Development and Planning.

Trees

Common Name/Genus-species	Height
Basswood/*Tilia americana*	60′-80′
Black Willow/*Salix nigra*	30′-50′
Green Ash/*Fraxinus pennsylvanica*	50′-60′
Quaking Aspen/*Populus tremuloides*	40′-50′
Swamp White Oak/*Quercus bicolor*	50′60′
White Ash/*Fraxinus americana*	50′-60′
White Cedar/*Thuja occidentalis*	20′-30′

Shrubs

Common Name/Genus-species	Height
Buttonbush/*Cephalanthus occidentalis*	4′-8′
Eastern Ninebark/*Physocarpus opulifolious*	5′-9′
Elderberry/*Sambucus canadensis*	5′-12′
Indigo Bush / *Amorpha fruticosa*	6′-12′
Nannyberry Viburnum/*Viburnum lentago*	15′-20′
Red Osier Dogwood/*Cornus stolonifera*	7′-9′
Silky Dogwood / *Cornus obliqua*	10′+

Shade Tolerant Wet Forest Plants

Common Name/Genus-species	Height
Cardinal Flower/*Lobelia cardinalis*	2′-4′
Green Dragon/*Arisaema dracontium*	8″-1′
Jack-in-the-Pulpit/*Arisaema triphyllum*	8″-1′
Ostrich Fern/*Pteretis pennsylvanica*	2′-3′
Solomon's Seal/*Polygonatum canaliculatum*	1′-2′
Shooting Star/*Dodecatheon media*	8″-1′
Spotted Jewelweed/*Impatiens capensis*	2′-4′
Swamp Buttercup/*Ranunculus septentrionalis*	1′-2′
Turtlehead/*Chelone glabra*	2′-3′
Virginia Bluebells/*Mertensia virginica*	8″-1′

Sun Tolerant Shallow Water to Moist Soil Plants

Common Name/Genus-species	Height
Arrowhead/*Sagittaria latifolia*	1′-2′
Bur Reed / *Sparganium eurycarpum*	3′+
Chairmaker's Rush / *Scirpus americanus*	3′+
Dark Green Rush/*Scirpus atrovirens*	3′+
Pickerel Weed / *Pontederia cordata*	1′-3′
River Bulrush/*Scirpus fluviatilis*	3′-5′
Sweet Flag/*Acorus calamus*	3′-5′
Water Plantain/*Alisma subcordatum*	1′-2′

Sun Tolerant Damp Shore, Wet Prairie Grasses and Forbs

Common Name/Genus-species	Height
Big Bluestem/*Andropogon gerardii*	3′-8′
Bluejoint Grass/*Calamagrostis canadensis*	2′-4′
Switch Grass/*Panicum virgatum*	3′-8′
Indian Grass/*Sorghastrum nutans*	4′-8′
Prairie Cord Grass/*Spartina pectinata*	3′-6′
Blue Flag Iris/*Iris virginica*	2′-3′
Culvers Root/*Veronicastrum virginicum*	3′-5′
Joe-Pye Weed/*Eupatorium maculatum*	2′-6′
Golden Alexander/*Zizia aurea*	3′-5′
Spiderwort/*Tradescantia ohiensis*	1′-3′
Swamp Milkweed/*Asclepias incarnata*	4′-5′

It is always important to develop a stabilization plan that will prevent erosion without impacting landowners up or down stream of the project. Most work of this kind requires a permit from municipal, county and federal agencies. For these reasons, working with a professional engineer and environmental specialists is recommended. A list of firms familiar with DuPage County regulations is available upon request.

In cases of severe streambank erosion where stream corridor landscaping has failed, bioengineering may be necessary. Engineering techniques along with biological expertise are combined to control the erosion of streambanks. Engineering considerations include the hydraulics of the flow and the structural integrity of the banks. Biological considerations include stabilizing vegetation, discussed previously.

These techniques were designed specifically to reduce erosion and maintain a more natural stream without increasing flow or velocity. They protect both the natural beauty of the stream and the valuable properties alongside it. Streambanks stabilized with these methods have withstood heavy spring floods and other severe conditions.

