# NSTAR ELECTRIC & GAS
# FIVE YEAR VEGETATION MANAGEMENT PLAN
# 2013-2017

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# 1. INTRODUCTION

NSTAR Electric and Gas, a service company of Northeast Utilities (NSTAR) hereby submits this Vegetation Management Plan (VMP) in compliance with 333 CMR 11.00, *Rights of Way Management* regulations (Appendix 3).[1] NSTAR delivers electricity to approximately 1.1 million electric customers in 81 municipalities and natural gas to approximately 300,000 gas customers in 51 municipalities. Electricity and natural gas is transmitted over hundreds of miles of distribution and transmission rights-of-way (ROW) throughout the central, eastern, southeastern, Cape Cod and the islands regions of Massachusetts (Appendices 1 & 2).

NSTAR is committed to managing vegetation at all of its facilities in a safe, environmentally responsible and efficient manner in full compliance with a vast array of state and federal laws and regulations. In this effort, NSTAR is responsible for maintaining its ROWs free from hazards and encroachments. Vegetation is one of the items that can interfere with electric and gas service. Following industry standards for both natural gas pipelines and electric power lines, the end result of NSTAR's vegetation management program is the appropriate early successional (low growing) ecological communities on its ROWs that do not interfere with the delivery of safe and reliable energy products to every customer.

Using Integrated Vegetation Management (IVM), NSTAR's program is based on a 3-5 year selective herbicide application and mechanical treatment cycle that supports

[1]A partial list of the regulations that NSTAR must comply with that relate to the activities in this document also include: Chapter 132 B, Pesticide Control Act (Appendix 4); all pertinent clauses in Chapter 85 of the Acts of 2000 (Appendix 8); MESA; MGL c.131, Massachusetts Endangered Species Act and its regulations, 321 CMR 10.00, Massachusetts Endangered Species Regulations; 310 CMR 10.00, *Wetlands Protection Regulations*; 310 CMR 22.00, Drinking Water regulations; Chapter 216, *An Act Relative to the Emergency Service Response of Public Utility Companies*; *NERC Standard FAC-003-1, Commissioner Order 69*; *Endangered Species Act, Migratory Bird Treaty Act; FERC Wetland and Waterbody Construction Mitigation Procedures, and Pursuant to the Federal Natural Gas Act*, 15 U.S.C. §§ 717 et seq.; the *Federal Natural Gas Pipeline Safety Act*, 49 U.S.C. §§ 60101 et seq.; *Federal Hazardous Materials Transportation Act*, 49 C.F.R., Part 192 (Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards), and all applicable Federal Occupational Safety and Health Act, Department of Transportation and Department of Environmental Protection regulations. NSTAR Gas is also required to adopt and implement an ongoing *Operations and Maintenance Plan* for purposes of maintaining the integrity and safety of its pipeline facilities. Additionally, in compliance with 49 CFR, Part 192, Subpart L (Operations), NSTAR Gas must maintain its easement to allow for aerial surveillance of pipeline conditions; to enhance its Damage Prevention Program; to facilitate planned cathodic protection surveys, and to allow access for both routine pipeline maintenance and emergency repairs.

nature's ability to regulate itself by inhibiting the germination and growth of tree seedlings through competition (for light, moisture, nutrients) and depredation of wildlife (browsing/feeding). This program allows for the safe delivery of reliable electric and gas service while minimizing the impact on property owners and supports a healthier, more diverse habitat for wildlife that depends upon early successional landscapes.

Illustration 1: Grasslands Habitat in a Barrens Ecosystem

# 2. GOALS AND OBJECTIVES

NSTAR's VMP outlines and explains the standards of vegetation control expected from a carefully planned IVM program. The primary objective of this VMP is to document the most appropriate practices and procedures designed to control non-compatible vegetation on the entire cleared width of its ROWs while reducing the risk of unreasonable adverse effects to the health and well being of humans, animals and the environment.

This VMP serves as an educational and communication link for state and municipal officials and the public. With professionalism and courtesy on the part of NSTAR and field personnel, this objective will be accomplished through the VMP, Yearly Operational Plans (YOPs) and notification processes required by 333 CMR 11.00 and for Transmission Lines under Chapter 216, *An Act Relative to the Emergency Service Response of Public Utility Companies*.

The following are individual objectives of NSTAR's vegetation management program:

- To maintain ROWs that ensures the safe and dependable delivery of energy products;
- To control vegetation that impedes ground and aerial inspections or interferes with the ability to access the ROWs and structures for maintenance or emergencies;
- To encourage stable early successional ecological communities of primarily low growing plant communities;
- To utilize an IVM program on a three to five year cycle designed to maximize control of undesirable vegetation on the full width of the ROWs;
- To remove or control incompatible (target) vegetation within the cleared width of the ROWs, along access roads, around structures, gates and the perimeter of electric substations;
- To encourage the establishment of wildlife habitat that is compatible with and does not interfere with the primary function of the ROWs;
- To protect the Priority Habitat of State-Listed species;
- To control invasive, poisonous and other noxious plant species;
- To follow all *sensitive areas* restrictions listed in 333 CMR 11.04;

- To ensure that all vegetation management operations are conducted in a safe, effective manner and in conformity with all federal and state laws, regulations, and permit conditions;
- To use experienced, trained vegetation management personnel with Massachusetts pesticide applicator licenses working under the direct supervision of a certified pesticide applicator;
- To allow for unplanned tasks for which all precautions are taken to utilize the correct treatment methods and to protect sensitive areas (construction, restorations, hazard tree removal, etc.);
- To maintain the flexibility necessary to accommodate unique situations and the need for more appropriate techniques in accordance with new regulations, scientific advances, operational experience and/or comments from municipalities, state agencies and contractors (when necessary, following the procedures in 333 CMR 11.05(4)(d)),
- To promote positive public relations with landowners, state and municipal officials, contractors and the public.

# 3. IDENTIFICATION OF TARGET VEGETATION

### *NSTAR ELECTRIC ROWS*

Pursuant to the policy and intent set forth in NSTAR's VMP, all vegetation must be removed that obscures the ROW corridors and grows tall enough to interfere with the safe, efficient and legal operation of an electrical power line. In the wire zone, trees and brush are targeted, and native, low growing plant communities that have a mature height less than 3' are established. In the border zone, incompatible trees and brush are targeted, and the growth of native trees and shrubs that have a mature height less than 15' may be encouraged (see illustration 2).

