are mottled and grayish green in color. Stems are white and leaves are more rounded than in *L. denticulatus*.



Scientific Name: *Lupinus kingii* (King's lupine) – native, annual forb

Family: Fabaceae

Notes: Large (~ 1cm), thick cotyledons.



Scientific Name: *Myosurus cupulatus* (Arizona mousetail) – native, annual forb

Family: *Ranunculaceae*

Notes:



Scientific Name: *Phacelia freemontii* (Fremont's phacelia) – native, annual forb

Family: *Hydrophyllaceae*

Notes:



Scientific Name: *Plantago patagonica* (woolly plantain) – native, annual forb

Family: *Plantaginaceae*

Notes: Similar to *Microseris lindleyi* but with hairy, more acute leaves.



Scientific Name: *Poa secunda* (Sandberg's bluegrass) – native, perennial grass

Family: *Hydrophyllaceae*

Notes: flattened leaf bases.



Scientific Name: *Portulaca oleracea* (little hogweed) – nonnative, annual forb

Family: *Portulacaceae*

Notes: Red stems, succulent leaves.



Scientific Name: *Purshia stansburiana* (cliffrose) – native, perennial shrub

Family: Rosaceae

Notes:



Scientific Name: *Silene antirrhina* (sleepy silene) – native, annual forb

Family: *Caryophyllaceae*

Notes:



Scientific Name: *Sphaeralcea ambigua* (desert globemallow) – native, perennial forb

Family: *Malvaceae*

Notes: Seedlings similar in appearance to *Physalis spp.*



Scientific Name: *Sporobolus cryptandrus* (sand dropseed) – native, perennial grass

Family: *Poaceae*

Notes: Tuft of hairs at collar.



Scientific Name: *Vicia ludoviciana* (Louisiana vetch) – native, annual forb

Family: *Fabaceae*

Notes:



Scientific Name: *Vulpia octoflora* (sixweeks fescue) – native, annual grass

Family: *Poaceae*

Notes: Fairly long, membranous ligule.