

The Future

These and other studies have revealed that the reforestation of the Northeast over the last century has left transmission rights-of-way as one of the last refuges for species that require low-growing plant habitats for survival. Across New York and New England, electric utilities are working together to continue researching these important environmental issues.

Project Partners

SUNY Environmental Science and Forestry
New York State Electric & Gas
New York Power Authority

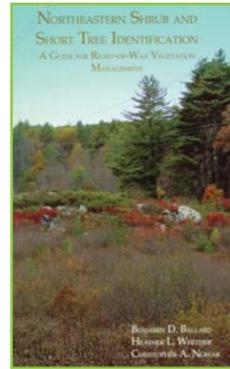


The information contained in this pamphlet is based on National Grid's 2001 Research Project Profile.

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Northeastern Shrub and Short Tree Identification: A Guide for Right-of-Way Vegetation Management

This book can be ordered from:
www.esf.edu/ivm/SHRUBS.htm.

In 2004, the Research Foundation of SUNY, Albany, produced *The Northeastern Shrub and Short Tree Identification* guidebook for and in conjunction with SUNY-ESF in Syracuse, New York. Funding for the development and printing of this book was provided by National Grid and the Environmental Energy Alliance of New York.

CD 3479 10/06

Photo by Benjamin Ballard

Electric Utility Rights-of-Way

A Safe Haven for Plants and Animals

Overview

National Grid, a leading electricity and natural gas delivery company, maintains more than 100,000 acres along 9,000 miles of electric transmission rights-of-way in the Northeast. These corridors must be carefully maintained to provide safe and reliable electricity. Tree limbs that interfere with transmission lines within the rights-of-way may cause costly power outages. Therefore, the management of tall-growing trees in rights-of-way is a major but necessary expense.

Historically, National Grid's rights-of-way were managed on a three- to four-year schedule that included cutting trees and brush by hand. In the 1950s, National Grid began using ground application herbicides to control trees and woody brush along rights-of-way.

Today, National Grid uses Integrated Vegetation Management (IVM) techniques to target individual trees or clumps of tall-growing tree species. IVM employs a variety of techniques including biological controls, hand cutting and selective application of herbicides to control tall-growing trees. Biological control involves promoting the establishment of low-growing plant species that help prevent the growth of tall tree species in the rights-of-way. Selective use of herbicides applied directly to individual tall-growing trees allows low-growing shrubs, grasses, ferns and herbaceous plants to thrive and resist re-growth of trees. These targeted IVM techniques minimize the quantity of herbicides required, which in turn minimizes their impact on stable, low-growing communities of grasses, herbs and shrubs that pose no threat to electric conductors.

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Plants of the Rights-of-Way

Low-growing plants block sunlight, making it difficult for large tree seedlings to become established. A reduction of tall tree species in rights-of-way means fewer branches to interfere with power lines and fewer tree-related power outages.

Additional benefits of low-growing shrub communities include:

- ◆ Enhanced display of diverse flowering plants
- ◆ Abundance of fruit bearing shrubs such as blackberry, raspberry, and wild blueberry that provide food for wildlife
- ◆ An environment that encourages the growth of several endangered and protected plants
- ◆ Cover, nesting, and habitat diversity for several species of songbirds

Without rights-of-way, much of this important ecological niche could be lost. Typically, forest fires and hurricanes are nature's way of creating areas dominated by low-growing plants. However, fire control techniques used today prevent natural land clearing and there has not been a hurricane in the Northeast since 1951 that was severe enough to cause significant forest damage. Abandoned farm fields, another low-



Photo by Benjamin Ballard

growth habitat, are turning into thick forests, leaving rights-of-way as one of the last major land uses in the Northeast that continue to maintain low-growing plant communities.

There are a surprising number of plant species growing within power line corridors in New York State. A mid-1990s study conducted for New York utilities through the former Empire State Electric



Photo by Benjamin Ballard

A beaver pond reflects both the beauty of nature and the power of industry in a single image.

Energy Research Corporation (ESEERCO) and the State University of New York College of Environmental Science and Forestry (SUNY-ESF) found nearly 400 plant species on six New York rights-of-way alone. On a single 15-mile section of power line right-of-way located north of Rome, New York, SUNY-ESF researchers identified more than 300 plant species while performing work under a contemporary research project sponsored by National Grid. There were more than 50 different grasses, 30 tree species, 40 shrubs, 15 ferns and 160 other herbaceous (non-woody) plants. Most of these plants are native to New York, and several of the ferns including the Christmas, cinnamon, interrupted, Lady New York, royal, and wood varieties are protected by the state.

Common tree species found on that right-of-way include aspen, birch, black cherry, red and sugar maples, and white ash. Among the shrubs were viburnum (wild raisin, nannyberry, and arrowwood),

willow, wild blueberry, raspberry, blackberry, honeysuckle, and the meadowsweet and steeple bush varieties of spirea.



Photo by Ben Ballard

Wild Iris

Of the herbaceous plants, protected species include the white-fringed orchid, early spring flowering wild iris, spring beauty, trillium and trout lily.

While society has a general appreciation of plant diversity, there is a limited understanding of the important role that plant variety may actually play. Rights-of-way are unique because they are located in a broad range of landscapes and site conditions across the state. Power line corridors intersect forests, agricultural lands, wetlands, roadways, and residential areas. As a result, many of the species native to these areas also are found in power line corridors.

The maintenance of low-growing plant communities across the diverse New York landscapes traversed by rights-of-way will continue to be important for the safe, reliable and economical transmission of electricity as well as the sustenance of unique habitats that contribute to plant diversity.

Birds of the Rights-of-Way

Maintaining a shrub community along rights-of-way has the added benefit of providing habitats for certain wildlife species that are becoming rare in the Northeast. At the beginning of the 20th century, the Northeast landscape was 15% forested and had abundant habitat for shrub-nesting birds. Today, the Northeast is 70% forested. More tall forest growth means fewer habitats for shrub-nesting birds. As much of the abandoned farmland in the Northeast has become reforested, the region has experienced a resulting decline in the populations



Photo by Craig Allen

Cedar Waxwing

of shrub-nesting birds such as the alder flycatcher, golden-winged warbler, and the indigo bunting.

In the late 1990s, National Grid's Environmental Affairs, Forestry and Technology Transfer

departments partnered to conduct a wildlife study along rights-of-way that have been maintained using IVM techniques. As part of this study, researchers from the State University of New York College of Environmental Science and Forestry (SUNY-ESF) found more than 90 bird species thriving within a section of a transmission line corridor in Oneida County -- nearly double the number of bird species identified in adjoining forests.

Birds found nesting along this right-of-way include the alder flycatcher, American goldfinch, American robin, chestnut-sided warbler, common raven, common yellow-throat, eastern kingbird, eastern towhee, field sparrow, golden-winged warbler, grey catbird, indigo bunting, killdeer, song sparrow, wild turkey, and yellow warbler. Subsequent research results also have shown that selective herbicide treatments encourage the development of shrub habitat without any negative impact to the nesting birds found in the habitat.

Similar studies on the diversity and abundance of birds on rights-of-way in New England were carried out in 1998 and 2000. As in New York, more than 90 species of birds were found on these rights-of-way. In a follow-up nesting success study by researchers from Ithaca College, many species of shrub land birds were found to successfully hatch and fledge young within the rights-of-way.