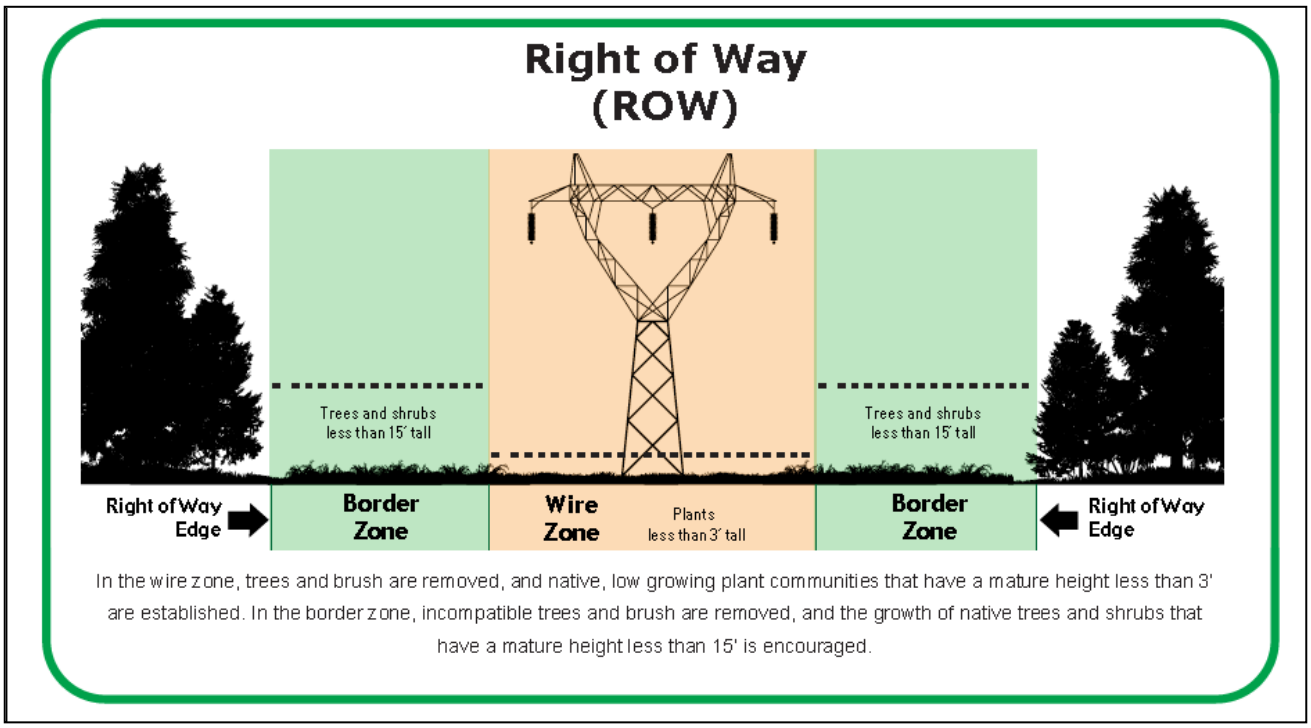


Illustration 2: Wire Zone Border Zone Approach

Following this industry standard border zone, wire zone approach to ROW management, the primary target is all incompatible tree species (woody vegetation with a mature height > 15' tall at maturity); except those species that are under the purview of the Natural Heritage and Endangered Species Program of the Massachusetts Division of

Fisheries and Wildlife (NHESP) which will be treated on a case by case basis. Examples of target species include, but are not limited to:

| | | |
|---|---|---|
| Alder | Cherry | Pine |
| Aspen | Hemlock | Maple |
| Beech | Hickory | Oak |
| Birch | Locust | Sassafras |

There are more non-target vegetation species on an Electric ROW than targets. In fact, ROW's are one of the primary early successional plant communities remaining in New England. As a result, many plant and animal species use ROWs as their homes, feeding grounds or nurseries. Certain plant species, therefore, are generally encouraged on the ROW through the use of an IVM program:

- Most herbaceous growth is acceptable and encouraged.
- Shrubs that mature less than 15 feet in height are not usually targets *unless* due to their location or attributes they interfere with the function of the ROW.

Certain categories of non-tree species are targets under some circumstances, because of their location and/or their nature. Dense woody vegetation, shrubs and vines are targets where they are capable of interfering with the inspection and maintenance of the poles, wires, and along access roads, paths and gates which need to be kept clear, especially for emergencies. Additionally, as will be discussed below, noxious plant species including invasive, poisonous and nuisance plant species are considered targets.

Examples of non-tree species, including noxious plant species generally considered targets, include, but are not limited to:

| **INVASIVES** | | |
|---|---|---|
| Autumn Olive | Japanese Knotweed | Multiflora Rose |
| Buckthorn | Honeysuckle | Oriental Bittersweet |
| Greenbriar | | |
| **OTHER** | | |
| Blackberry | Hawthorne | Sumac |
| Grapevines | Poison Ivy | Virginia Creeper |

## *NSTAR GAS ROWS*

NSTAR Gas's goal for its natural gas pipelines is necessarily different than NSTAR Electric's power lines. To meet regulatory compliance, NSTAR Gas must

establish stable, predominately grass, and low growing herbaceous plant communities along its pipeline ROWs. According to Title 49, Part 195.146 of the Federal Code of Regulations, NSTAR must regularly patrol its pipelines by ground and/or aerial inspections. Tall, dense vegetation impedes the detection of leaks and other potential problems, and woody vegetation obstructs the visibility of and access to valve sites, pipe corrosion test stations, mile marker posts, and other pipe location markers. Additionally, the routine removal of tall vegetation renders the ROW, and its buried high pressure natural gas pipeline, distinguishable from adjacent properties which may prevent third-party damage.

The primary target vegetation on NSTAR's gas ROWs, therefore, includes the same vegetation as on the electric ROWs, plus most woody vegetation including all shrubs. This includes those that mature under 12 feet, including, but not limited to:

| | |
|---|---|
| Dogwood | Sumacs |
| High Bush Blueberry | Viburnums |
| Mountain Laurel | Witch Hazel |
| Speckled Alder | |

A partial list of compatible early successional plants includes, but is not limited to, Low-bush Blueberry, Huckleberry, Sweet fern, grasses, forbs, ferns and wildflowers; however, the first three items on the list are not acceptable around pipeline facilities/structures such as valve sites, pipe corrosion test stations, mile marker posts, and other pipe location markers.

### *NOXIOUS WEEDS (INCLUDES INVASIVE PLANTS, POISONOUS PLANTS AND NUISANCE PLANT SPECIES)* [2]

NSTAR intends to control "noxious weeds," including invasive, poisonous and nuisance plant species with herbicides and mechanical treatment methods. Invasive plant species have become an increasing concern throughout Massachusetts in areas that include ROW corridors where they can spread rapidly and then move into the adjacent landscape. NSTAR also plans on treating poisonous and nuisance plant species at sites on its ROWs identified as having a high risk of posing a health hazard to all individuals working on or traversing a ROW and can impede a rapid response in an emergency.

[2]"NOXIOUS WEED.—The term ''noxious weed'' means any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture, irrigation, navigation, the natural resources of the United States, the public health, or the environment." (Public Law 106–224—June 20, 2000, Title IV—Plant Protection Act).

### *Invasive Plant Species*

The control of invasive plant species is of growing concern in Massachusetts. Many of these non-native plant species were planted for their showy flowers, vigorous growth, erosion control and abundant fruits that attract wildlife (not all introduced species are defined as "invasive"). According to the Massachusetts Invasive Plant Advisory Group "Invasive plants" are non-native species that have spread into native or minimally managed plant systems in Massachusetts. These plants cause economic or environmental harm by developing self-sustaining populations and becoming dominant and/or disruptive to those systems…."

Recognizing this serious threat to our environment, NSTAR's IVM program takes into account the control of invasives using both mechanical and/or chemical control techniques, as necessary in specific locations. Some examples commonly found on ROWs include, but are not limited to:

| | | |
|---|---|---|
| Autumn Olive | Honeysuckle | Oriental Bittersweet |
| Black Locust | Japanese Knotweed | Phragmites |
| Glossy Buckthorn | Multiflora Rose | Purple Loosestrife |

### *Poisonous Plants*

Massachusetts, particularly the southeast, has an abundant population of poison ivy and other poisonous plants. This poses a health hazard to NSTAR personnel, contractors and the public-at-large. Mechanical methods do not reduce the spread of these populations—particularly poison ivy—therefore NSTAR plans to use herbicides to spot treat poisonous plants at sites identified as having a high risk of posing a health hazard.

### *Nuisance Vegetation*

Nuisance vegetation is plant species that pose a risk to the safety and health of individuals working on or traversing a ROW and it can impede a rapid response in an emergency. These plants have heavy thorns, dense foliage and/or impenetrable stems (many are also invasive plant species); examples include, but are not limited to blackberries, raspberries, grapevines and a number of invasives such as Multiflora Rose. NSTAR plans to use a combination of mechanical and chemical treatment methods to reduce their spread.

### *IDENTIFICATION METHODS DURING VEGETATION MANAGEMENT ACTIVITIES*

To ensure the accurate identification of target and non-target vegetation, all vegetation management contractors are required to supply personnel trained to recognize plant species typically found growing on utility sites and to recognize the difference between target and non-target vegetation; including the ability to identify the appropriate early successional communities preferred on electric and gas ROWs.

# 4. INTEGRATED VEGETATION MANAGEMENT

333 CMR 11.01(1) requires that all right-of-way managers "Ensure that an Integrated Pest Management (IPM) approach to vegetation management is utilized on all rights-of-way…." The purpose in implementing the vegetation control program in this VMP is to advance the consistent and safe operation of NSTAR's ROWs through the use of the appropriate industry standard IVM program. NSTAR's IVM program was developed using a knowledge base of over sixty years of continuous research, experience and a multidisciplinary analysis of arboriculture, forestry, ecology, conservation biology, restoration ecology, environmental studies, biology, applicable regulations, laws, and the wide ranging field of integrated pest management, within and outside of the United States.