Structures, such as coir rolls, a-jacks and soil lifts are installed at the toe of eroding banks. Restoration involves a small work crew and specialized equipment and machines that limit damage to surrounding property. Imbedded among the structures are native plantings and fast-rooting trees whose natural habitat is at the waters edge. Their roots bind and strengthen the banks as they grow. Finally, the banks are sloped, contoured, and planted with other native water-loving vegetation.

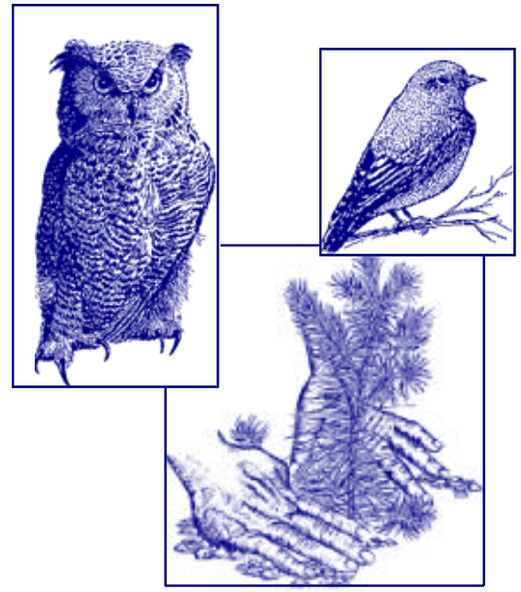
For more information, contact:
DuPage County Department of Economic Development and Planning
(630) 407-6700
Forest Preserve District of DuPage County
(630) 933-7200
Illinois Department of Natural Resources
(847) 608-3100
Kane-DuPage Soil & Water Conservation District
(630) 584-7961
U.S. Fish & Wildlife Service
(847) 381-2253

For more information on yard waste disposal, contact your local municipality,

For more information, please contact:
DuPage County
Department of Economic Development and Planning
Division of Environmental Concerns
421 N. County Farm Rd.
Wheaton, IL 60187
Phone: 630-407-6700
Fax: 630-407-6702
Website: http://www.dupageco.org/edp/

Front Illustrations: Great Horned Owl - Robert Savannah/USFWS
Plant a Tree - Tom Kelley/USFWS
Pine Warbler - Robert Savannah/USFWS

Streambank Stabilization in DuPage County



DuPage County
Department of Economic Development and Planning
Division of Environmental Concerns

How has urbanization affected natural stream movement?

Frog
Karen J. Couch/USFWS

As a stream matures, it naturally changes its course and meanders. Water wears away the soil and rock that form the banks and deposit it downstream over the course of hundreds of years. With the creation of drainage ditches, straightened streams, and storm sewers, water is more efficiently routed into local streams. However, these changes cause the speed and velocity of stream flows to increase, particularly after heavy rainfall events. As more paved surfaces are constructed, rainwater can no longer seep into the ground naturally, causing the water to flow more rapidly into streams and resulting in erosion and cut banks. This process can have significant impacts on the property if the proper preventative measures are not taken.

What can I do to help maintain a stream on my property?

DuPage County has a countywide stream maintenance program, the goal of which is to reduce flood damages associated with debris jams and to restore the natural flood storage and movement of the streams. This program is in addition to the responsibilities of the owner of the property to maintain their section of stream (i.e. removal of debris and blockages). Periodic maintenance to prevent debris jams from accumulating is the best approach.

How can I help prevent debris jams?

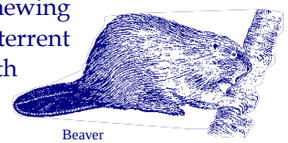
While some debris is naturally occurring, like leaves or branches, some materials, such as tires or plastic bags, become detrimental to the stream ecosystem. In addition, some landowners store potential debris, including scrap lumber, firewood, or leaf piles in streamside areas where it may be washed into the stream during times of peak flow. When this debris is allowed to build up, it can cause jams, which can restrict the water flow and increase water levels. This leads to further erosion of the streambank and possible flooding during heavy rains.

