onondaga creek

CONCEPTUAL REVITALIZATION PLAN

appendix J: SUNY ESF Flora and Fauna Lists

Onondaga Environmental Institute

Some Common Streamside Plants of Onondaga Creek

TREES

Common Name	Origin	Scientific Name	Family
eastern cottonwood	N	*Populus deltoides*	willow
crack willow	I	*Salix fragilis*	willow
black willow	N	*Salix nigra*	willow
silver maple	N	*Acer saccharinum*	maple
boxelder	N	*Acer negundo*	maple
American sycamore	N	*Platanus occidentalis*	plane-tree
black walnut	N	*Juglans nigra*	walnut
green ash	N	*Fraxinus pennsylvanica*	olive
American elm	N	*Ulmus americana*	elm

SHRUBS

basket willow	I	*Salix purpurea*	willow
diamond willow	N	*Salix eriocephala*	willow
pussy willow	N	*Salix discolor*	willow
speckled alder	N	*Alnus rugosa*	birch
red-stem dogwood	N	*Cornus sericea*	dogwood
silky dogwood	N	*Cornus amomum*	dogwood
purple-flowering raspberry	N	*Rubus odorata*	rose
spicebush	N	*Lindera benzoin*	laurel
black raspberry	N	*Rubus occidentalis*	rose

VINES

wild grape	N	*Vitis riparia*	grape
Virginia creeper	N	*Parthenocissus quinquefolia*	grape
poison ivy	N	*Toxicodendron radicans*	sumac

WILDFLOWERS

narrow-leaf cattail	N	*Typha angustifolia*	cattail
great blue lobelia	N	*Lobelia siphilitica*	bluebell
spotted jewelweed	N	*Impatiens capensis*	touch-me-not
white vervain	N	*Verbena urticifolia*	vervain
bird’s foot trefoil	I	*Lotus corniculatus*	pea
swamp milkweed	N	*Asclepias incarnata*	milkweed
Indian hemp	N	*Apocynum cannibinum*	dogbane
spotted joe pye weed	N	*Eupatorium maculatum*	aster
white snakeroot	N	*Eupatorium rugosum*	aster

GRASSES and grass-like plants

Common Name		Scientific Name	Family
tall fescue	I	*Festuca arundinacea*	grass
sedge	N	*Carex* spp.	sedge
green bulrush	N	*Scirpus atrovirens*	sedge

Origin: N native to NYS
n native to North America
I introduced to North America from Europe, Africa, or Asia

Plant Communities: Onondaga Creek

Plant communities along Onondaga Creek reflect the changes in soils, topography, human uses, and flood regimes as the creek flows through the glacially-formed valleys of the region. For example, the concretized channel walls of the city creek support little besides a few nitrogen-loving mosses, boxelder (*Acer negundo*), European buckthorn (*Rhamnus cathartica*), Norway maple (*Acer platanoides*), and various herbs sprouting from the margins. Along sections of grass-lined channel, periodic mowing limits the streamside communities to mainly grasses and old-field plants.

In contrast, more natural areas of the watershed support floodplain forests of green ash (*Fraxinus pennsylvanica*), eastern cottonwood (*Populus deltoides*), sycamore (*Platanus occidentalis*), silver maple (Acer saccharinum), and willows (*Salix* spp.). Silky and red osier dogwoods (*Cornus amomum, C. stolonifera*), black elderberry (*Sambucus canadensis*), spicebush (*Lindera benzoin*) are among the shrubs that occupy this floodplain area. Other plants include cattails (*Typha* spp.), *Iris*, jewelweed (*Impatiens capensis*), beggarticks (*Bidens* spp.), joe-pye weed (*Eupatorium maculatum*), boneset (*Eupatorium perfoliatum*), various sedges (*Carex* spp.) and rushes (Juncaceae).

Such wetland communities were typical of Onondaga Creek before European settlement. Since that time, about 80% of these original *riparian* (streamside) wetlands have been lost (M. Hall, pers. comm.). Restoring Onondaga Creek includes the restoration of these wetlands and the many benefits they provide.

Plants in the City

Creek habitat through the city of Syracuse has been radically altered for development. Virtually all wetlands associated with Onondaga Creek have been drained, and the Creek confined to a narrow, incised channel. In places, however, especially where the channel walls are lined with grasses (and not with concrete or stone), space remains for a greater breadth of plant life.

The plant communities here are typical of city streams where an engineered watercourse has lowered the water table and severed the connection between the stream and its floodplain. That is, the stream is incised so low that it no longer overtops its banks and bathes its floodplain. Such a pattern of seasonally high flows is typical of natural riparian ecosystems and helps them to thrive by delivering water, nutrients, sediments, seeds and woody debris.

Woodlands along the stream in the city support a mix of upland species as well as horticultural plants that have “escaped” from gardens and manicured properties. Some riparian species such as boxelder occur here as well as in more natural stream reaches. In such a disturbed habitat, invasive species are easy to find: Norway maple, European buckthorn, honeysuckles (*Lonicera* spp.), garlic mustard (*Alliaria petiolata*), and pale swallow-wort (*Vincetoxicum rossicum*), to name a few. Riparian species that all but disappear from the city reaches include spicebush, elderberry, and most wetland plants.

