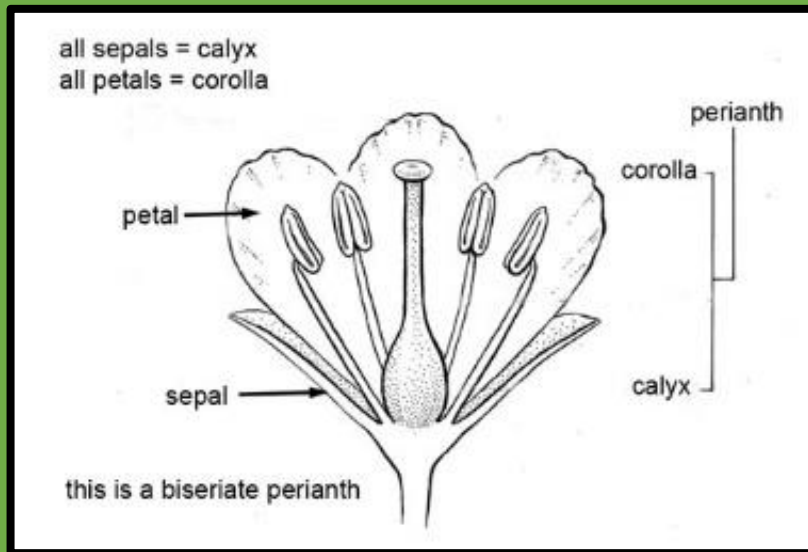


EARLY FLOWERING HERBS WITH YELLOW PETALS

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In this essay, we present common plants that flower from March to the end of June and have yellow petals. This essay does not include all species with yellow petals, some of which have not yet been documented in the Preserve.



There is often wide variation in color within flowers. For example, a species may have green sepals, yellow petals, white filaments, and orange anthers. For this reason, we have elected to use petal color. Nevertheless, petals may be multi-colored. In that case, we use the dominant color and in some cases, we have treated the species in more than one essay.

Usually plants with yellow petals at this time of year are entirely yellow, i.e., they do not have nectar guides in other colors. Yellow is known to attract bee pollinators. The most conspicuous yellow spring flowers in the Preserve belong to the Asparagaceae (Asparagus Family), (Asteraceae (Aster Family), Liliaceae (Lily Family), Fabaceae (Pea Family), Oxalidaceae (Wood-sorrel Family), Papaveraceae (Poppy Family), Primulaceae (Primrose Family), Ranunculaceae (Buttercup Family), Rosaceae (Rose Family), and the Scrophulariaceae (Figwort Family).

ASPARAGACEAE: SMOOTH SOLOMON'S SEAL (*Polygonatum biflorum*)



This species is easy to identify because of the often arching stems; presence of rhizomes; sessile leaves that slightly clasp the stem; leaf blades whiter below (abaxial surface) than above (adaxial surface); 2 to several pendent flowers per node; fused corolla tube (yellow) with green lobes; stamens adnate to inside of corolla tube; and one-seeded, dark blue to black, indehiscent fruits. In other areas the flower tubes may be white or change color to white at different stages of development.

ASTERACEAE: COMMON FLEABANE (*Erigeron philadelphicus*)



The common fleabane is the first of the four species of this genus to flower in the late spring to early summer. The genus has very narrow phyllaries subtending the narrow ray flowers. In this species, the ray flowers are purple for most of the length and white toward their bases whereas the disk flowers are yellow throughout. The ray flowers are sterile and the disk flowers are fertile. The species are difficult to differentiate from one another. This species has long, white trichomes on the stem and basal leaves

ASTERACEAE: RATTLESNAKE WEED (*Hieracium venosum*)



Rattlesnake weed is a native species found in dry open areas.