NSTAR's IVM takes into consideration all factors involved in the maintenance and operation of electric and pipeline ROWs. NSTAR has applied a structured decision making process to construct this IVM program that combines:

- An understanding of the conditions existing on NSTAR's ROWs;
- An understanding of federal and state regulatory mandates that dictate what vegetation is acceptable on NSTAR's ROWs;
- The mandated goals and objectives of utility ROW vegetation management;
- The most current treatment methods;
- The intent to prevent unreasonable adverse effects to the environment and the safety and health of non-target organisms;
- The economic effects of the treatment both for NSTAR and their customers, including the need to delivery energy products safely and economically,
- And above all monitoring and the ability to adapt the program to both current and arising ecological conditions.[3]

NSTAR looks to the longest, most respected and benchmark study of the use of IVM on Electric ROWs for the foundation of its IVM program. Scholars have studied various research plots on Pennsylvania ROWs (popularly known as the "Bramble and Burns" studies) for the past sixty-years. In this continuous study the working definition of IVM is:

> …1) elimination of target trees (undesirable tree species, e.g., tall, rapid-growing trees that eventually may cause a power outage) via herbicide or mechanical means….

[3]Christopher A. Nowak & Benjamin D Ballard. "A Framework for Applying Integrated Vegetation Management on Rights-of-Way." Journal of Arboriculture 31(1) (January 2005): 28-37.

2) development of a tree-resistant plant cover type that eliminates or delays invasion of target trees on the ROW.[4]

Brambles and Burns, Yahner, et al. have chosen not to attach specific terms to their definition of the phases of IVM.

An analysis of IPM programs from around the World, including VMPs written in compliance with 333 CMR 11.00, results in one primary conclusion: there is no single definition of IVM that suits every situation and every entity. In fact different entities use different definitions attached to the same terms. Over the past 60 plus years there have been many additions to the definition of IVM and debates on what comprises IVM. According to the United State Environmental Protection Agency, Office of Pesticide Programs: "[Utility] Integrated Vegetation Management (IVM) is generally defined as the practice of promoting desirable, stable, low-growing plant communities….These methods include a combination of chemical, biological, cultural, mechanical, and/or manual treatments…. Each IVM program is designed around individual goals, needs, and resources….Consequently, every IVM program is unique."[5] There are many terms applied to IPM/IVM, combined in many different manners, and with many variations on their specific meanings. There are, however, also some general constants in the definitions. As a rule, for example, the term "cultural" as is relates to IPM/IVM, is "human practices that reduce pest establishment, reproduction, dispersal, and survival."[6]

Following the foundations of Brambles and Burns, NSTAR's IVM program is a combination of cultural methods including herbicide applications and mechanical treatments that supports the ability of early successional ecological communities to regulate themselves by inhibiting the germination and growth of tree seedlings through

[4]Richard H. Yahner "State Game Lands 33 Research and Demonstration Project—57 years of Continuous Study on the Shawville to Lewiston 230-kV line of First Energy (Penelec). 2009: 9; Yahner. "2009 Annual Report to Cooperators. Green Lane Research and Demonstration Project: 23 Years of Continuous Study." (2009): 8; Yahner. "Wildlife Response to More than 50 years of Vegetation Maintenance on a Pennsylvania U.S., Right-of-Way." Journal of Arboriculture 30(2) (March 2004): 123

[5]United States Environmental Protection Agency. "Fact Sheet: Integrated Vegetation Management." EPA 731-F-08-010 (Oct. 2008).

[6]University of California. "Definition of Integrated Pest Management ." http://www.ipm.ucdavist.edu.

competition (for light, moisture, nutrients), depredation of wildlife (browsing/feeding) and other ecosystem processes.[7]

On its own, and without following a treatment cycle that utilizes chemical and mechanical treatment every 3-5 years, this is not a permanent solution as plant life is by its nature unstable, it is, however, governed by the relatively predictable process of change in composition or structure of ecological succession. In New England, succession strives towards the climax forest, but is interrupted by natural or man-made disturbances both intentionally and accidentally. Utility IVM programs are an intentional man-made disturbance that supports the need to deliver energy products by encouraging the wellbeing of early successional ecological communities. This is achieved by discouraging the establishment of and when necessary removing certain types of vegetation.

Quoting from Restoration Ecologist, Frans Vers: "…the theory that a closed canopy forest is natural vegetation assumes that a wood-pasture is…a state of degradation of a closed canopy forest…."[8] In other words, the popular belief that the only "natural" stage of succession is the final stage fails to take into consideration the whole process of succession over time.

Humans have a long history in New England of manipulating the land for their own purposes in the balance between our needs (real and perceived) and those of the environment. We have both injured and enhanced ecological diversity. Our modern lifestyle and settlement practices, for better or worse, play a large role in the ecology of New England.[9] As a result of the demise of agriculture as a major economic force in New England; the suppression of fires, floods and wide-scale natural disturbance; increased urbanization; the popular belief that only trees are good for wildlife, and the resulting reforestation of New England, we have a responsibility to protect the biodiversity of our native ecosystems. Many species of native plants and wildlife need us to create disturbances in the cycle of ecological succession to protect their habitat(s).

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[7]Yahner. "Wildlife Response to More than 50 years of Vegetation Maintenance on a Pennsylvania U.S., Right-of-Way": 123.

[8]Frans Vers. "The Shifting Baseline Syndrome in Restoration Ecology." Restoration and History: The Search for a Usable Environmental Past. Ed. Marcus Hall: 101.

[9]David R. Foster, "Conservation Issues and Approaches for Dynamic Cultural Landscapes," Journal of Biogeography, Volume 29, Numbers 10/11, October/November 2002: 1533.

When this is possible in a situation where a man-made environment can benefit both humans and wildlife, the results are sustainable.

Areas in which we can fulfill this promise include utility ROWs. When thoughtfully managed ROWs provide excellent heterogeneous wildlife habitat. The biodiversity side of Restoration Ecology is the focus of wildlife specialists in the private and public sector throughout New England.[10] As stewards of the land, utility arborists can easy support the campaign for biodiversity by continuing the careful use of IVM on Massachusetts ROWs that began in the 1960s. This use of IVM is not static. Instead, utility arborists constantly pay attention to the balance of habitat types found throughout their part of the Commonwealth, the need to follow new regulations and advances in the field of utility arboriculture and other related disciplines.

Many New England early successional ecological communities are compatible within NSTAR's ROWs. Depending upon if it is an electric or gas ROW, these may include shrub-lands, barrens, grasslands, fields, meadows, wetlands, vernal pools and heaths all of which, if left alone, are not stable. All of these sites support diverse, well-dispersed plant, animal and insect species populations, including many that are threatened or endangered. The only difference between electric and gas ROWs is that gas pipelines can only support the lowest growing plant communities consisting primarily of grasses, forbs and ferns.

Mechanical and chemical controls are the direct techniques used to target incompatible vegetation and include mowing, hand-cutting and herbicide applications. Utilizing these direct techniques allows, lower growing native plants the opportunity to form dense thickets or communities. Allowing for the spontaneous regeneration of low growing native plants is a vital part of any successful Utility IVM program because

[10]Robert A. Askins. Restoring North America's Birds; Lessons from Landscape Ecology, Yale University Press, New Haven, CT, 2000; W.C. Bramble and W.R. Burns, A Long-term Ecological Study of Game Food and Cover on a Sprayed Utility Right-of-way. Purdue University. 1974. Bulletin No. 918:16; Richard H. Yahner. "Wildlife Response to More than 50 years of Vegetation Maintenance on a Pennsylvania U.S., Right-of-Way," Journal of Arboriculture 30(2), March 2004: 123; James S. Marshall and L.W. Vandruff. "Impact of Selective Herbicide Right-of-WayVegetation Treatment on Birds." Environmental Management 30(6) (December 2002): 801-806; Askins. "Sustaining Biological Diversity in Early Successional Communities: The Challenge of Managing Unpopular Habitats," Wildlife Society Bulletin 29(2) (Summer, 2001): 407-412.

native plants have a much better chance for survival, especially during adverse growing conditions, than planted vegetation that often fails due to site-species incompatibility.

In an IVM program, these native early successional ecological communities lower the dependence on chemical and mechanical controls. At the same time, discouraging succession relies on the human practices of selective chemical and mechanical treatments. All three components of IVM depend upon the others in a continuous cycle that employs the unique advantages of each. Without combining all three, target plant species can develop increased stem densities that require more intense control measures, and ecological succession can run its course.