Life in the country: rural sections

More rural sections of Onondaga Creek support a mosaic of wetlands with differing water regimes, microtopography, soils, and water chemistry. The remains of old cedar swamps on calcareous soils can be found. Agriculture, a golf course and some residential development probably contribute nutrients to the stream, while mudboils appear to increase dissolved salts. These releases affect plant communities in turn. Many of the same invasive plants found in urban reaches occur throughout disturbed rural reaches of the stream.

Role of Plants in the Watershed
Plants provide shade, beauty, privacy, protection from weather, food for humans; and homes, roost sites, food, for bats, birds, and other vertebrates as well as invertebrates both in the water and on land.

Plants also play a critical watershed role. A tree's vast spread of twig, leaf, bole, and stem represents a *surface area* that can intercept rainfall and reduce or slow the amount of storm water (runoff) reaching streams. High rates of *evapotranspiration* also draw up water, return it to the atmosphere, reducing chances of flooding. Water can *infiltrate* porous woodland soils more readily than through concrete or lawns. Forested watersheds seldom experience floods, because of the role plants play maintaining a balanced water cycle.

Of special importance are the plants growing along the stream in the riparian zone. This vegetation provides numerous benefits including shade and cover for fisheries, stream nutrient input, habitat for birds, sediment filtration, nitrate uptake (water quality benefits), bank stabilization, and others. The wider the band of riparian forest, the better. Ideally these forests consist of unbroken, natural vegetation, not park-like plantings. Native species are preferred due to their superior aesthetics and ecological function.

In cities, wetlands are drained, forests cleared for streets, lawns, parking lots—"infrastructure." This change has profound effects on local water cycling. The amount of runoff increases sharply and with it, soil erosion, and the risk of floods. Runoff also carries with it such pollutants as road salt, lawn chemicals, oils from pavement. Re-establishing urban forests and wetlands can help to protect the landscape and city streams such as Onondaga Creek.

Such woodlands can reduce the amount of runoff, helping to make it possible to restore aquatic habitat and ecosystem links. Restoration goals for Onondaga Creek include stabilizing the local water cycle—reducing the "flashy" flows typical of an urban stream—by means of urban forestry, urban wetlands, riparian buffers, rain gardens, and other plant-based solutions.

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BIRDS Onondaga Creek

City sections *(from Dorwin Ave. bridge north to Spencer St. bridge)*

Some of these birds nest along the stream; others only pass through during migration or on forays for food and shelter.

great blue heron
green heron
Canada goose
green-winged teal
mallard
common merganser
hooded merganser
turkey vulture
osprey
Cooper's hawk
sharp-shinned hawk
red-tailed hawk
killdeer
spotted sandpiper
ring-billed gull
herring gull
rock dove
mourning dove
yellow-billed cuckoo
belted kingfisher
chimney swift
downy woodpecker
northern (yellow-shafted) flicker
hairy woodpecker
yellow-bellied sapsucker
red-bellied woodpecker
willow flycatcher
alder flycatcher
least flycatcher
eastern phoebe
eastern wood pewee
great crested flycatcher
northern rough-winged swallow
barn swallow
tree swallow
American crow
blue jay
black-capped chickadee
tufted titmouse
white breasted nuthatch
house wren
Carolina wren
golden-crowned kinglet
ruby-crowned kinglet
American robin
wood thrush
veery
gray catbird
northern mockingbird
European starling
cedar waxwing
red-eyed vireo
warbling vireo
yellow-rumped warbler
yellow warbler
blackpoll warbler
chestnut-sided warbler
black-throated green warbler
Nashville warbler
magnolia warbler
northern parula
common yellowthroat
scarlet tanager
northern cardinal
house sparrow
song sparrow
dark-eyed junco
white-throated sparrow
chipping sparrow
rose-breasted grosbeak
rufous-sided towhee
red-winged blackbird
common grackle
brown-headed cowbird
northern oriole
house finch
American goldfinch

Note: This bird list is a work in progress. We welcome your help in making this list as complete as possible! Please send an email with your sightings, nest reports, or questions about this list to cllandis@syr.edu or leave a message at 470-4866.

Thank you,
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Highly Invasive Plant Species: Onondaga Creek Corridor

Common Name	Scientific Name	Family
garlic mustard	*Alliaria petiolata*	mustard
dame's rocket	*Hesperis matronalis*	mustard
tartarican honeysuckle	*Lonicera tatarica*	honeysuckle
Japanese honeysuckle	*Lonicera japonica*	honeysuckle
purple loosestrife	*Lythrum salicaria*	loosestrife
Norway maple	*Acer platanoides*	maple
tree of heaven	*Ailanthus altissima*	quassia
bishop's goutweed	*Aegopodium podagraria*	parsley
pale swallow-wort	*Vincetoxicum rossicum*	milkweed
European buckthorn	*Rhamnus cathartica*	buckthorn
black locust	*Robinia pseudoacacia*	pea
multiflora rose	*Rosa multiflora*	rose
Japanese knotweed	*Polygonum cuspidatum*	buckwheat
common reed	*Phragmites australis*	grass
reed canary grass	*Phalaris arundinacea*	grass