Maintaining Ravine and Bluff Vegetation

A Guide to Responsible Land Management for Property Owners and Landscape Professionals

Introduction

The ravine and bluff ecosystems near the lakeshore of Highland Park are unique and fragile landscapes which require management strategies considerate of their high ecological and aesthetic value. Thoughtful stewardship of these landscapes is the responsibility of each property owner and landscape professional who undertakes their maintenance or modification. Over the years, many north shore ravines and bluffs have received little or poor maintenance which has resulted in an influx of invasive species, a decrease in slope stability, a loss of native plant diversity, and a decline in wildlife habitat. By following the guidelines in this brochure, property owners can avoid common mistakes that degrade slope stability while enhancing property aesthetics and preserving these important natural resources. Please share this information with those who care for your ravine or bluff property.

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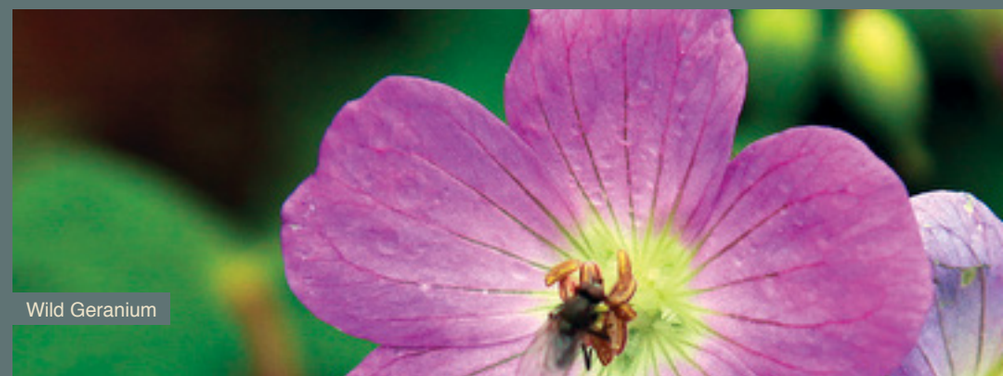
An Overview of the Management Process

Though each landscape is unique, all successful vegetative management projects start with a common process. If you are considering any removal or modification of vegetation on your ravine or bluff slope, follow the steps outlined below to ensure your project is properly planned, permitted, and executed:

1. Survey existing site resources
2. Develop a management plan
3. Determine if permits are required to complete work
4. Remove invasive, dead, dying, diseased, and hazardous plant species first
5. Consider removing low quality and aggressive species
6. Replant beneficial native species
7. Maintain your slope with continued monitoring and invasive species removal



Wild Geranium

Your Management Toolkit

Hepatica

The best management practices outlined below are the tools you need to get your project done right. These are proven techniques that you will need to successfully manage vegetation on your ravine or bluff slope.

Site Surveying and Planning

are critical first steps in managing your ravine and bluff slopes. Develop a management plan that identifies existing natural resources and outlines your proposed actions for maintenance and modification. The level of detail required will depend on the scope of your project but should include, at a minimum, a complete survey of existing trees, shrubs, herbaceous vegetation (flowering plants and grasses), and significant topographical and hydrological features within and adjacent to your project area. Clearly identify your management goals, and describe the proposed means and methods of accomplishing them. A well developed plan should answer the following questions:

- What plant species do you want to remove or modify?
- What species are important to protect?
- What species will you be planting to enhance diversity or to replace those removed?
- How will you or your contractor access the project area and dispose of any waste generated from the project?
- What is your proposed timeline for implementation?
- Will your actions require follow-up monitoring or maintenance?

If your project is limited to a small area or a few targeted management actions, you may be able to develop a management plan on your own. Larger or more complex projects may require consultation with an ecologist, landscape architect, or land management professional familiar with ravine and bluff ecosystems. Please contact the City Forester for plan requirements and resources available to assist you in developing a plan for your project, including a list of *Select Native Plants for Restoration* and a *Guide to Timing for Restoration Practices.*

The following management actions do not require a permit:

- Seasonal collection of leaves
- Prescribed burning with HPFD approval
- Pruning of shrubs
- Control of invasive herbaceous plants
- Tree pruning in accordance with International Society of Arboriculture standards
- Removal of fallen dead woody debris
- Removal of Buckthorn with stump treatment (no stump removal).
- Planting of native trees, shrubs, or other plant material.

Restoring native plants to bare soil areas will increase soil stability, reduce surface runoff and beautify property.

Permits and Special Conditions

Before undertaking any landscape work on steep slopes, contact the City Forester to review your plans and ensure that you obtain the proper permits. In order to protect these fragile ecosystems, the City of Highland Park has implemented specific permitting and building regulations that affect allowable management practices. These regulations can be found in *Article VII, Section 150.703.1 Special Regulations for the LFOZ Lakefront Density and Character Overlay Zone,* and *Article XIX, Steep Slope Zone* of the City's zoning code, both available through the City's website, www.cityhpil.com. These regulations include general restrictions on work on ravine and bluff slopes which protect existing soil and plant resources.

- Tree and shrub removal on ravine and bluff slopes requires a permit and may be allowed under certain conditions as defined in City code. Fees may apply for removal of species other than those that are dead, dying, diseased or hazardous or defined as invasive in the City's *Steep Slope Tree and Shrub Removal Guidelines*. In some cases, a replacement plan will be required.
- All work on steep slopes should avoid compacting, rutting, pitting, or disturbing soils and adjacent desirable vegetation. This may require work to occur while ground is frozen, and may restrict use of tracked or rubber tired equipment on slopes.
- All logs, branches, and organic debris generated from vegetative management actions should be removed from the slope and properly disposed of. No landscape debris may be piled or allowed to accumulate on ravine and bluff slopes at any time. **Fallen leaves from yards must not be deposited on ravine or bluff slopes**.

Tree Removal and Pruning

is often an essential step toward increasing light levels on the ground, which can support healthy growth of native grasses and wildflowers that prevent soil erosion. Management plans should consider the following when proposing tree removal:

- Primary targets for removal should include dead, dying, diseased, hazardous, and trees defined as invasive in the *Steep Slope Tree and Shrub Removal Guidelines.*
- Canopy coverage should range between 40-60%, allowing for adequate sunlight levels to support flowering plants and grasses on the ground while maintaining a landscape dominated by mature trees.
- Trees on the protected species list may be considered for limited removal if canopy coverage goals cannot otherwise be met. Removal of key species is generally not allowed.
- Removal goals should promote locally appropriate native trees in a variety of size classes.
- Trees should be cut flush with the soil surface with stumps and root systems left intact.
- Prune trees according to ANSI A300 standards to ensure long-term tree health and aesthetic quality –topping trees is not allowed.

Buckthorn and other invasive species create shade *(left)* that prevents native plants from flourishing *(right).*

What Does a Healthy Ravine Look Like?

It is hard to generalize about the north shore ravines and bluffs. These ecosystems are highly variable. Factors such as steepness, aspect (which way they face), and how much sunlight and moisture they receive create differences at every turn. That is why it is necessary to consult with the City Forester when work on the slopes is planned.

This illustration shows the three levels of vegetation that should be considered in a management plan: a tree canopy of varying age and type, a shrub understory that includes native small trees and a groundcover of wildflowers, sedges and grasses that is protected and encouraged. Non-native plants such as buckthorn and garlic mustard have been removed and continue to be monitored for regrowth.