Many people illegally dispose of yard waste in their streams. This is not recommended and strictly prohibited by law for several reasons. Piled grass clippings kill off underlying vegetation that could otherwise help stabilize the streambank. When these nutrient-rich clippings enter the water, they can cause algae growth, odor issues, and reduce the amount of oxygen in the water, killing fish and other aquatic organisms. In addition, placing woody brush into or near a stream sets the stage for debris jams to occur, often resulting in localized flooding.

If yard waste is disposed of illegally on a streambank, the landowner will be asked to remove the debris and may be subject to a fine. Many units of government now offer assistance in the disposal of yard waste. For more information please contact your municipality, township, or DuPage County.

How do I discourage beavers?

Beavers have returned to many of the streams in DuPage County. Most landowners may not even realize a beaver is present, because of their nocturnal habits, until a tree on their property is felled or a beaver dam begins backing water onto their property. If the only problem is tree loss, a home owner can wrap the base of trees with hardware cloth to prevent the beaver from chewing on the tree. Another deterrent is spraying the bark with an offensive tasting repellent, which discourages the beaver from chewing.



Beaver
Robert Savannah/USFWS

What do I do if the banks of my stream are eroding?

Many past attempts to stabilize eroded streambanks have failed and often result in adverse effects on neighboring properties as well. Before any streambank stabilization project is initiated the property owner should seek professional guidance on stabilization techniques and the need for floodplain and wetland permits.

Stream corridor landscaping is an effective step property owners can take to slow down the rate of erosion. The use of vegetation, rather than concrete, rock, or wooden ties, as the primary means of stabilizing an eroded streambank is usually a cost-effective alternative. By reintroducing native species of trees, shrubs, wildflowers, and grasses along DuPage County streams, a living system of stabilization will be created.

Property owners should leave a buffer zone of at least 5 to 10 feet between their mowed lawns and the stream. This buffer zone should consist of taller grasses and native plants. This will help reduce erosion, filter out harmful lawn chemicals, and improve wildlife habitat.

Many native plants along DuPage County streams have been crowded out by aggressive, non-native species, or exotics. Native plants are better adapted to the local climate and generally have deeper, more extensive root systems. This is an important factor since plant roots help to stabilize streambanks. When native species are present in sufficient quantities, they can provide significant erosion control benefits. These visually attractive plant communities also offer a wide variety of species that provide food and habitat for wildlife and improved water quality. Please remember that any removal of vegetation or grading activity in or near a floodplain or wetland may require a permit from DuPage County. Please see contact information on reverse side.

The first step in restoring an eroded streambank with native vegetation is to remove the undesirable vegetation to allow more sunlight to reach the ground. Additional sunlight will allow native species to successfully re-establish. Remove the undesirable vegetation by cutting it flush to the ground and treating the stumps with a chemical herbicide. Removing the main roots or stumps is discouraged as it will destabilize the streambank and accelerate erosion. It is important to replace some of the woody plants that are removed with more desirable woody species to avoid major disturbances in wildlife habitat and other riparian functions.

The following is a list of undesirable plant species commonly found in DuPage County:

Tree-(T); Shrub-(S); Grass-(G); Ground Cover-(GC)

Common Name/*Genus-species*	**Height**
Common Buckthorn/*Rhamnus cathartica*-(S/T)	18′-25′
Giant Reed / *Phragmites australis*-(G)	10′-12′
Glossy Buckthorn/*Rhamnus frangula*-(T)	10′-18′
Multiflora Rose/*Rosa multiflora*-(S)	10′-12′
Tartarian Honeysuckle/*Lonicera tatarica*-(S)	10′-12′
Reed Canary Grass/*Phalaris arundinacea*-(G)	3′-4′
Garlic Mustard/*Allilaria officinalis*-(GC)	18″-2′
Purple Loosestrife/*Lythrum salcaria*-(GC)	3′-6′

Biodegradable herbicides are available that are safe for use near streams and may require a license for application. Once the undesirable species have been controlled, native plants can be reintroduced. The following is a list of native plant species generally available from local nurseries. A more extensive list is available from the DuPage County Department of Economic