

***Claytonia virginica* & *Claytonia caroliniana*: Spring beauty
Meeautikwaeaugpineeg
 Species Productivity Schedule**

Winter:

- Forest plants dormant (0)
- Roots and corm survive underground (+)

Early Spring:

- Snow melts (0)
- Leaves sprout from corm / seeds sprout (+)
- Humans and rodents gather corms (-)
- Rapid accumulation of biomass in abundant light (+)

Mid to Late Spring:

- Humans harvest greens (-)
- Stamens develop (+)
- Stigma develops (+)
- Cross fertilization by flying insects and butterflies (+)
- Fruiting stage/Seed dispersal (+)
- Canopy leaves develop (0)
- Senescence and decomposition / nutrients reabsorbed into corm / nutrients returned to soil (+)
- Humans and rodents gather corms (-)

Fall:

- Canopy leaves fall (0)
- Roots and corm survive underground (+)

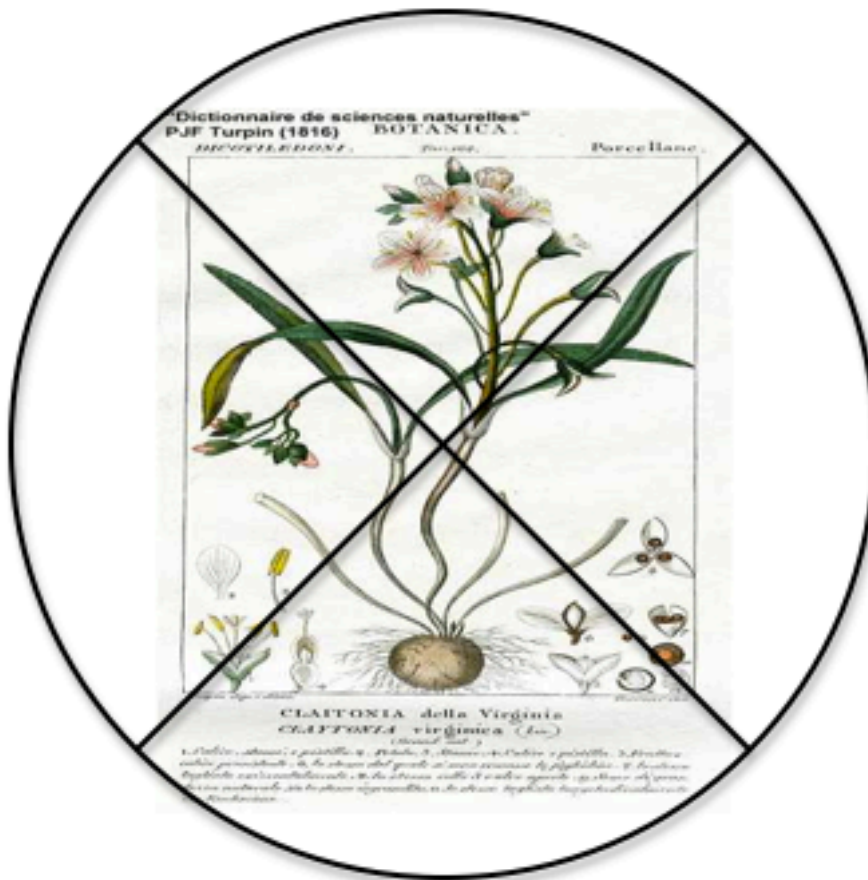


Figure 1: *C. virginica* (original source: Dictionnaire de sciences naturelies)

Summer:

- Canopy in full bloom (0)
- Roots and corm survive underground (+)

Key:

- (+) – Progression in spring beauty life cycle
- (-) – Disruption in spring beauty life cycle
- (0) – Not part of spring beauty life cycle

Family: Montiaceae (formerly: Portulaceae)

Latin Name: *Claytonia virginica* L., *Claytonia caroliniana* L.