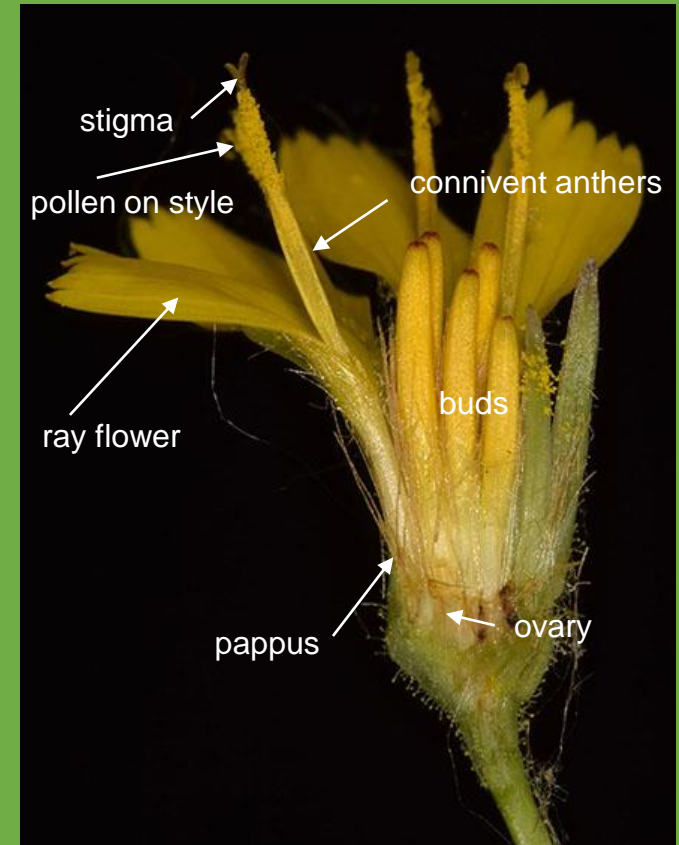


The oblanceolate-shaped basal leaves are purple colored on and along the primary and secondary veins, and the lower stem is densely pilose.

ASTERACEAE: RATTLESNAKE WEED (*Hieracium venosum*)



The rattlesnake weed has flower heads with only ray flowers (also called ligulate flowers). The flowers are bisexual. The pappus (= calyx) is white and filamentous and the phyllaries are covered with microscopic glandular, capitate trichomes.



The five notches at the apex of the corolla probably reflect the evolution of sympetalous corollas from ancestral species with five free petals. The ovary is inferior (i.e., the flower parts arise from the summit of the ovary). The five anthers of the Asteraceae form a tube in which pollen is released when the anthers dehisce. The pollen sticks to the style as it grows through the anther tube. Eventually, the pollen is pushed out of the anther tube from where it is rubbed off onto potential pollinators.

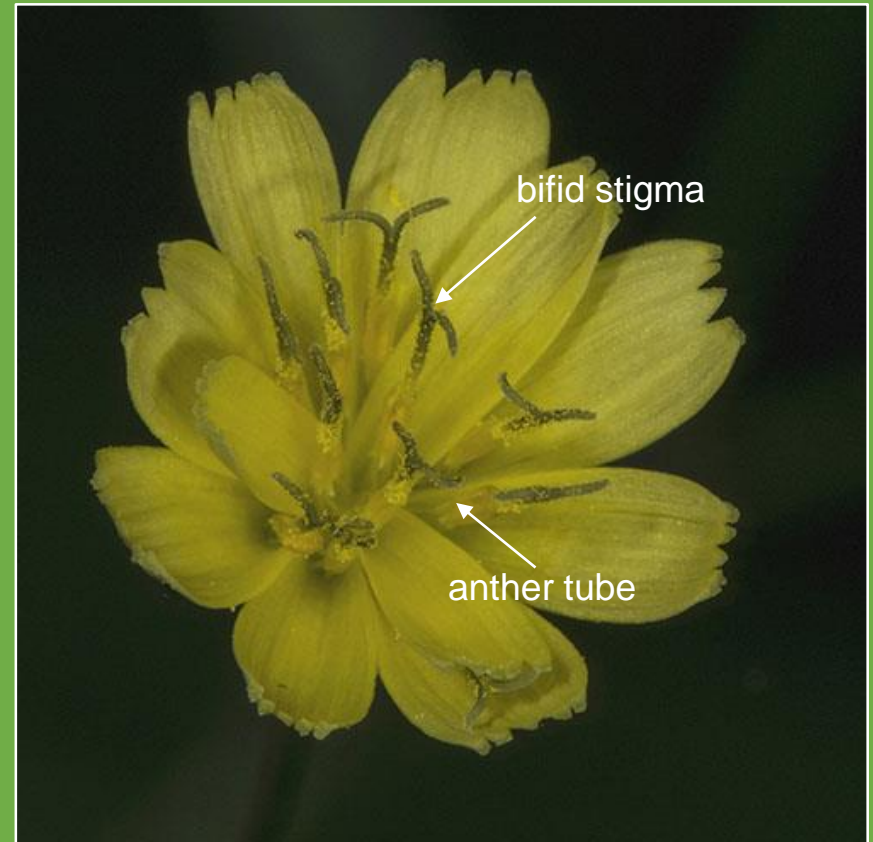
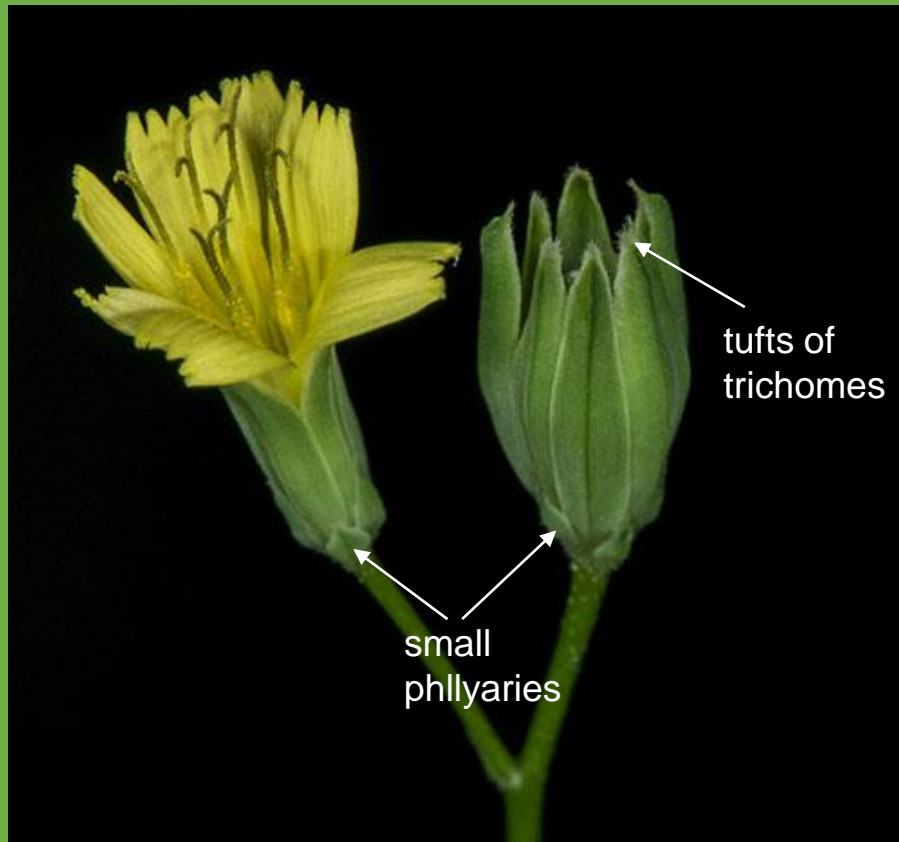
ASTERACEAE: NIPPLEWORT (*Lapsana communis*)