IVM allows for treatment cycles to be lengthened and with fewer undesirable species on the ROW that require control. There is sixty years' worth of evidence in New England showing that this approach has actually, over time, significantly reduced the per-acre application rate of herbicides on utility ROWs and reduced the need for intensive mechanical controls. [11]

In addition to reducing the use of direct control techniques, an IVM program is also well suited to treating environmentally sensitive areas. With careful thought and planning, an IVM program has the flexibility to manage these sensitive areas because of the ability to apply different control techniques to the appropriate areas. For example, to manage wildlife habitat for native species might require the removal of certain plant species, including some that would otherwise be non-targets and others that are

[11]Environmental Consultants, Inc. "Study of the Impact of Vegetation Management Techniques on Wetlands for Utility Rights of Way in the Commonwealth of Massachusetts." Final report prepared for New England Electric et.al, 1989; Environmental Consultants, Inc. "Determination of the Effectiveness of Herbicide Buffer Zones in Protecting Water Quality on New York State Powerline Rights-of-Way." Final report for the Empire State Electric Energy Research Corporation, 1991; K.H. Deubert. "Studies on the Fate of Garlon 3A and Tordon 101 Used in Selective Foliar Application in the Maintenance of Utility Rights of Way in Eastern Massachusetts." Final Report prepared for New England Electric et. al.,1985; N.H. Nickerson, G.E. Moore and A.D. Cutter. "Study of the Environmental Fates of Herbicides in Wetland Soils on Electric Utility Rights-of-Way in Massachusetts over the Short Term." Final Report prepared for New England Electric et.al, December 1994; Matt Hickler, NHESP approved Review Biologist, Reports for TransCanada, National Grid, NSTAR Electric, and Northeast Utilities under 321 CMR 10.00 Massachusetts Endangered Species Act Regulations, 2006-2010; "Utility Transmission Forestry Herbicide Use Summary Records" for NSTAR Electric, Vermont Electric Power Company, TransCanada Hydro Northeast, Inc and National Grid USA Electric Companies (see National Grid *5 year VMP 2009-2013*, p. 9); C.A. Nowak and L.P. Abrahamson, "Vegetation Management on Electric Transmission Line Rights-of-Way in New York State: The Stability Approach to Reducing Herbicide Use." Proceedings of the International Conference on Forest Vegetation Management, Auburn University, April 1993.

considered invasive species; for example, the removal of Purple Loosestrife and Phragmites to re-establish native Cattail swamps.

NSTAR's IVM program also takes into account instances in which sensitive areas, such as inhabited and agricultural areas, require the application of limited or adapted IVM techniques and control methods. These are areas of a ROW in which the economic, agricultural, social and recreational use of the landscape affect the decision making processes. Examples include: golf courses, residential areas, Christmas tree farms, active pasture and crop lands, or where unique situations warrant this consideration. This does not preclude the use of chemical and/or mechanical controls, except where mandated by laws and regulations. Instead, these landscapes can limit or alter their application; for example, target vegetation might not grow in well-kept lawns but may still grow around poles, guywires and pipeline valves and structures.

In conclusion, to utilize the most protective and effective IVM program, NSTAR will continue to monitor the most current research in treatment methods, products and the vegetation conditions of their ROWs. Furthermore, in maintaining early successional ecological communities, NSTAR will also continue to support the habitat of invertebrates, vertebrates and plants that require this type of habitat, many of which are state-listed as endangered, threatened or rare.[12]

[12]There are many texts on this subject, some of which are listed in the short bibliography in Appendix 10, this is just one excellent example: James D. Oehler ed., Darrel F. Covell, ed, Steve Capel, ed and Bob Long, ed. "Managing Grasslands, Shrublands and Young Forests for Wildlife; A Guide for the Northeast." The Northeast Upland Habitat Technical Committee, 2006.

# 5. MECHANICAL CONTROLS

Mechanical controls include hand cutting, mowing of brush, side pruning and removal of mature trees. The following section lists their uses and sets some basic guidelines.

## *HAND CUTTING*

***Definition:***

The use of chainsaws and brush saws to remove the stem and/or branches from the plant's root system.

***Uses:***

- Target vegetation 15' tall at maturity and over;
- Conifers exceeding 6' in height or all conifers in wetlands;
- In easement restricted areas;
- In chemical restricted sensitive areas;
- In visual buffers in conjunction with cut stump surface treatments (see below),
- Allows for selectivity in target vegetation.

***Operational Practices:***

- Trees are cut as close to the ground as possible so that stump height is no higher than root swell;
- Cut stems are windrowed and diced or chipped;
- Depending on the situation windrows are positioned parallel along the edge of the ROW corridor;
- Cut woody vegetation in yards or recreational sites will be chipped and disposed of, or removed to adjacent areas;
- Diced woody vegetation should not exceed 2 ft. in height;
- Larger trees are limbed and lopped;
- Cut woody vegetation is not left on or across paths, roads, fence lines, stone walls or in waterways or in such a manner that would permit it to wash into these areas;
- The placement of cut woody vegetation must comply with applicable State Fire Marshall's regulations;
- Chipping is used on sites designated by NSTAR when dicing or piling is prohibited or impractical. When necessary, wood chips will be removed;
- No chips shall be left in wetlands,
- All cut cherry is removed from active pastures.

## *MOWING*

***Definition:***

The cutting, severing or shattering of vegetation by large rotary or flail mowers. These heavy-duty mowers, usually ranging from 3-8 feet wide, are typically mounted on large four-wheel drive rubber tired tractors or tracked vehicles.

***Uses:***

- Can be the preferred mechanical technique, especially on sites where extremely tall and dense target vegetation makes hand cutting inefficient and expensive;
- Where herbicides are prohibited,
- On non-restricted sites, mowing may be used to remove tall target vegetation followed by herbicide treatment to the resprouts during the following growing season.

***Operational Practices:***

- Mowing may be restricted by terrain conditions such as steep, rocky sites or wet soils;
- It necessitates the use of hand cutting methods next to obstructions such as stone walls and fence lines;
- Mowing brush can throw large chips and debris great distances from the cutting equipment;
- Extreme care must be exercised to insure the safety of the general public,
- In populated areas it requires employing someone to prevent people and animals from coming too close to the work site.

## *SIDE PRUNING*

***Definition:***

Side pruning or removal of encroaching tops and/or branches of trees growing on or near a ROW. This management technique is usually accomplished by the use of an aerial lift mounted on either a large truck or off-road vehicle. Tree climbing is sometimes employed in situations where terrain prevents the passage of equipment.

***Uses:***

- Maintaining the edge definition of the ROW corridor;
- Easier inspections of vegetation conditions during aerial patrols.

***Operational Practices:***

- All trimming activities are performed in accordance with proper arboriculture practices to insure the health and aesthetic value of the trees (see Operational Guidelines for Applicators);
- All trimming activities are in compliance with all current applicable regulations.

## *REMOVALS*

### *Definition:*

Removal of trees that have become a hazard to the ROW or that may have been overlooked in previous treatment cycles and allowed to encroach the ROW and the lines and conductors. In these cases, trees will be removed in such a way that they cannot strike wires, guy wires, structures, appurtenances and adjacent properties. In most cases these trees will be addressed using aerial lift equipment, but may require climbing where terrain dictates. Larger overhanging limbs may require rigging to safely control the fall of cut material. Trees that do not overhang or directly threaten the line may be "pieced down" by removing material from the top down in small sections that cannot strike the line or cause damage. In cases of severe encroachment on a larger scale, qualified and appropriate timber harvesting equipment and contractors may be employed to clear the ROW up to the edge of easement.

### *Uses:*

- Maintaining the edge definition of the ROW corridor;
- Easier inspections of vegetation conditions during aerial patrols.

### *Operational Practices:*

- All removal activities will be performed by qualified line clearance arborists;
- Care will be taken to accurately locate the bounds of activity, to minimize erosion and unnecessary hydrological damage due to ruts, and to minimize impact to the environment,
- Measures may include matting of wetland areas, installation of silt fences and chipping and removal of all debris.