Common Names: Spring beauty, fairy spud

Anishinaabe Name: *Meeautikwaeaugpineeg*

Taxonomy

The genus *Claytonia* was named after John Clayton (1685-1773), an American botanist, physician, and clerk to the County Court of Gloucester County, VA where the species name *virginica*, meaning “of Virginia”, comes from (Black & Judziewicz, 2009; Couplan, 1998). *C. caroliniana* was similarly named after the Carolinas. The difference in scientific nomenclature between these species reflects a difference in distributions and slight variation in morphology (*C. virginica* is sometimes referred to as narrow-leaved spring beauty). The Anishinaabemowin word for spring beauty is *Meeautikwaeaugpineeg* and it can be applied to both species since they are functionally the same for humans (Meeker & Elias, 1993). The Anishinaabemowin name may refer to the plant’s preferred forest habitat and to the underground organs from which spring beauty’s most common use is derived. However, very few print or online sources (if any) exist that provide a literal translation of the word into English. The English common name, “fairy spud”, was coined by a plant forager named Euell Gibbons and has been used to describe the plant’s underground storage organ (Edsall, 1985; Thayer, 2006). Other names for the corm include “Indian potato”, “wild potato”, and “mountain potato” (Kuhnlein & Turner, 1991). The genus *Claytonia* used to be classified as a member of the family Portulaceae but was recently reclassified as a member of the family Montiaceae.

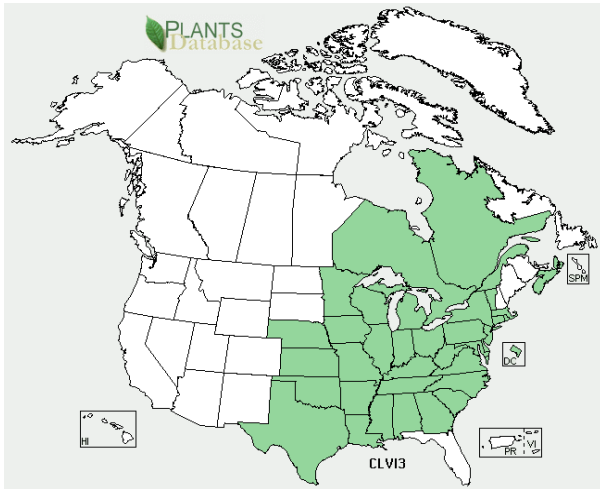


Figure 2: *C. virginica* North American distribution (Source: USDA-NRCS PLANTS Database)

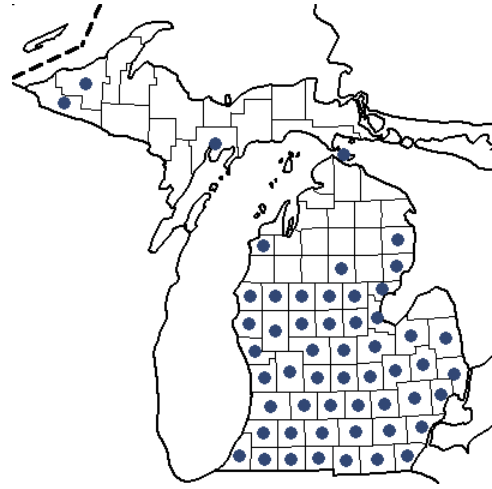


Figure 3: *C. virginica* Michigan distribution (source: Michigan Flora Online)

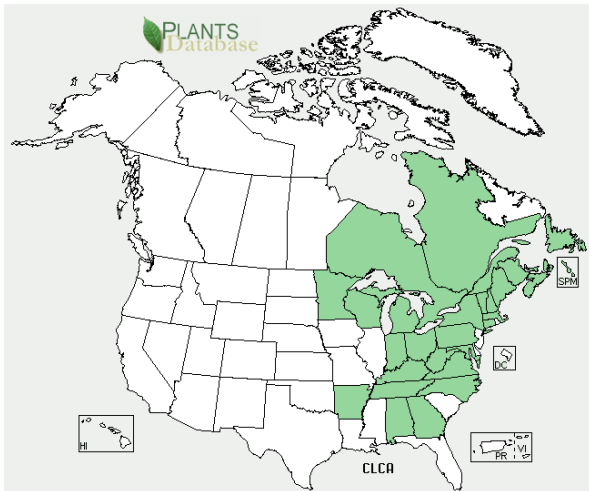


Figure 4: *C. caroliniana* North American distribution (Source: USDA-NRCS PLANTS Database)

