

# Crack Willow

*Salix fragilis* L.

## Taxonomic Classification

**Domain:** *Eukaryotes*

**Kingdom:** *Plantae*

**Subkingdom:** *Tracheobionta*

**Super Division:**

*Spermatophyta*

**Division:** *Magnoliophyta*

**Class:** *Magnoliophyta*

**Subclass:** *Dilleniidae*

**Order:** *Salicales*

**Family:** *Salicaceae*

**Genus:** *Salix*

**Species:** *fragilis*

[1]



Female Flower [2]



Male Flower [3]



Female Tree [2]

## Botanical Description

Trees up to 20 meters tall. Trunks up to 1.3 m in diameter, bark is furrowed gray or black with age. Branches ascending and large. Branchlets spreading and not strongly pendulous; brittle. Leaf blades lanceolate (thin and long, much longer than wide) to narrow elliptic, 2.5–17 cm long, 10–32 mm wide; leaves serrate (saw-like), young leaves glaucous (covered with a waxy coating) on the underside, mature leaves glabrous (smooth and hairless). Petioles (leaf stalk) 7–20 mm long. Trees dioecious (each tree only bearing either male or female flowers); aments (flower clusters) appear with leaves and bloom in April– May. Capsule (fruit type) glabrous.

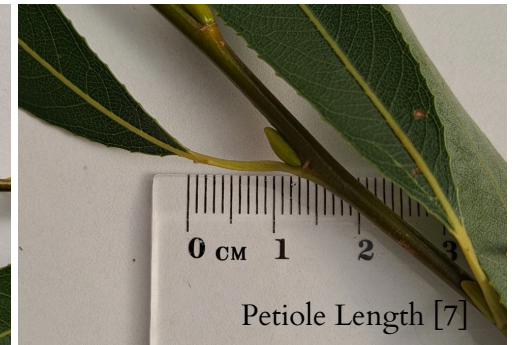
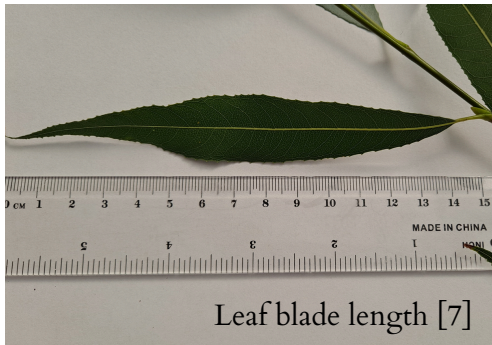
References: description [4] & [5], definitions [6]

# Identification Tips

The Crack Willow, *Salix fragilis*, is often mistaken for Peach Leaf Willow, *Salix amygdaloides*. To determine the difference, *S. fragilis* will not have free, overlapping scales, but rather a single cap-like scale whereas *S. amygdaloides* has overlapping bud scales. *Salix amygdaloides* leaves are also more almond shaped than they are slender (*amygdaloides* refers to almond shaped), 6 cm long and 2 cm wide. *Salix fragilis* leaves are 3–17 cm long and up to 3.5 cm wide. [4]

## Fun Fact!

The specific epithet, *fragilis*, refers to the fragile branchlets of the tree that are brittle and break off, hence the common name ‘crack’ willow. This trait can be used as an identification tool as they will snap easily [4], but please do not break off the twigs as it can damage the tree and make it susceptible to disease.