# 6. MECHANICAL CONTROLS: BENEFITS AND LIMITATIONS

An IVM program does not function without mechanical controls. Between regulatory restrictions and the need to open access to treatment areas, chemical controls cannot work without mechanical controls. Likewise, mechanical controls and chemical controls work together to support the establishment and viability of early successional ecological communities and it takes all three components of an IVM program to support wildlife habitat.

In some areas, mechanical controls are the preferred method or only method; for example, the use of herbicides may be prohibited or restricted in various sensitive areas leaving mechanical treatment methods as the only options. These include defined distances around drinking water supplies both private and public, wetlands or water over wetlands, rivers, certified vernal pools, and agricultural or inhabited areas (see sensitive area section below). Certain Priority Habitats defined by NHESP call for the use of mowing instead of, or in conjunction with herbicide applications to encourage the health or restrict the height of various host plants.

Mechanical treatment methods are also used on vegetation over 15 feet in mature height in preparation for herbicide treatments; in individual areas deemed as sensitive; around structures; on access roads, to clear easements and in areas of thick impenetrable vegetation. Mechanical treatment methods may be combined with chemical controls, including foliar and cut stump treatments, to prevent resprouting. Alternately, where large areas of high density target species have exceeded maximum herbicide treatment heights, a mechanical treatment may be more practical followed, in one or two growing seasons, by an herbicide application to obtain effective control. This includes along the easement edges where trees that exceed NSTAR's ability to comply with federal regulations are cleared or trimmed.

Upon establishing the easement edge, the cleared area of the ROW is managed by the Wire Zone, Border Zone approach using the appropriate treatment methods, as, on their own mechanical controls are only a short-term solution to controlling vegetation on a ROW system. With the exception of most conifer species (pitch pine does resprout), cut vegetation resprouts from dormant buds on the root collar resulting in a stem density significantly greater than the original vegetation. An annual program that uses only

mechanical treatment cycles therefore generally increases dense areas of woody vegetation. This vegetation competes with and dominates the low growing vegetation NSTAR wishes to encourage.

When relying on mechanical control methods alone, dense areas of target vegetation also become costly and dangerous to hand-cut with power saws and are best controlled by mowing. Large mowing equipment, although an excellent IVM tool, can have a negative impact on non-target plant communities whose establishment is crucial to developing successful natural controls. The scarification of the soil surface also creates a potential seedbed for fast growing, pioneering target species such as poplars, cherries, birches and various invasive species. This can increase the frequency of the maintenance cycle and destroy the dominance of stable, diverse early successional plant communities. Similarly, sensitive areas, such as wetlands and residential areas can be adversely impacted when crossed by mechanical maintenance equipment.

Mowers, chainsaws and brush saws also represent a higher risk to workers than herbicide applications.[13] Mowing machines throw rocks and pieces of wood and objects great distances exposing both the workers and the public to safety risks from flying objects. No matter how carefully executed, at the conclusion of mechanical treatment operations, stumps are left on the ROW, which are a tripping hazards to both workers and the general public; they can also puncture tires and damage equipment.

All three components of an IVM program have their limitations. This is actually the strength of an IVM program. Understanding these limitation is just as important as understanding their strengths. The, when crafting an IVM program that suits the conditions of individual ROWs the limitations are restricted while the benefits can be utilized to meet the goals of reliability in the most responsible fashion possible.

[13]See Appendix 10.

# 7. CHEMICAL CONTROLS

Chemical controls are herbicide applications which include foliar, basal and cut stump surface treatments (CST), and plant growth regulator (PGR) applications. They are a vital year-round component of an IVM program in establishing and stabilizing early successional plant communities and the development of natural controls to maintain this goal. The following sections lists their uses and sets some basic guidelines.

## *GENERAL GUIDELINES*

- An advance person or "prep-cutting" crew will patrol the ROWs before the herbicide application operation.
- Sensitive areas will be identified and appropriately measured and flagged, then verified and recorded when appropriate.
- Herbicides will NOT be applied during the following adverse weather conditions:
  - ✓ During high wind velocity, per 333 CMR 11.03;
  - ✓ Foliar applications during periods of dense fog, or moderate to heavy rainfall per 333 CMR 11.03;
  - ✓ CST or basal applications during periods of heavy rainfall;
  - ✓ Foliar applications of volatile herbicides when temperatures exceed 89 degrees Fahrenheit and low humidity;
  - ✓ CST or Basal application when deep snow (i.e. 6" plus or ice frozen on stem or stump) prevents adequate coverage of target plants to facilitate acceptable control,
  - ✓ Basal applications when the stems are excessively wet from moisture.
- Herbicides are not applied:
  - ✓ To target vegetation standing in surface water;
  - ✓ Within chemical restricted Sensitive Areas per 333 CMR 11.00,
  - ✓ To active pasture land unless arrangements are made with land owners to move livestock to an alternative location.
- All conifers over six feet tall will be controlled by cutting. Where appropriate, all pitch-pine stumps will be treated with an herbicide to prevent resprouts.

## *FOLIAGE APPLICATIONS*

### *Definitions:*

The application of herbicides to fully developed leaves, stems, needles or blades of a plant.

***Low Volume Foliar:***

Hand-operated pumps or motorized, backpack sprayers with herbicide concentrations per the manufacturers' label(s). The backpack sprayer produces an air current that delivers the herbicide mixture from the portable spray tank to the target vegetation. The hand sprayer uses a column of water. In both cases, the amount of herbicide solution applied only dampens or lightly wets the target vegetation, instead of being applied to the point of run-off. This minimizes the amount of excess herbicide drip from target species onto desirable ground cover. Low volume applications also eliminate the need to bring heavy equipment on the ROW for the transportation of large quantities of herbicide solution.

***Modified Low Volume Foliar:***

Uniform, penetrating herbicide mixtures delivered to dense target vegetation. This technique usually involves 200-500 gallon hydraulic sprayers mounted on a truck or tractor equipped with several hundred feet of hose and hand held spray guns. The herbicide mixture can be directed to specific target vegetation for spot treatments or broadcast for uniform coverage in dense thickets of nuisance plants such as poisonous, noxious or invasive plant species.

***Uses:***

- An economical and effective control method in medium and high brush densities
- Effective control of invasive, noxious and poisonous vegetation.
- Contributes to establishing and stabilizing early successional plant communities.
- Allows for selectivity in targeting vegetation.

***General Guidelines:***

- Herbicides are mixed or diluted with water;
- Herbicides are applied as a uniform spray over the entire plant's foliage;
- Low pressure foliar application equipment will be adjusted to apply a spray pattern that achieves effective control at the lowest application rate;
- Application period usually extends from early June through the beginning of leaf abscission in early fall;
- Anti-drift agents are added to the mix or solution in all foliage applications to reduce the potential of herbicide drift beyond target vegetation—drift control agents reduce the break-up of sprays into fine droplets and offer increased selectivity, leaf tissue penetration, and herbicide deposition on target plants;

- Foliar applications can be made, and are effective, in light mist conditions;
- When foliar applications are stopped by rainfall, treatment will not resume until the rain ends and is not actively running off the leaf surface,
- Foliage application operations cease in wind conditions that make it impossible to prevent herbicide movement beyond the target area.

## *LOW-VOLUME STEM BASAL*

***Definition:***

The selective application of herbicides in an oil solution to the lower portion of the plant stem.

***Uses:***

- Year-round application technique, except during deep snow conditions that cover the target area;
- Typically employed during the non-foliage season when target stems are easier to identify without the interference of lush, tall grasses or ferns.

***Guidelines:***

- Utilizes hand-operated backpack sprayers;
- Utilizes special blended light petroleum oil as the dilutent, enabling the herbicide solution to penetrate the bark tissue and translocate within the target plant species;
- Not an appropriate method to control high target stem densities due to high herbicide rates per acre and unreasonable labor costs;
- Extending the herbicide treatment period beyond the foliage season justifies using this technique for appropriate vegetation conditions,
- May be the appropriate choice for visually sensitive areas or where extreme selectively is desirable.

## *CUT STUMP SURFACE TREATMENT (CST)*

***Definition:***

The application of an herbicide mixture to the cut surface of a stump immediately following or during a cutting operation using an herbicide concentration, diluted in water or a non-freezing solution.

***Uses:***

- Year-round applications except during deep snow conditions that prevent cutting the stumps low enough;
- Offers the opportunity to chemically treat incompatible vegetation in sensitive areas where other methods are not possible,
- Commonly used to prevent resprouts when hand cutting vegetation.