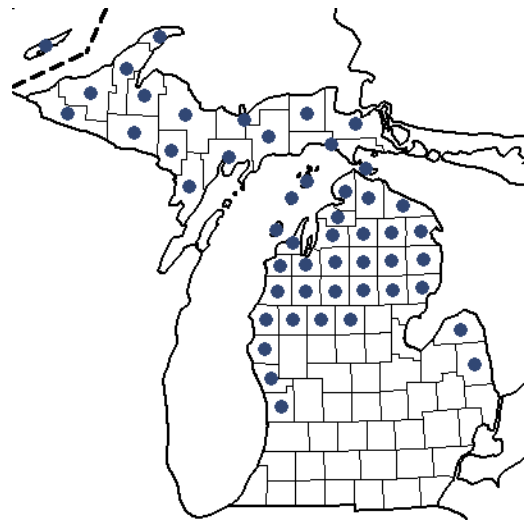


Figure 5: *C. caroliniana* Michigan distribution (source: Michigan Flora Online)

Description

Claytonia virginica and *Claytonia caroliniana* are ephemeral, herbaceous perennials (Elias & Dykeman, 1990). Spring beauty grows in large colonies in rich woodlands (i.e. beech-maple and oak forests), wooded floodplains, wet fields, or mucky forests (Elias & Dykeman, 1990; Thayer, 2006; Voss & Reznicek, 2012). Individuals of spring beauty vary in number of flowers and stems, having anywhere from 5-20 flowers each (Elias & Dykeman, 1990; Voss & Reznicek, 2012). Number of stems usually coincides with the size of the corm and is still used to identify the best individuals for harvest (Kuhnlein & Turner, 1991). In the spring, corms produce stalks with two opposite leaves that are elongated, pointed, and without petioles in *C. virginica* and ovate with petioles in *C. caroliniana* (Thayer, 2006). *C. virginica* also has oblong vegetative leaves that are 4-8 times longer than they are wide, which usually die off before the flowering stage (Kuhnlein & Turner, 1991; Voss & Reznicek, 2012). Bogle (1969) describes the inflorescence of these plants as a racemose cyme with several flower clusters developing along a central stem. Flowers have a single style, five stamens, two sepals, and five petals, which range in color from white to pink or white with pink veins (Cronquist and Gleason, 1991; Kuhnlein & Turner, 1991; Schemske, 1977).



Figure 6: *C. virginica* (Source: USDA-NRCS PLANTS Database)

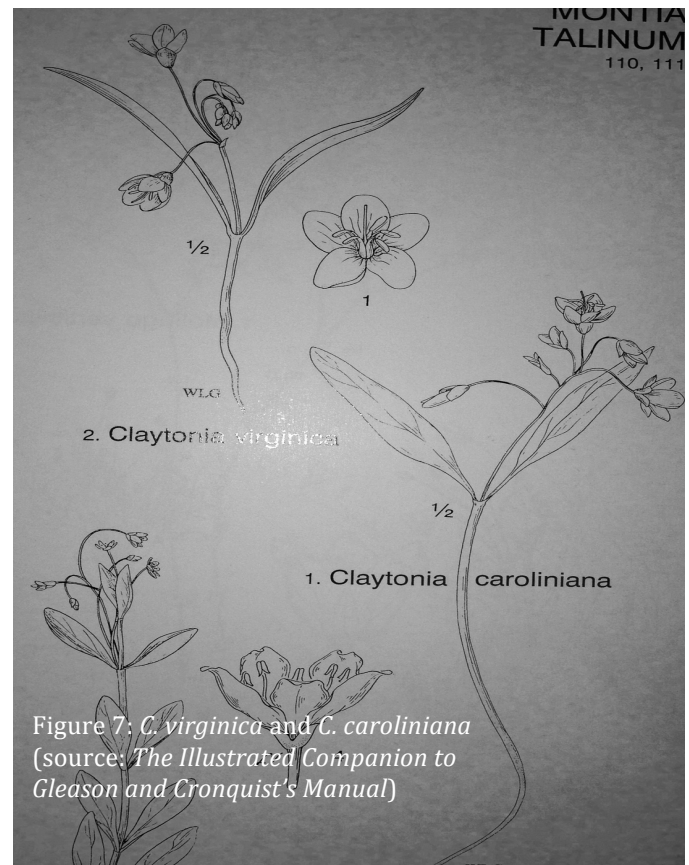


Figure 7: *C. virginica* and *C. caroliniana* (source: *The Illustrated Companion to Gleason and Cronquist's Manual*)

