

Identifying ash trees



COLORADO CENTER FOR
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Ash tree identification

- Ash trees (*Fraxinus spp.*) are highly susceptible to attack by the invasive emerald ash borer.
- Accurately identifying ash trees is an important step in monitoring emerald ash borer.



Green ash (*Fraxinus pennsylvanica*)

Image credit: Hanna Royals, Screening Aids, USDA APHIS PPQ, Bugwood.org

Ash tree identification

- Ash trees can be identified based on the following physical characteristics:
 - Branch and bud arrangement
 - Leaves
 - Bark
 - Seeds
- While some of these characteristics may be seen on other types of trees, only ash trees will meet all the following descriptions



Green ash (*Fraxinus pennsylvanica*)

Image credit: Hanna Royals, Screening Aids, USDA APHIS PPQ, Bugwood.org

Opposite branch and bud arrangement

- Both buds and branches grow directly opposite from one another
 - Not staggered
- *Note that branches and buds can die, and that not every branch or bud will have an opposite



Opposite bud arrangement

Image credit: Colorado State Forest Service



Opposite branch arrangement

Image credit: Colorado state forest service

Opposite branch and bud arrangement

- Other trees with opposite branches and buds:
 - **Maple**
 - **Dogwood**
 - **Chestnut**



Opposite bud arrangement

Image credit: Colorado State Forest Service



Opposite branch arrangement

Image credit: Colorado state forest service

Compound leaves

- Compound leaves composed of 5-11 leaflets
 - Leaflet margins can be smoothed or toothed



Compound leaf of green ash, which has 7 leaflets

Image credit: Colorado State Forest Service



Compound leaf of white ash, which has 9 leaflets

Image credit: Colorado State Forest Service

Compound leaves

- Other trees with compound leaves:
 - **Hickory**
 - **Walnut**
 - **Boxelder**



Compound leaf of green ash, which has 7 leaflets

Image credit: Colorado State Forest Service



Compound leaf of white ash, which has 9 leaflets

Image credit: Colorado State Forest Service

Bark with diamond-shaped ridges

- The bark of ash trees appears different on mature and young trees
- On mature trees, the bark forms diamond-shaped ridges. However, the ridges may be more or less pronounced on different types of ash
- On young trees, the bark is relatively smooth and is usually the same color as twigs



Bark of a mature ash tree. Note the diamond-shaped ridges on the bark surface.

Image credit: Colorado State Forest Service

Bark with diamond-shaped ridges

- Other trees that have similar bark:
 - **Oak**
 - **Norway maple**
 - **Elm**



Bark of a mature ash tree. Note the diamond-shaped ridges on the bark surface.

Image credit: Colorado State Forest Service

Seeds

- Ash seeds are oar-shaped and usually occur in clusters.
- Seeds can be observed hanging on trees until late fall or early winter.



Seeds of white ash.

Image credit: Keith Kanoti, Maine Forest Service, Bugwood.org

Two very common ash trees in Colorado are:

- **Green ash** (*Fraxinus pennsylvanica*)
- **White ash** (*Fraxinus americana*)



Green ash (*F. pennsylvanica*)

Image credit: Joseph OBrien, USDA Forest Service, Bugwood.org



White ash (*F. americana*)

Image credit: Richard Webb, Bugwood.org

Identifying green vs white ash

- Height when mature
 - **Green ash:** 15.2-21.3 meters (50-70 feet)
 - **White ash:** 18.3-24.4 meters (60-80 feet)



Green ash (*F. pennsylvanica*)

Image credit: Joseph OBrien, USDA Forest Service, Bugwood.org



Autumn Purple variety of white ash (*F. americana*)

Image credit: T. Davis Sydnor, The Ohio State University, Bugwood.org

Identifying green vs white ash

- Fall foliage
 - **Green ash:** Foliage turns yellow-golden in the fall
 - **White ash:** Foliage of certain varieties, such as Autumn Purple, turns burgundy-



Green ash (*F. pennsylvanica*)

Image credit: Joseph OBrien, USDA Forest Service, Bugwood.org



Autumn Purple variety of white ash (*F. americana*)

Image credit: T. Davis Sydnor, The Ohio State University, Bugwood.org

Identifying green vs white ash

- Petiole length
 - **Green ash:** leaflets attached to main stem by relatively short petioles
 - **White ash:** leaflets attached to main stem by relatively long petioles



Foliage of green ash (*F. pennsylvanica*). Note the relatively short petioles attaching the leaflet to the stem (arrow).

Image credit: Derek, iNaturalist.com



Foliage of white ash (*F. americana*). Note the relatively long petioles attaching leaflets to the stem (arrow).

Image credit: Aaron Gunnar, iNaturalist

Identifying green vs white ash

- Seed length and shape
 - **Green ash:** Seeds are longer and more narrow
 - **White ash:** Seeds are shorter and stouter



The seeds of green ash are relatively long and narrow.
Image credit: Cwarneke, iNaturalist.com



The seeds of white ash (*F. americana*) are relatively short and stout. *Image credit: Zack Harris, iNaturalist*

References

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