***Guidelines:***

- Application equipment includes low-volume, backpack, hand-pump sprayers; hand held squirt bottles; paintbrushes, or sponge applicators;
- Only necessary to treat the phloem and cambium tissue, regardless of the stump diameter;
- Ideally, treatment should be made to freshly cut stumps;
- Best to avoid using it during the season of high sap flow,
- Not practical in moderate to heavy stem densities.

## *PLANT GROWTH REGULATORS (PGR)*

***Definition:***

Tree Growth Regulators (TGRs) are plant growth regulator chemicals that manage or reduce the potential growth rate of trees.

***Uses:***

- Useful especially along street distribution lines where repetitive trimming is necessary to maintain adequate tree-wire clearances;
- Can lengthen the time frame between trimming cycles and improve the aesthetics of street and yard trees that may otherwise require removal or severe pruning.

***Guidelines:***

- Applied as basal drench around the base of the tree, or
- Applied as a soil injection next to the buttress root zone.

# 8. CHEMICAL CONTROLS: JUSTIFICATION, RATIONALE FOR USE AND GUIDELINES AS PART OF AN INTEGRATED VEGETATION MANAGEMENT PROGRAM

State and federal regulations require NSTAR to deliver energy products to its customers in a safe and efficient manner and to control vegetation on its ROWs. To meet these obligations in an ecologically sound manner is, as discussed above and according to a wide range of studies, best completed by stabilizing the early successional vegetation communities on the ROWs.[14] To do this, NSTAR needs to use all the treatment methods available while encouraging the establishment or stability of a landscape that is both accessible and which supports the health and hopefully growth of native plants and wildlife habitat.

In an IVM program, chemical controls are the ideal method to achieves long term vegetation control because the entire target plant, including the roots, is controlled by the use of herbicides, stopping their spread by resprouts, adventitious root suckering and rhizomes. Eliminating the ability of the treated targets to return also increases the length of time between treatment cycles by reducing their recurrence and stem counts. This is achieved by scheduling herbicide applications to sustain acceptable vegetation control at minimal application rates.[15] When all of these factors are taken into consideration herbicide applications can minimize the amount of manpower and equipment and their repeated impact on the environment, including unintended petroleum and hydraulic fluid leaks from mechanical equipment.

The herbicide formulations are then applied selectively by low-volume methods that dry quickly on the plant surface, which significantly restricts the greatest potential for off-target exposure. Additionally, anti-drift adjuvants that can be adjusted to accommodate changes in wind velocity are included in all foliage applications to further

[14]Belisle, Francis. "Wildlife Use of Riparian Vegetation Buffer Zones in High Voltage Powerline Rights-of-Way in the Quebec Boreal Forest." 7th International Symposium on Environmental Concerns in Rights-of-Way Management, 1999; Confer, John L. "Management, Vegetative Structure and Shrubland Birds of Rights-of-Way," 7th International Symposium on Environmental Concerns in Rights-of-Way Management, 1999; CVPS. "Central Vermont Public Service Corporations 2006 Strategy; T&D Forestry,"' Rutland, VT, 2006; Niering, William A. "Roadside Use of Native Plants: Working with Succession, An Ecological Approach in Preserving Biodiversity." Roadside Use of Native Plants: http://www.environment.fhwa.dot.gov/ecosystems/vegmgmt_rdsduse.asp.

[15]*Utility Transmission Forestry Herbicide Use Summary Records*; Nowak & Abrahamson.

limit the likelihood of unintentional exposure to non-target organisms. Applications are also not made in situations when there is a reasonable expectation that herbicides will drift from the target, or during measurable precipitation.

For use within limited spray areas, the DAR established a *Sensitive Area Material List* to help reduce the potential of any negative impact by the use of herbicides in sensitive areas defined in 333 CMR 11.04. All of the herbicides on this list have gone through extensive testing to be considered for registration by Federal EPA and before being included on the *Sensitive Area Materials List* they go under further scrutiny by the Massachusetts Department of Agricultural Resources and Massachusetts Department of Environmental Protection.[16]

Selective herbicides applications do not adversely affect wetland plant composition or function according to the study cited in the *DFA Decision Concerning The Wetland Impact Study Conducted Pursuant to 333 CMR 11.04(4)(c)(2)* (Appendix 7). In fact, according to the 1989 study by Environmental Consultants, Inc. quoted in the *Decision*, mechanical vegetation control techniques result in significantly greater impact on wetland composition and function.

Herbicide applications can be more selective than mechanical treatment methods. Selective herbicide applications encourage plant species diversity by targeting specific plants for removal. They offer varied degrees of selectivity and favor certain types of plants; for example, broadleaf vegetation can be controlled with little or no impact to grasses. A continual cycle of selective herbicide applications as part of an IVM program, therefore, promotes low-growing plant communities while reducing the density of target species.

Also, invasive, noxious and poisonous plant species are best managed by early recognition and intervention with chemical controls before a little intrusion becomes a large infestation. A quick response with the flexibility to use the appropriate control methods will reduce the likelihood of severe infestations.

Selective herbicide applications can be much less destructive than mowing to nesting sites and the vegetation necessary for food and cover. Little site disturbance is

[16]A current list of the *Sensitive Area Materials List* and individual *Fact Sheets* on these herbicides are available at: http://www.mass.gov/eea/agencies/agr/pesticides/rights-of-way-vegetation-management.html.

associated with selective herbicide applications. For example: to control the dense resprouts resulting from a mowing operation requires higher per acre rates of applied herbicide to achieve acceptable control than a selective herbicide/cutting application.

This is not to say that mowing is not an important component in an IVM program. Both control methods need to be used in combination with hand cutting techniques to cover all situations. In fact, thoughtful, carefully planned, selective herbicide applications in combination with mechanical controls, where appropriate, actually promote wildlife habitat by encouraging plant species diversity.[17]

State-of the-art herbicide application equipment and the requirement that contractors apply herbicides in the most judicious manner possible further minimizes environmental site damage. Herbicides, particularly when applied selectively by low-volume methods, dry quickly on the plant surface, thereby significantly restricting the greatest potential for dermal exposure. The use of anti-drift adjuvants in all foliage applications that can be adjusted to accommodate changes in wind velocity further limit the likelihood of unintentional exposure to non-target organisms.

The selection of the herbicides coupled with the appropriate treatment methods is made with consideration given to the environmental sensitivity of a ROW or site within a ROW. For example, target species, such as non sprouting conifers, are generally not treated since herbicide treatment is not necessary for control. Exceptions to this general guideline are made where White Pine regeneration has seeded in large thick "carpets" and mowing would be more destructive than an herbicide application.

The herbicides, applications and other treatment methods used on any given ROW are selected based on site sensitivity, target species composition and density. Herbicides will not be used in certain areas if site sensitivity, regulations, new restrictions, or target species composition or height require otherwise. NSTAR chooses the most appropriate treatment methods to meet all of its goals, objectives and obligations and the most scientifically sound, environmentally friendly solution is to use all three components of IVM where appropriate.

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[17]A short list of examples includes: W.C. Bramble and W.R. Burns. "A long-term ecological study of game food and cover on a sprayed utility right-of-way." *Bulletin No. 918*, Purdue University (1974):16; Yahner. "Wildlife Response to More than 50 years of Vegetation Maintenance on a Pennsylvania U.S., Right-of-Way": 123; James S. Marshall and L.W. Vandruff. *Impact of Selective Herbicide Right-of-Way Vegetation Treatment on Birds*. Environmental Management 30( 6) (December 2002): 801-806.

# 9. DEFINITION, IDENTIFICATION AND TREATMENT OF SENSITIVE AREAS

Per 333 CMR 11.02, sensitive areas are "any areas within rights-of-way...in which public health, environmental or agricultural concerns warrant special protection to further minimize risks of unreasonable adverse effects." They include, but are not limited to, the following:

Water Supplies
- Zone I's.[18]
- Zone II's
- IWPA's (Interim Wellhead Protection Areas)
- Class A Surface Water Sources
- Tributaries to a Class A Surface Water Source
- Class B Drinking Water Intakes
- Private Wells.

Surface Waters
- Wetlands
- Water Over Wetlands
- The Mean Annual High Water Line of a River
- The Outer Boundary of a Riverfront Area
- Certified Vernal Pools.