This species is native to Eurasia but is now found throughout most of the northeastern United States. Where it grows in disturbed woodlands, fields, and waste lands.

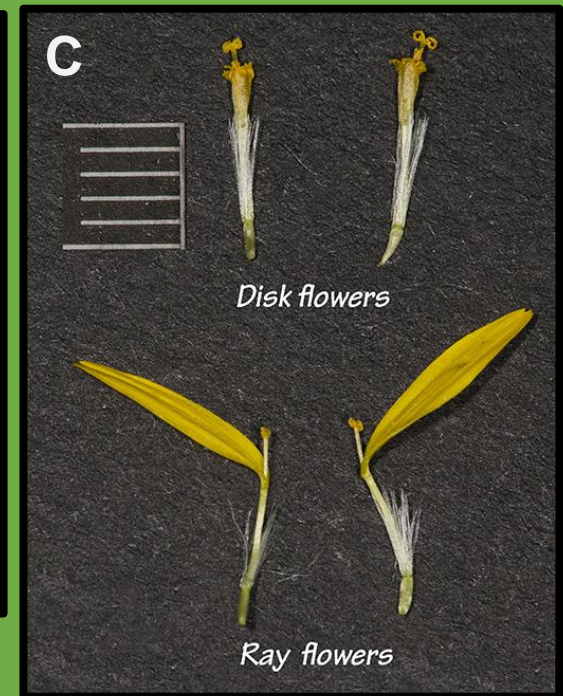
A. Habit. B. Simple leaf. C. Pinnate leaf. This species is identified by pubescent stems, the presence of heterophylly, and the broadly dentate leaf margins. See flower characters in following slide.

ASTERACEAE: NIPPLEWORT (*Lapsana communis*)



The nipplewort flower heads are relatively small in diameter and usually have fewer than 20 ray flowers. The green phyllaries are glabrous except for small tufts of trichomes at their apices. There are a few small phyllaries below the larger ones. Only ray flowers are present in the head. The stigma is bifid but is not curled. Note that the stalk of the style is covered by pollen.

