

A Riparian Planting Primer

Thick buffers of native trees, shrubs, and grasses along streambanks are essential to water quality and to the health of small brooks, lakes, and large rivers. They shade and cool surface waters, filter runoff from developed areas, and provide shelter, forage, and food for wildlife. Their root systems hold streambanks secure - preventing excess erosion, they protect groundwater and absorb flood waters.

Locally native riparian plants are also essential to the delicate and diverse habitats of our watershed. Over hundreds of years, they have grown up in the patterns of climate, light, and soil conditions of our region, adapting to the natural disturbances, frost and thaw cycles, insect damage, animal browse, and ice specific to our region. Further, they've evolved and become interdependent with the other plants, animals, insects, and fungi, and these very complex relationships keep the Ausable ecosystem healthy and stable.

In the ten years since Hurricane Irene, we've planted thousands of trees and hundreds of acres of grasses and shrubs along the river. We've learned many lessons along the way about the importance of healthy riparian buffers and how to build them up from scratch. Here are a few tips for establishing a riparian buffer of your own.

Top 4 Performing Nursery Trees/Shrubs

Red-osier dogwood *Cornus sericea* AND **Silky dogwood** *Cornus amomum* spp. *amomum*

Dogwoods are attractive and grow thickly which can help create wildlife habitat. Both Silky and Red-osier dogwoods are native and appropriate for riparian areas in this region. They grow up to ten feet tall, with roots that grow at least 16 inches deep, and both species provide fruit for birds. Red-osier dogwood prefers wet meadows, thickets, edges of dry upland forests, fens, marshes, swamps, stream banks, lake shores, and riverbanks. It is commonly observed along sandy flat sections of the West Branch Ausable River between Ausable Forks and Lake Placid and seems to withstand catastrophic disturbances. These species are found in nearly all counties in New York State and are both available from regional nurseries.

Speckled alder *Alnus incana* ssp. *rugosa*

Speckled alder is a native shrub of eastern North America that ranges from Virginia to Quebec and westward to Saskatchewan. This is a facultative wetland plant that grows in dense thickets along drainage channels, edges of streams, edges of lakes, fens, bogs, marshes, and forested swamps. It is a common wetland shrub that is available from regional nurseries.

Silky willow *Salix sericea*

Silky willow is a tall shrub native to eastern North America that ranges from Georgia to Quebec and westward to the Mississippi. It almost always occurs in wetlands and is found in most counties in New York State and prefers sandy, gravelly or cobbly river and lake shores in New England. Note that this species is not usually available from nurseries where willows are either horticultural varieties or generalized as “shrub willow, *Salix* spp.”, though it may be available in the form of live stakes.

Other species that do well in the Ausable watershed include **Gray birch** *Betula populifolia* and **Red maple** *Acer rubrum* var. *rubrum*.

Top 4 Native Tree/Shrub (not readily available from nurseries)

Bebb’s willow *Salix bebbiana*

Bebb’s willow is a native tall shrub of North America with more of a northern distribution than *S. sericea*, ranging from Maryland to Nunavut in northern Canada and westward to the Pacific Ocean. This species is a wetland plant that likes swamps, rich fens, wet thickets, wet successional fields, roadsides, ditches, marshes, vernal pools, and edges of lakes and stream. It can also tolerate dryer settings than silky willow. Similarly to *S. sericea*, this northern species is not readily available from regional nurseries.

American witch-hazel *Hamamelis virginiana*

Another suitable species for wildlife habitat, witch hazel offers nuts as a food source in fall and dense growth for habitat through the growing season. American witch-hazel can grow up to 16 feet tall and put roots down at least 20 inches into the streambank. This species does best in moist woods and brushy fields and is moderately shade tolerant. Through much of Keene, witch hazel can be found growing as an understory tree along the East Branch Ausable River.

Other species that do well in the Ausable watershed include **Meadow willow** *Salix petiolaris* and **American hophornbeam** *Ostrya virginiana*

Flowering plants and grasses

In 2020, Ausable River Association staff curated a custom riparian seed mix: Ausable Upland Riparian Plant mix. It includes the most abundant and hardy herbaceous plants identified after years of research.

Canada bluejoint *Calamagrostis canadensis*, also known as Canada reed grass, is found in wet meadows and swamps, and can grow up to 6 feet tall with root systems nearing 16 inches. This species is wildlife friendly and can provide food and cover for deer, moose, and muskrat.

Soft Rush *Juncus effusus* is a bunching rush species that can grow in and near water and moist floodplains. A good food source for waterfowl and songbirds and habitat for small fish. This rush can grow up to 7 feet tall.

Path Rush *Juncus tenuis* is another bunch-type rush that grows up to 3 feet tall in moist to dry, and heavily disturbed soils. This rush can tolerate foot traffic and serves as good nest material for songbirds.

Tussock sedge *Carex stricta* forms tussocks of grass in swamps, wet meadows, and stream banks. It provides good habitat for turtles as well as food for other wildlife and can grow up to 5 feet tall.

Sensitive fern *Onoclea sensibilis* is a fern that can provide good cover for frogs and salamanders, and loves wet meadows, swamps, and moist open floodplain forest.

Spotted Joe pye-weed *Eutrochium maculatum* is a flowering perennial plant that is readily available as seed or in pots from conservation nurseries. This flower blooms from late summer to fall and grows best on wet streambanks, floodplains, and swampy areas, and is a good food source for pollinators.

If you're interested in placing an order of the Ausable Upland Riparian Plant Mix (1 lb. minimum), please contact cpershyn@ausableriver.org.

Some regional native plant nurseries

Intervale Conservation Nursery *Burlington, VT*

NYSDEC Tree Nursery *Saratoga Springs, NY*

Flowering Meadow Nursery *Jay, NY*

Ernst Conservation Seeds *Meadville, PA*

Vermont Wetland Plant Supply *Orwell, VT*

Top 3 Tips for Successful Riparian Tree Planting Projects

Look to locally established riparian habitats for guidance.

The first step in preparing for a successful riparian planting is to know your site. Take the time to identify existing vegetation on and near banks. Use field guides, mobile apps, or contact the Ausable River Association or your local garden club for help conducting a quick survey to determine what native species are established already. This will inform the species you choose to plant and provide your best chance of success. If the site you are working with has been denuded by flooding, ice, or other disturbance, look to nearby vegetated sites that are similar in topography and land use and are recovering from disturbance. The species growing well in these habitats may be ideal choices for your planting project.

Source NATIVE seeds, trees, and shrubs as locally as possible.

We've learned that native trees and shrubs, and even flowering plants, are adapted to local microclimates. Plants with locally adapted genetics will therefore be more suitable for and

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successful in local planting projects. Plants procured from catalogs or distant nurseries will likely take more time to get strong root systems established as a result. When planning planting projects, think about sourcing your planting material as locally as possible. Make sure to ask whether the plants are native, or better yet, come to the nursery with a list of native species you are interested in.

Caring for plants during their most vulnerable stages will aid in establishment of healthy roots.

In the first few weeks and months after planting, riparian trees and shrubs will be at their most vulnerable. After harvest from the nursery, transport, and time taken to plant these trees, the root systems will be especially susceptible to dry and hot conditions. Further, both fall and spring plantings are susceptible to having their leaves and buds browsed by deer and other animals. In some areas, deer exclusion fencing would benefit young trees in their first 3-5 years after planting. To enhance the chances for success of new trees, we've employed watering and tree tubes at our sites.