Cultural Sites
- Agricultural Areas.
- Inhabited Areas.

Wildlife Areas
- Certified Vernal Pool Habitat
- Priority Habitat.

Sensitive areas consist of *no-spray areas* in which herbicide use is prohibited, *limited spray areas*, and areas that require special treatment recommendations (see below). Protecting all of these environmentally sensitive sites is accomplished by establishing limited spray and no-spray areas and treatment restrictions based on the sensitivity of each site and the requirement to minimize any unreasonable adverse impacts within that area (See Appendix 5).

[18]NSTAR's policy is to follow the strictest distance restrictions on Zone I's (400 feet) so that no mistakes are made on identifying well types.

The herbicides included in the *Herbicides Recommended for Use in Sensitive Areas List* (*Sensitive Area Materials List*) will be applied in limited spray areas according to the application restrictions in 333 CMR 11.04 or in the case of Priority Habitat, approval of the YOP by the Natural Heritage and Endangered Species Program of the Massachusetts Department of Fisheries and Wildlife (NHESP). A current copy of the *Sensitive Areas Materials List* and Massachusetts Department of Agricultural Resources approved active ingredient fact sheets are available at:

http://www.mass.gov/eea/agencies/agr/pesticides/rights-of-way-vegetation-management.html.

***IDENTIFICATION OF SENSITIVE AREAS***

Sensitive areas can be divided into two additional categories that help identify and treating them: "*readily identifiable in the field*" and "*not readily identifiable in the field*." Readily identifiable in the field areas will be treated, identified and when appropriate, marked according to all applicable restrictions listed in 333 CMR 11.00. Not readily identifiable in the field areas will likewise be treated and marked when appropriate, but they are identified in the field by the use of data marked on maps and collected in the YOP and notification processes.

- Sensitive areas usually identifiable in the field, include but are not limited to: surface water, some private and public water supplies, wetlands, inhabited and agricultural areas.
- Sensitive areas not usually identifiable in the field, including, but are not limited to: designated public surface water supplies, public ground water supplies, some private drinking supplies, the first 400 feet of water supply tributaries, certified vernal pools and Priority Habitat of State-listed Species.

As appropriate, therefore, sensitive areas will be identified and when necessary marked in the field by NSTAR staff, an experienced vegetation management treatment crew point person, individuals trained in the identification of sensitive areas that require the use of GIS (geographic information systems) and GPS equipment, and/or by a NHESP approved botanist trained in the delineation of state-listed species.

NSTAR and contractor personnel assigned the task of identifying sensitive areas in the field will use the following sources and methods:

- Massachusetts Department of Environmental Protection (DEP) water supply maps/GIS mapping layers available through Mass GIS;
- Massachusetts Department of Agricultural Resources (DAR) records of identified private wells along the ROW;
- Correspondence, meetings and input from municipalities within the forty-five day YOP and twenty-one day municipal right-of-way notification letter review and comment periods and the 48 hour newspaper notification (under 333 CMR 11.06 & 11.07 and Chapter 85 of the Acts of 2000);
- Correspondence, meetings and input from NSTAR's abutter and/or landowner notification procedure, as applicable;
- NSTAR's maps, records and institutional knowledge;
- Any additional pertinent information that becomes available during the YOP process and throughout the five years of this VMP;
- A point person who verifies identified sensitive areas and any additional areas that may require special precautions;
- United States Geological Survey topographical maps;
- Information from contractor's knowledge and records;
- Information from MassGIS;
- Confidential information from NHESP;
- A copy of the YOP and VMP;
- Treatment crew(s) are required to have the following references on the job site to help identify sensitive areas:
    - ✓ Topographical maps (electronic or paper)
    - ✓ Copy of YOP
    - ✓ Any additional information that may become available.

Maps are a resource and a tool for both the public and the vegetation management crews, therefore, they contain the data needed to identify, mark and treat sensitive areas appropriately and are in compliance with all applicable regulations.

Maps included in the YOP are updated every year as new data becomes available. Some sensitive areas are contained on the base USGS topographic maps, in the most current data available through MassGIS such as public water supplies and certified vernal pools and any data that NSTAR has collected to date on items such as private wells are then added on top of the USGS data. At the time of treatment, additional sensitive areas will be added to the maps utilized by NSTAR's vegetation management contractors.

Please note that to be able to see the important information on the maps, Zone II's and other limited spray areas are not mapped in areas where NSTAR only uses herbicides on the *DAR Rights-of-Way Sensitive Area Materials List*.

The locations of the Priority Habitats of state listed species as regulated by the NHESP of the Division of Fisheries & Wildlife are only included on field maps to contractors who sign a confidentiality agreement expressly for this purpose. A map layer of Priority Habitats is available to the general public at http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis but it is neither specific to areas of concern for herbicide applications nor does it include data on the individual species since the exact location and details of their habitat is protected.

### *CONTROL STRATEGIES FOR SENSITIVE AREAS*

Mandated sensitive areas will be treated following the restrictions in applicable state and federal regulations. NSTAR also reserves the right to designate additional areas as areas that require special treatment considerations including, but not limited to, landowner agreements, visual or environmental impact considerations, and other considerations that arise during the treatment cycles.

Treatments in all sensitive areas will follow the operational guidelines and restrictions listed above, as well as the guidelines described in the Sensitive Area Table in Appendix 5.

#### *Wetlands*

Pursuant to 333 CMR 11.04 (4) (c) (2), based upon the results of two ROW wetland impact studies (see appendix 5), the Massachusetts Department of Agricultural Resources in consultation with the Department of Environmental Protection and the VMP Advisory Panel, made a determination that herbicides, when used at various utilities including electric lines and gas pipelines, under the guidance of an IVM program and other conditions as set forth in the determination, have less impact on wetlands than mechanical only techniques. Therefore in accordance with the conditions of the determination, NSTAR will selectively apply herbicides to

wetland sites, except within ten feet of standing and flowing water and to conifers which will be cut (Appendix 5).

***Public and Private Water Supplies***

Appropriate sources and references will be consulted to determine the location of public and private water supplies. NSTAR's YOP maps will include all known public and private water supplies at the time of printing using the sources listed above, and the mapping information used by contract treatment crews will be updated as necessary during the treatment cycle.

To aid in the public and private water supply identification process, under 333 CMR 11.01(3)[19], NSTAR requests that during the various federal, state and voluntary notification processes and during the treatment cycle, that public and municipal agencies and private entities and individuals share information on new or unidentified public and private water supplies.

*Identified* private drinking supplies within one hundred feet of a ROW are included in our permanent records and maps, and landowners are encouraged to post signs on the edge of the ROW to help identify private water supplies (the no-spray treatment area is fifty feet from a private well).

A point person will patrol the ROW to verify sensitive areas and buffers are appropriately measured and when applicable flagged, and recorded for permanent record.

***Massachusetts Endangered Species Act***

NSTAR recognizes the importance of the Massachusetts Endangered Species Act, M.G.L.C. 131 A, and its significance to ROW vegetation management. NSTAR will comply with all applicable portions of this Act and the regulations promulgated thereunder. NSTAR will also follow the rules and prohibitions directed at human activities which Take Species or alter their Significant Habitat (as of this printing there are no designated Significant Habitat in Massachusetts).

[19]333 CMR 11.01(3): "[The Specific goals of 333 CMR 11.00 are to] Ensure ample opportunity for public and municipal agency input on potential impacts of herbicide application to rights-of-way in environmentally sensitive areas."

321 CMR 10.14, Massachusetts Endangered Species Act Regulations, Part II Exemptions and 333 CMR 11.04(3)(a-c) exempts utility ROW vegetation management from the permit process under the following conditions:

> (12) The management of vegetation within existing utility rights-of-way provided that the management is carried out in accordance with a vegetation management plan approved in writing by the Division prior to the commencement of work for which a review fee shall be charged, the amount of which shall be determined by the commissioner of administration under the provisions of M.G.L. c.7, § 3B…
>
> [and for roadside distribution lines]
>
> (6) installation, repair, replacement, and maintenance of utility lines (gas, water, sewer, phone, electrical) for which all associated work is within ten feet from the edge of existing paved roads;

To comply with exemption 10.14(12), NSTAR will submit this VMP and YOPs to the NHESP for review.