ASTERACEAE: HEART-LEAVED GROUNDSEL (*Packera aurea*)

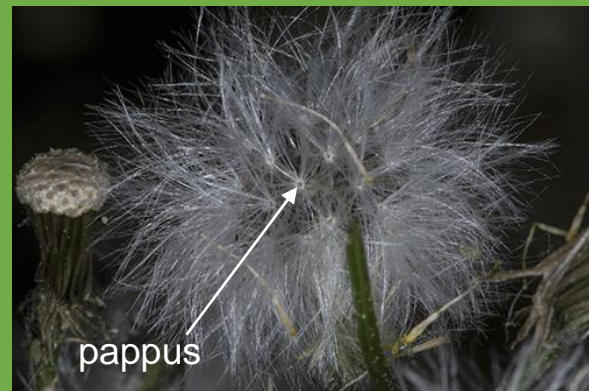
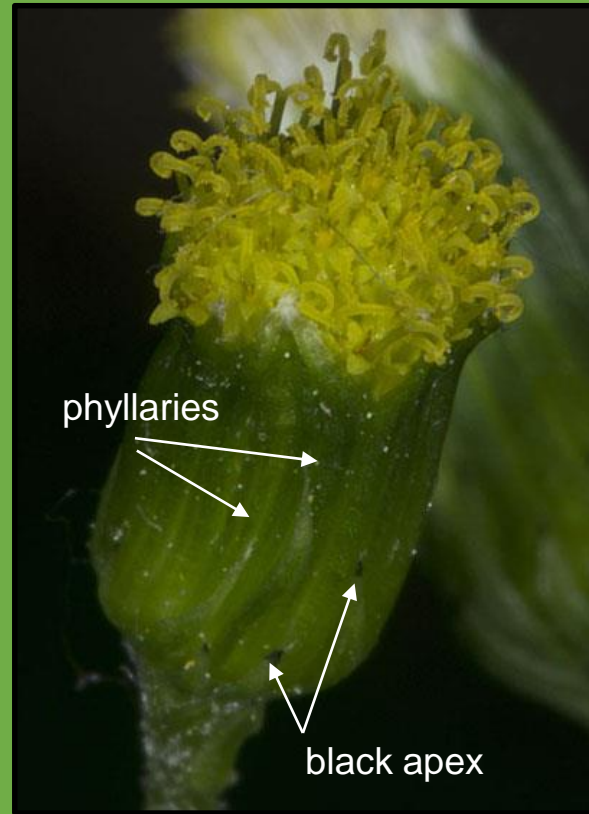


A. Basal leaves of this species are heart-shaped and cauline leaves are linear. The latter are often pinnatifid.

B. Flowers of this species are compacted into a head (= capitulum). The head is an inflorescence with many individual flowers.

C. The flowers are of two types, one is radially symmetrical (disk flower) and the other is bilaterally symmetrical (ray flower). Different species have different combinations of flower types, some have both types (this species), others have only ray flowers (e.g., the dandelion), and others have only disk flowers (e.g., the common groundsel in this essay).

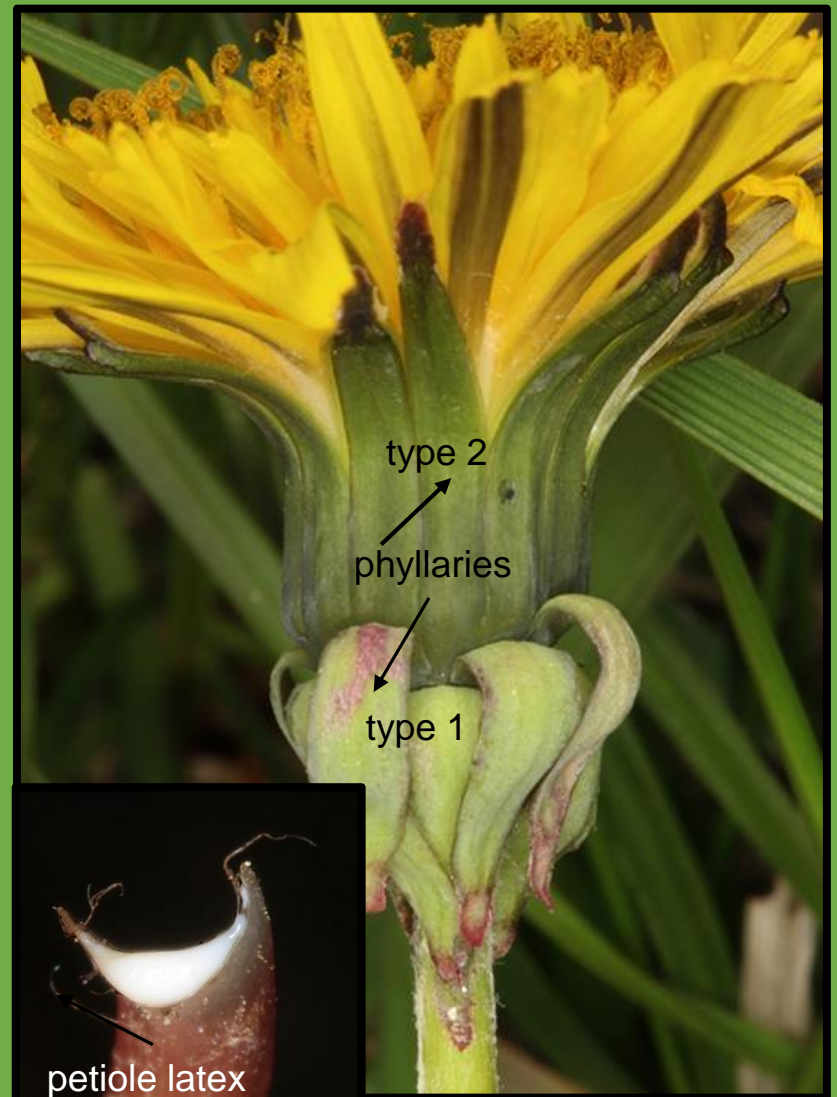
ASTERACEAE: COMMON GROUNDSEL (*Senecio vulgaris*)



