

Phenophase Definitions

Sugar Maple, *Acer saccharum*

Directions:

As you report on phenophase status (Y, N or ?) on the datasheets, refer to the definitions on this sheet to find out what you should look for, for each phenophase in each species. To report the intensity of the phenophase, choose the best answer to the question below the phenophase, if one is included.



Sugar maple tree.
 B. Bisson, ME Sea Grant

Leaves

Breaking leaf buds

One or more breaking leaf buds are visible on the plant. A leaf bud is considered "breaking" once a green leaf tip is visible at the end of the bud, but before the first leaf from the bud has unfolded to expose the leaf stalk (petiole) or leaf base.

How many buds are breaking?

Less than 3; 3 to 10; More than 10.



Buds on sugar maple.
 B. Bisson, ME Sea Grant

Leaves

One or more live unfolded leaves are visible on the plant. A leaf is considered "unfolded" once the leaf stalk (petiole) or leaf base is visible. New small leaves may need to be bent backwards to see whether the leaf stalk or leaf base is visible. Do not include dried or dead leaves.

What proportion of the canopy is full with leaves?

Less than 5%; 5-24%; 25-49%; 50-74%; 75-94%; 95% or more.



New leaves on sugar maple.
 B. Bisson, ME Sea Grant

Increasing leaf size

A majority of leaves on the plant have not yet reached their full size and are still growing larger. Do not include new leaves that continue to emerge at the ends of elongating stems throughout the growing season.

What proportion of full size are most leaves?

Less than 25%; 25-49%; 50-74%; 75-94%; 95% or more.

Colored leaves

One or more leaves (including any that have recently fallen from the plant) have turned to their late season colors.

What proportion of the canopy is still full with green leaves?

95% or more; 75-94%; 50-74%; 25-49%; 5-24%; Less than 5%.



Fall foliage of sugar maple
 Joseph O'Brien USDA Forest Service
 Bugwoodorg

Falling leaves

One or more leaves are falling or have recently fallen from the plant.

Flowers

Flowers

One or more fresh flowers or flower heads (inflorescences) are visible on the plant. Flower heads include many small flowers that usually do not open all at once. Do not include wilted or dried flowers that remain on the plant, or heads whose flowers have all wilted or dried.

How many fresh flowers or flower heads are present?

Less than 3; 3 to 10; More than 10.



Sugar maple flowers
Paul Wray, Iowa State University,
Bugwood.org

Open flowers

One or more open fresh flowers are visible on the plant. Flowers are considered "open" when the reproductive parts (male stamens or female pistils) are visible between unfolded or open flower parts. Do not include wilted or dried flowers that remain on the plant.

How many fresh flowers are open?

Less than 3; 3 to 10; More than 10; Peak flower: *The plant has a large number of flowers and one half (50%) or more are open and still fresh.*

Pollen release

One or more flowers on the plant release pollen when gently shaken or blown.

How many flowers release pollen?

Less than 3; 3 to 10; More than 10; Peak pollen: *The plant has a large number of flowers and one half (50%) or more release pollen.*

Fruits

Fruits

One or more fresh fruits are visible on the plant

How many fresh fruits are present?

Less than 3; 3 to 10; More than 10.

Ripe fruits

One or more ripe fruits are visible on the plant.

How many fruits are ripe?

Less than 3; 3 to 10; More than 10.

Recent fruit drop

One or more fresh mature fruits or seeds have dropped or been removed from the plant since your last visit. Do not include obviously immature fruits that have dropped before ripening, such as in a heavy rain or wind.

How many mature fruits have dropped?

Less than 3; 3 to 10; More than 10.



Sugar Maple fruits (samaras)
Paul Wray, Iowa State University, Bugwood.org

Special Considerations for Observing deciduous trees and shrubs

- A. **Red maple and sugar maple have separate male and female flowers.** If you know whether the flowers you are observing are male or female (or both), please make a comment about it for that observation.

Note: Individuals with only male flowers will not produce fruit.

- B. If drought seems to be the cause of leaf color or fall for a plant, please make a comment about it for that observation.