Which Willow?
Non-native gray willow (*Salix cinerea*)

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Willows, sal lows and osiers (*Salix*)

- **Salicaceae family**
- **Deciduous trees and shrubs**
- **Dioecious**
- **Upright catkins (aments)**
- **Insect pollinated, wind dispersed**
- **Winter buds = single scale**
- **Often prefer wet soils**
- **Species can be difficult to ID**

**Willow Forms**

Willow bud = one scale

Birch bud = many scales

Birch bud = many scales
Salix cinerea

ssp. oleifolia  
(S. atrocinerea)

ssp. cinerea  
(S. cinerea)
Both are non-native
Both are invasive
LUMPING IS OK HERE!
Salix cinerea: the problem

NY Invasiveness Ranking: 84.44
>80.00 = very high
Celastrus orbiculatus = 86.67

Seed dispersed by wind

Outcompetes / hybridize with native willows

Local extinction of native genotypes?

A+B=AB
Salix cinerea distribution

European willows (S. cinerea ssp. oleifolia and ssp. cinerea) and their hybrids with American willow
Salix cinerea habitat preferences

- Man-made or disturbed habitats
  - Fort Meadow Brook road edge

- Meadows and fields
  - Feeley Field-Landham Brook complex

- Shores of rivers, ponds or lakes
  - Callahan SP- Eagle Pond

- Flood plain/wetlands
  - Cranberry-Hop Brook complex
Identification: habit and bark

Tree or shrub, smooth gray-green bark, tears—doesn’t snap, wavy texture, raised ridges in wood
Caprea-type bud gradation = flower buds found between small vegetative buds, flower buds “clog” shape and angle out- buds slightly convex against the stem, bud and twig color vary- brown, green, red, twigs and buds may or may not have hairs
Leaves highly variable, more oval than lance-shaped, margin may be entire, serrate, or sharply toothed and rolled, lower surface hairy, hairs may be rusty in color, veins pronounced- visible at 3rd order, upper leaf surface dull gray or shining, leaf-shaped stipules
Identification: survey timing

Holds leaves late (through Nov/Dec) and flowers early (April) = easy fall and spring ID
Native alder often occupies the same habitat and can have fluted bark. Alders have drooping catkins and usually have iridescent bark with horizontal lenticels.
American hornbeam has the same fluted, wavy bark, but it’s in the birch family. Hornbeams have distinct fruit, buds with many scales, and lack “pimples” on the bark.
Native willows

Red outlined species = look most like *S. cinerea*
Native willows

Black willow = Tree willow with shreddy bark. Leaves green on underside, paired glands on petioles, long lance-shaped leaves. Twigs and branches break easily, don’t tear. River and pond edges

Pussy willow = Leaves glaucous (smooth, not hairy) and light colored underneath. Diamond pattern bark. Meadows, fields, wetland, river, and pond edges, ditches

Slender willow = somewhat longer petioles when compared to other willow species. Both white and red hairs on leaves, branches bend and tear, and don’t snap cleanly.

Red outlined species = look most like S. cinerea
Native willows

Red outlined species = look most like *S. cinerea*

*S. bebbiana*

*S. humilis*

*S. sericea*
Native willows

**S. bebbiana**

Bebbs willow = thick, impressed veins - like rusty willow. Often red winter branches and bud scales, alba-type bud gradation, first year branches pubescent, NO red-brown hairs on leaves.

**S. humilis**

Prairie willow = delicate shrub, white and reddish hairs on lower leaf surface - makes leaves appear grey.

**S. sericea**

Silky willow = silky white hairs on leaves, branches break clean cleanly.

Red outlined species = look most like *S. cinerea*

Found in calcium rich wetlands-fens, ridges or ledges, shores of rivers, lakes or swamps.
Salix cinerea management

- Are there willows present?
- Can invasive sp. be removed without major soil disturbance?
- Is replanting needed?
- What plants should be selected?
Salix cinerea management

Hand pulling
Digging, weed wrenching, etc.
Foliar spraying
Frill application
Inject
Cut and paint

Low impact, aquatic safe herbicides
Surfactants, dyes

Most projects need WPA and EPA review/permitting
Special thanks to Ted Elliman and Irina Kadis

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Additional information and pictures can be found at

www.salicicola.com
Conserving and promoting the region’s native plants to ensure healthy, biologically diverse landscapes

www.newenglandwild.org