The common groundsel is native to the Old World. It is now established throughout the United States and most of Canada where it is common in disturbed soils and waste places.

This species is recognized by its lack of latex; pinnate or pinnatifid leaves; upper leaf blade bases clasping stems; phyllaries linear with at least some of the lower and smaller ones with a black apex (only a few seen in this plant); heads with only bisexual disk flowers, and a white long, filamentous pappus (= a specialized calyx applied only to the Asteraceae).

ASTERACEAE: DANDELION (*Taraxacum officinale*)



The dandelion is an alien species from Eurasia. The inflorescence consists of ray flowers subtended by bracts called phyllaries. Note that there are two types of phyllaries in the dandelion. The bracts are common to species of Asteraceae. When the leaves are cut they exude white latex.

FABACEAE: BLACK MEDICK (*Medicago lupulina*)



This alien plant is found in open, sunny areas where it sometimes is found in dense patches. The black medick is identified by the 3-foliolate leaves, stipules, bilateral flowers, and yellow petals. It starts to flower at the end of May.



**LILIACEAE: YELLOW
TROUT LILY**
(*Erythronium americanum*)



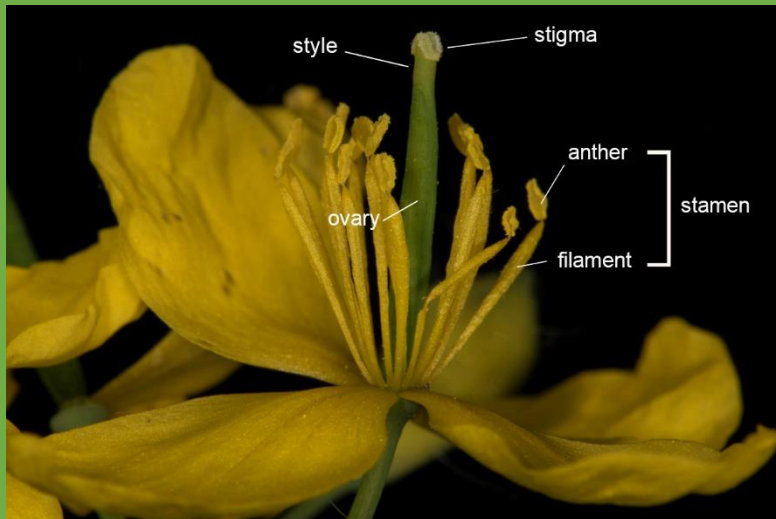
The trout lily is a classic spring ephemeral. It appears early in the spring and develops its mottled leaves, flowers, and seeds before canopy trees flush their leaves. When the tree leaves mature they block sun light which makes it difficult for spring ephemerals to produce photosynthate. For this reason ephemerals store carbohydrates in underground bulbs, tubers, and rhizomes in the spring. Energy stored in underground parts is used to produce the plants of the following year. Spring ephemerals are not as common as they were 50 years ago, for example of deer browsing, and the introduction of alien worms and plants. See Gracie (2012) for more information about this spring ephemeral.