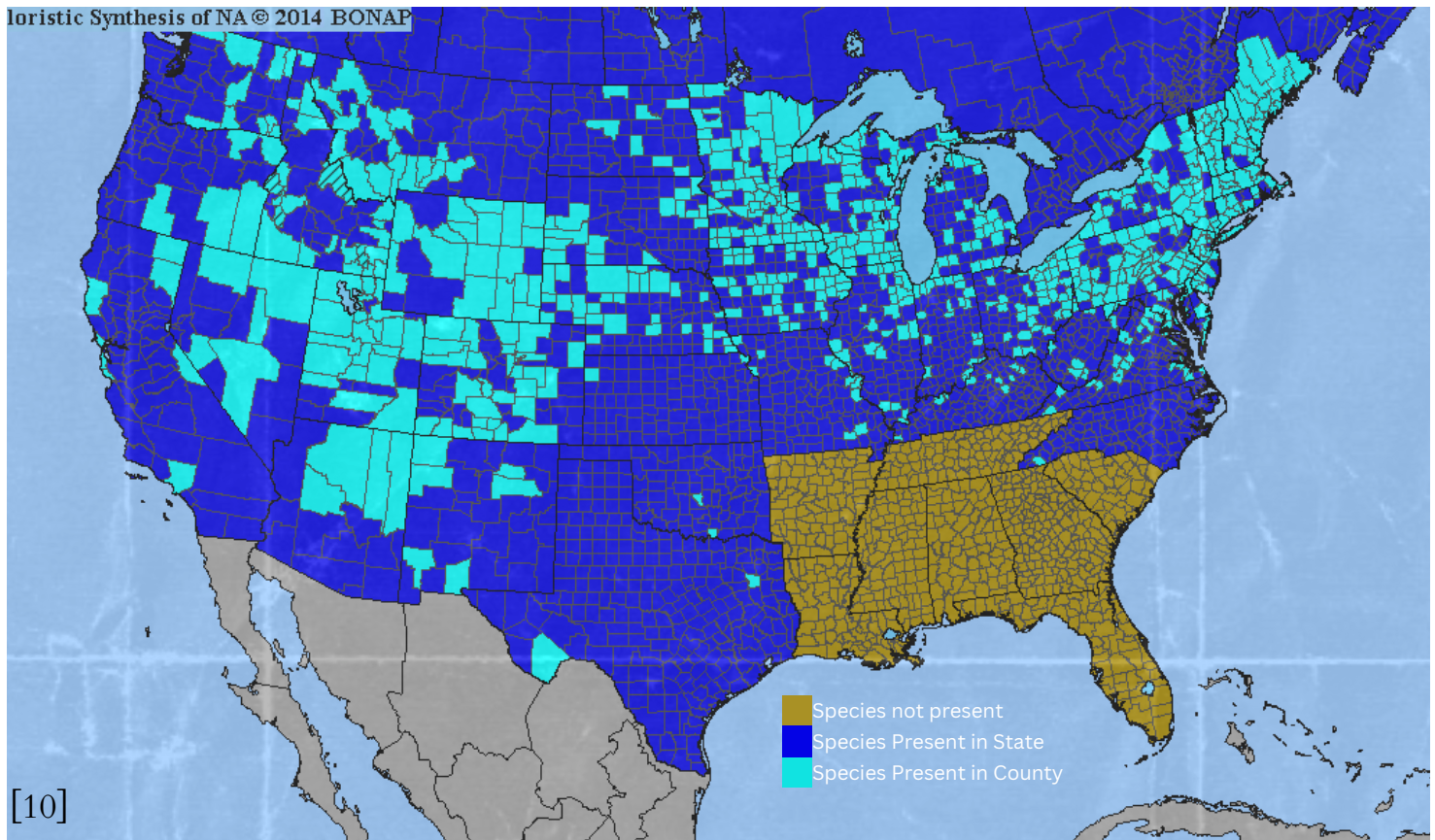


## Ethnobotanical and Other Uses

While the Crack Willow is used now mostly as an ornamental shade tree to cool and beautify our landscapes, the indigenous Ojibwa tribe would use the bark to make a pulp-like substance and applied it to open wounds as a blood-stopping agent and healing aid [8]. While the inner bark, leaves, and shoots are edible, it is not recommended as it is considered a famine food and are pretty bitter. Members of the genus *Salix* have differing concentrations of Salicin in their fresh bark; Salicin can decompose into Salicylic acid, which is what the medication Aspirin is based on [9]. Thus, many species of willow were used for pain medicine by indigenous peoples.

## Habitat Range





## Conservation Status

The Crack Willow is not native to the United States [11], but has escaped cultivation and become naturalized.

## Plant Ecology

*Salix fragilis* is found around creeks, rivers, lakes and other generally moist areas. This species can tolerate a large range of soil types (alkaline – acidic, and fertile– non fertile), as long as there is enough moisture readily available [11].

## References:

- [1] Moore, G., Goldman, D., Garland, M., Taliga, C., & Hinshaw, J. (2014b). *Salix fragilis* L. crack willow. USDA plants database. <https://plants.usda.gov/home/plantProfile?symbol=SAFR>
- [2] Baldonado, G. (2023) *Peachleaf Willow female, collection*. photograph.
- [3] Balonado, G. (2023) *Peachleaf Willow male, collection*. photograph.
- [4] Buren, R. V., Cooper, J. G., Shulz, L. M., & Harper, K. T. (2011). *Woody Plants of Utah: A field guide with identification keys to native and naturalized trees, shrubs, cacti, and vines*. Utah State University Press.
- [5] Welsh, S. L., Atwood, N. D., Goodrich, S., & Higgins, L. C. (2016). *A Utah flora* (Third). Monte L. Bean Life Science Museum.
- [6] Harris, J. G., & Harris, M. W. (2009). *Plant identification terminology: An illustrated glossary*. Spring Lake.

[7] Baum. A. L., *Salix fragilis identification* . (2023). photograph.

[8] Smith, Huron H., 1932, Ethnobotany of the Ojibwe Indians, Bulletin of the Public Museum of Milwaukee 4:327-525, page 388, Native American Ethnobotany DB.

[9] *Salix fragilis* L. Pfaf Plants For a Future Database. (2023). <https://pfaf.org/User/Plant.aspx?LatinName=Salix%2Bfragilis#:~:text=Medicinal%20Uses&text=The%20bark%20of%20this%20species,neuralgia%20and%20headache%5B238%5D>.

[10] *Salix X fragilis*. 2013 Bonap North American Plant Atlas. taxonmaps. (n.d).  
<http://bonap.net/NAPA/TaxonMaps/Genus/County/Salix>

[11] NOAA Great Lakes Environmental Research Laboratory. (n.d.). *NOAA National Center for Research on Aquatic Invasive Species (NCRAIS)*. Nonindigenous Aquatic Species. [https://nas.er.usgs.gov/queries/GreatLakes/FactSheet.aspx?Species\\_ID=2684](https://nas.er.usgs.gov/queries/GreatLakes/FactSheet.aspx?Species_ID=2684)

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