Uses

Indigenous peoples all over North America gathered and ate spring beauty corms (Kuhnlein & Turner, 1991). These starchy storage organs were eaten raw or prepared by baking, boiling, or frying them as one would a potato (Elias & Dykeman, 1990; Kuhnlein & Turner, 1991). Spring beauty corms were often harvested from late May until late June and are said to taste like boiled chestnuts (Edsall, 1985; Kuhnlein & Turner, 1991). Thayer (2006) recommends selective harvesting of larger corms when they're largest either before or after the ephemeral's growing season but warns that they may be difficult to locate if the plants have no leaves or stems. *Claytonia lanceolata*, which is sometimes considered a variety of *C. caroliniana* was harvested by Native peoples of present day British Columbia after flowering or in the summer and fall though with greater difficulty than in the spring (Kuhnlein & Turner, 1991). Medium sized tubers of *C. lanceolata* were harvested in large quantities and were often stored for winter use (Kuhnlein & Turner, 1991; Minnis & Elisens, 2000). This plant's corm was said to have grown as big as a person's fist during the period when native peoples regularly burned the land every five to six years (Minnis & Elisens, 2000). Leaves of either Michigan native species boiled in salt water may also serve as an edible but not particularly tasty vegetable (Elias & Dykeman, 1990). Moerman cites a study by James William Herrick from 1977, which describes Iroquois use of *C. virginica* as an anticonvulsive and contraceptive (Meeker & Elias, 1993). According to Herrick's PhD thesis, a cold infusion or decoction of powdered roots was used to treat children with convulsions. Herrick also reported that when eaten together, the green parts of both *C. virginica* and *Erythronium americanum* acted as a permanent contraceptive for young Iroquois women (Herrick, 1995). Couplan (1998), on the other hand, reports that the young leaves of *C. virginica* are good to eat raw.

Ecology

Spring beauty prefers moist, humic soils of acidic or neutral pH in somewhat shaded areas and it has been known to live in lawns and along roadsides (Edsall, 1985; Zichmanis & Hodgins, 1982). Bumblebees, bee-like flies, and butterflies visit the flowers to collect pollen and nectar while white-footed mice have been known to consume the tubers and seeds of *C. virginica* (Mathews & Taylor, 1955; Zichmanis & Hodgins, 1982). Spring beauty resists cold and frosts well and its flowers respond to sunlight, opening and facing the sun when skies are clear (Illinois Natural History Survey, 1936). Spring beauty may play an important role in retaining nutrients that would otherwise be lost from rich forest ecosystems in early spring when nutrient loss due to snowmelt runoff is highest (Muller, 2003). The so called vernal dam hypothesis suggests that spring beauty and other herbaceous spring ephemerals may interact either competitively or additively with soil microbes to absorb

nitrogen and potassium during the ephemerals' short life cycles (Muller, 2003). These species accumulate biomass and then release the nutrients through senescence and decomposition in time for canopy leafout when nutrient demand is great (Muller, 2003). *The Herbaceous Layer in Forests of Eastern North America* is an excellent source for more information on the ecological role of spring ephemerals (Muller, 2003; Neufeld & Young, 2003).

Phenology

Spring beauty has a short flowering and fruiting season in the spring before the canopy leaves expand, while abundant sunlight still reaches the understory (Meeker & Elias, 1993). During most of the year, only the roots and starchy corm survive at a depth of 5-10 cm underground (Thayer, 2006). *Claytonia virginica* and *Claytonia caroliniana* are among the first species to leaf out after winter and only last above ground for about six to ten weeks (Neufeld & Young, 2003). After this period the plant's vegetative parts turn yellow and die off as nutrients are reabsorbed into the corm (Neufeld & Young, 2003; Voss & Reznicek, 2012). The flower's stamens mature before its stigma, which ensures cross-fertilization by flying insects and butterflies (Mathews & Taylor, 1955). Ovaries contain six ovules that produce egg-shaped or globular capsulated fruits when fertilized (Elias & Dykeman, 1990). The fruits are about 5-10 mm in diameter and contain many tiny, glossy, black seeds, which are ejected when the fruit matures after about ten days (Elias & Dykeman, 1990; Kuhnlein & Turner, 1991; Schemske, 1977). The roots and corms continue to live underground from the beginning of summer until the end of winter (Voss & Reznicek, 2012).

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