OXALIDACEAE: COMMON YELLOW WOOD-SORREL (*Oxalis stricta*)



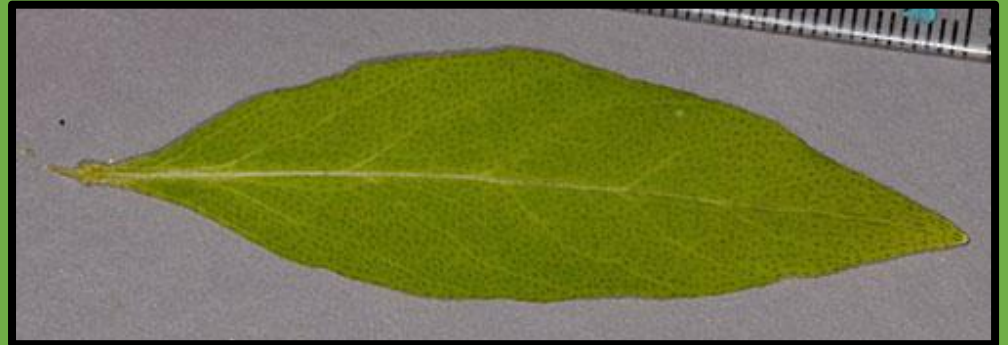
This native species prefers open habitats along the road and does not flower until the end of June in the Preserve. The leaves have three heart-shaped leaflets similar to those of some legumes (e.g., clover) but differs by: five instead of more stamens, morphologically similar petals (vs. all petals morphologically different), and five fruit valves instead of two.

PAPAVERACEAE: CELANDINE (*Chelidonium majus*)



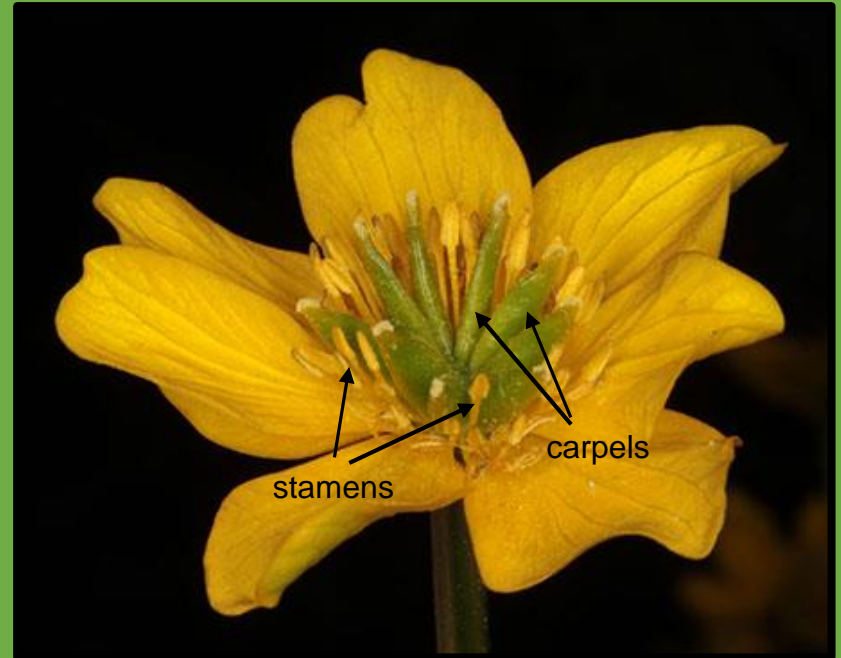
This species has pinnate leaves and shallowly lobed secondary leaflets. When cut the plant exudes a yellowish-orange latex. The two green sepals and other parts of the plant have long white trichomes oriented at right angles to the surface of buds and other organs. There are four petals and a narrow pistil that has a short style between the ovary and the 2-parted stigma. See Gracie (2012) for more information on this species.

PRIMULACEAE: WHORLED LOOSESTRIFE (*Lysimachia quadrifolia*)



This native plant often grows on top of large boulders where it is protected from deer browsing. It can be identified by leaves in whorls of four along the length of the stem, inflorescences with slender pedicels arising from the axils of the leaves, and dark punctations on the abaxial side of the leaf blades.

RANUNCULACEAE: MARSH-MARIGOLD (*Caltha palustris*)



This species is found in wet habitats. The leaves are heart-shaped with dentate margins, the perianth consists of tepals separate from one another, the stamens are numerous, and the green carpels are separate from one another.



RANUNCULACEAE: KIDNEY-LEAVED BUTTERCUP (*Ranunculus abortivus*)



A. This species is heterophyllous, i.e., the basal leaves are kidney-shaped while the cauline leaves are lobed. Some of the uppermost leaf lobes are long and narrow.

B. Lateral view of a flower. The sepals are reflexed downward and trough-like, i.e., they are not flattened.

C. Apical view of a flower. The apices of the petals are acute in shape.

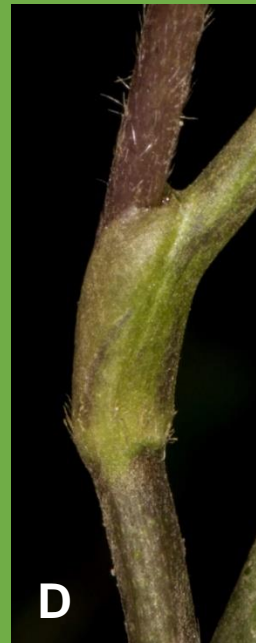
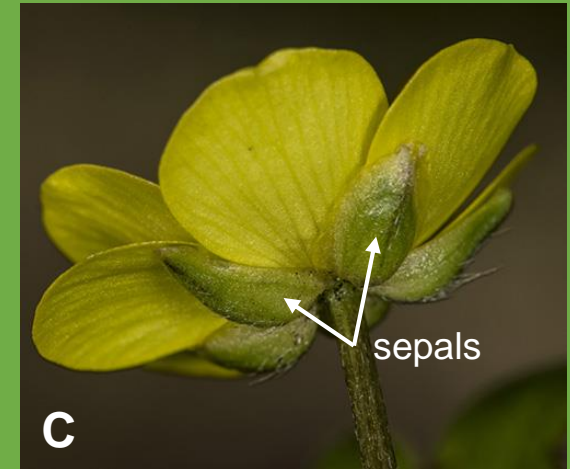
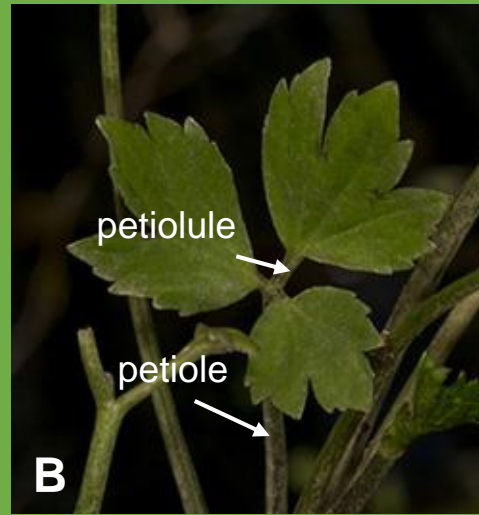
This species has flowers that are usually smaller than 5 mm in diam. This buttercup is usually found in wet habitats.

RANUNCULACEAE: COMMON BUTTERCUP (*Ranunculus acris*)



This is a common species recognized by its deeply cleft leaves; dirty yellowish-white sepals; shiny petals for 2/3 their upper length and dull for 1/3 their lower length. These two color differences are divided by a jagged line. This species has flowers > 10 mm diam.

RANUNCULACEAE: HISPID BUTTERCUP (*Ranunculus hispidus*)



D. Lateral view of leaf sheath.
E. Adaxial view of leaf sheath.

- A. Upper leaves are 3-lobed.
- B. Lower leaves have petiolules.
- C. Sepal obliquely oriented and trough-shaped.

This species has trifoliate as well as 3-lobed leaves.

RANUNCULACEAE: HOOKED CROWFOOT (*Ranunculus recurvatus*)



The hooked crowfoot has leaves that are deeply split into three lobes. Basal leaves are smaller but not different from the stem leaves. The recurved sepals and the medium-sized flowers (over 5 mm diam.) help identify this species. This buttercup inhabits wet areas.



ROSACEAE: DWARF CINQUEFOIL (*Potentilla canadensis*)

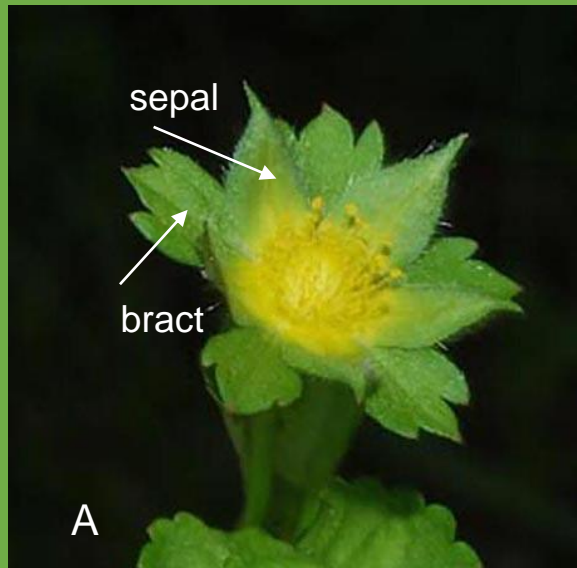


This species of *Potentilla* forms multi-leafed clumps connected by runners. The leaflets have toothed margins for only their upper half and the stems have conspicuous silver-white trichomes.

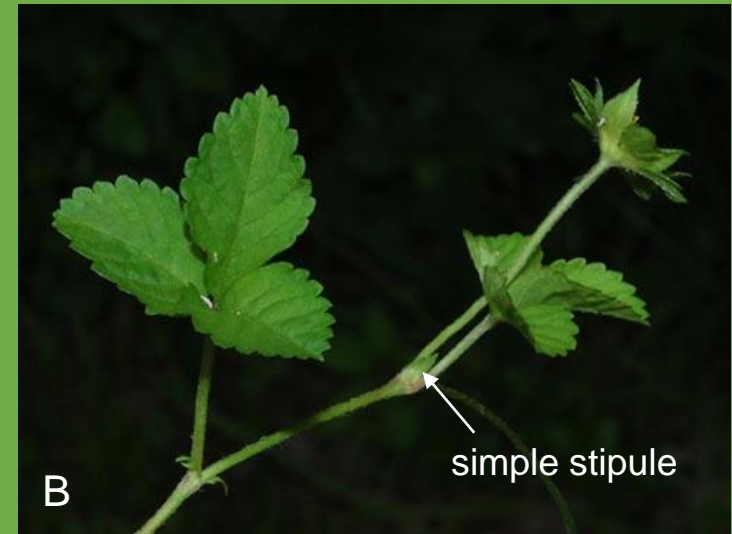
ROSACEAE: INDIAN STRAWBERRY (*Potentilla indica*)

An alien plant from Asia now widespread in eastern and western North America. *Duchesnia indica* is a synonym of this species (Weier, 2017). It differs from other species of *Potentilla* in the Preserve by its 3- versus 5-foliolate leaves and apically toothed bracts subtending the 5 sepals.

A. Flower with petals absent.



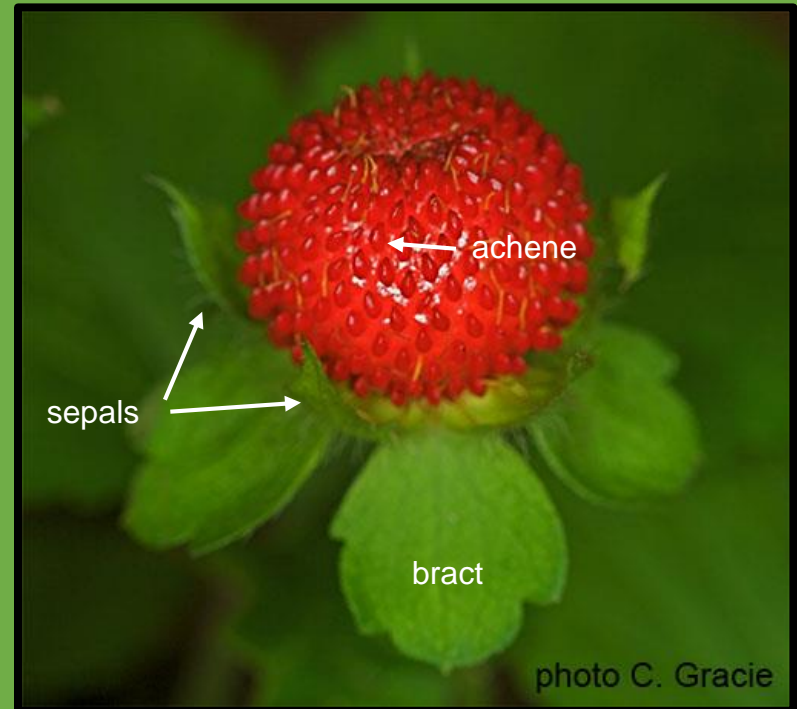
B. Runner.



C. Some stipules are lobed at the apex.



ROSACEAE: INDIAN STRAWBERRY (*Potentilla indica*)



The species has a strawberry-like fruit which develops from a single flower. The carpels of each ovary are not fused to one another. This type of ovary is called apocarpous. The fruits (achenes) are embedded in tissue emanating from the receptacle. The fruits are eaten by animals but they are insipid to humans. The Indian strawberry grows in open, sunny habitats and is common in gardens and lawns.

ROSACEAE: COMMON CINQUEFOIL

(*Potentilla simplex*)



Species of this genus usually have palmately compound leaves with 5 leaflets and yellow petals.

The petals and sepals are usually 5 merous. Below the sepals there are 5 bracteoles making it appear as if there are 10 sepals (Gleason & Cronquist, 1991).

This species produces long runners that allow it to reproduce vegetatively.

The common cinquefoil prefers open habitats along the edge of the Preserve.



SCROPHULARIACEAE: COMMON MULLEIN (*Verbascum thaspus*)



Native to Europe but now widely spread throughout temperate North America where it is usually found in open, sunny, disturbed habitats; especially along roads. This species can be identified by its densely gray pubescent leaf blades, upper leaf blades decurrent onto the stem, inflorescences with densely congested flowers, yellow corollas, and five stamens with the upper three shorter and more pubescent than the lower two.