The NHESP has delineated areas as Priority Habitat based on the "Best Scientific Evidence Available" to protect State-listed species from a "take." Under the approval process, details about the Priority Habitat of state-listed species that might be affected by our activities and management recommendations are shared with NSTAR under strict confidentiality agreements.[20] Using this data and best management practices, NSTAR and contract personnel will follow the appropriate vegetation management treatment methods within these sensitive areas taking all practical means and measures to modify ROW vegetation management procedures to avoid damage to state-listed species and their habitat.

To identify Priority Habitats, NSTAR personnel, NHESP approved review botanists and vegetation management crews must use proper identification procedures. Contractors are, therefore, required to train their personnel to recognize the location of Priority Habitats using one of the following tools: paper maps, GPS coordinates and/or GIS systems.

[20] A map layer of Priority Habitat is available to the general public at http://www.mass.gov/anf/research-and-tech/it-serv-and-support/application-serv/office-of-geographic-information-massgis , but it is neither specific to the areas of concern for herbicide applications nor does it have detailed data on the species of concern; the exact location and details of their habitat is kept confidential for their protection.

# 10. NSTAR DESIGNATED SENSITIVE AREAS

Above and beyond 333 CMR 11.00 and other applicable state and federal regulations, NSTAR designates two types of visual buffers to screen the general public from potentially objectionable views of structures and substations: shrub and tree/shrub buffers. These sites include, but are not limited to, locations where ROW's cross roads, recreational areas, and inhabited areas:

- Shrub buffers are mostly at road crossings. All trees and shrub species that may grow into the conductor security zone are removed.
- Tree/shrub buffers are used only where sites are extremely sensitive and shrub growth is inadequate for screening. Trees and shrub species that may grow into the conductors will be removed. Selective trimming will be used where removal is not recommended or practical.

# 11. OPERATIONAL GUIDELINES FOR APPLICATORS RELATIVE TO HERBICIDE USE

NSTAR relies on independent vegetation management contractors and requires that they comply with all applicable federal and state laws and regulations. This VMP, the YOPs and information in the notification documentation are the operational guidelines for applicators relative to herbicide use. Therefore, according to the regulations, at a minimum, the contractor's application crews shall have a copy of the YOP accessible at the work site.

In addition to the guidelines contained in other sections of the VMP, this section sets forth the general operational guidelines for vegetation management. All guidelines are based on the requirement that both the contractor(s) and NSTAR are responsible to insure that vegetation management activities are conducted in a professional, safe, efficient manner, with special attention directed towards minimal environmental impact.

NSTAR will alter or add to these guidelines based on possible future changes or additions to state and federal regulations that apply to herbicide applications and all changes or additions will be approved by DAR.

## *NSTAR PERSONNEL*

- The following individual is responsible for monitoring, supervising and coordinating vegetation management programs (NSTAR may direct contractors to communicate with other NSTAR personnel):

  William Hayes, Senior Arborist
  NSTAR Electric & Gas Corporation
  Planning, Scheduling and Contract Services Department
  One NSTAR Way, SE-370
  Westwood, MA 02090-9230
  781-441- 3932 (office)

- The arborist(s) will inform the contractor which ROWs will be treated, the range of treatment dates and any other specification required to complete the job.

- NSTAR will provide ROW maps with treatment restriction lists and written instructions outlining any special treatment considerations or instructions.

- Contractors will notify the NSTAR company representative(s) of any questions or complaints from the public and/or government agencies that relate to ROW vegetation management. NSTAR will deal with these complaints or questions in a timely fashion.

## *CONTRACTOR SAFETY, CONTRACT AND LEGAL COMPLIANCE GUIDELINES*

- Contractors must provide qualified, personnel who have been trained to recognize and identify target and non-target vegetation and are knowledgeable in the safe and proper use of both mechanical and chemical vegetation management techniques.
- All personnel applying herbicides in Massachusetts must hold a pesticide applicator license and must work under the on-site supervision of a certified applicator, with a Category 40 certification.
- Herbicides will be handled and applied only in accordance with label instructions
- Mixing will not be done on the ROW.
- Contractors are not expected to start work without the appropriate maps, restriction lists, landowner notifications and mixing rate instructions.
- Contractors will be in compliance with the latest revisions of all industry standards including, but not limited to all applicable safety standards under the Occupational Safety and Health Act (OSHA) including 1910.269, Electric Power Generation, Transmission, and Distribution; ANSI Z133 & ANSI 300 standards, and NSTAR Safety Procedures.
- All contract personnel will follow label instructions regarding Personal Protective Equipment (PPE).
- All contract personnel will follow NSTAR's safety requirements as outlined in the NSTAR Electric Transmission Vegetation Management Plan and Electric Distribution Vegetation Management Plan.
- Applicators will immediately cease operations if adverse conditions or other circumstances warrant.
- Access to a ROW will be through the use of established roadways whenever possible.
- All bar-ways and gates shall be immediately closed.
- Care shall be exercised to prevent the rutting or destruction of roadways, fields or any other form of access.
- No litter of any kind will be left on the ROW or adjoining land.

## *CONTRACTOR DAILY TASKS*

- Call the appropriate NSTAR personnel
- In compliance with both regulations and NSTAR policy, the contractors' foreman or senior crew member must complete daily vegetation management reports that include:
    - ✓ Date, name and address of vegetation management contractor(s).
    - ✓ Identification of site or work area.
    - ✓ List of crew members.
    - ✓ Type of equipment and hours used, both mechanical and chemical
    - ✓ Method of application and description of target vegetation
    - ✓ Amount, concentration, product name of herbicide(s), adjuvants and dilutants (EPA registration numbers must be on file).
    - ✓ Weather conditions.
    - ✓ Notation of any unusual conditions or incidents, including public inquiries.
    - ✓ Recording and/or verification of sensitive areas on ROW maps.
- All required forms will be distributed to the contractors by the NSTAR representative(s).
- NSTAR request that contractor(s) call if they see a hazard tree.
- Contractors must follow the Specifications noted in the RFP's.

## *EQUIPMENT*

- NSTAR will not dictate the exact equipment to be used by the contractors, instead, all equipment shall be of adequate design to produce professional quality results.
- Equipment must be maintained in good working condition, including being calibrated as appropriate.
- Care and common sense shall be exercised when moving vehicles and equipment.

## *LANDOWNERS*

Landowners are individuals whose property is either under NSTAR's ROW easements and/or abuts the ROW.

- Landowners will be treated with courtesy and respect at all times.
- Permission must be obtained for ingress and egress if entering the ROW from private land.

- If a landowner demands vegetation maintenance cease, the contractor should remove the crew and equipment off the property, inform the appropriate NSTAR. representative as soon as possible and wait for clearance before returning to that location.
- When addressing serious complaints from a landowner, or other concerned person, notice will be sent to the appropriate authorities at DAR.

## *RESULTS*

- Vegetation management programs must result in 95% control of all target species.
- The contractor may be held responsible to re-treat areas that do not meet required results as long as these "touch-up" treatments follow all restrictions in 333 CMR 11.03(8) as listed in the *Control Strategies for Sensitive Area* table in Appendix 5.
- Vegetation management crews will exercise care to insure that low-growing desirable vegetation and other non-target organisms are not unreasonably affected by the application of herbicides.
- Unreasonable site damage or destruction during any phase of the vegetation management operation by the contractor, his agents or employees, will be repaired immediately by said contractor to NSTAR's satisfaction.

# 12. ALTERNATIVE LAND USES

Wherever practical, as determined by the Senior Arborist or NSTAR management, NSTAR will cooperate with landowners through whose property NSTAR owns easements, to facilitate "alternative land use" practices by the landowner's that may reduce or eliminate the need for vegetation management by NSTAR. "

Acceptable uses may include an approved lawn or a garden with compatible species of plants approved by NSTAR Electric Company. Any alternative land use proposed by a landowner within an electrical transmission easement must be reviewed by NSTAR. NSTAR will review a properly submitted proposal and consider conditional approval if the request does not interfere with its operating needs or compromise public safety, and is environmentally sound. The submittal should be addressed to: Supervisor, T & D Rights and Survey, NSTAR Electric, One NSTAR Way, Mail Stop SE210, Westwood, MA 02090. Any approval by the Company is given in the form of a written license only and with the understanding that NSTAR's easement rights are in no way diminished nor does the company assume any liability.

# 13. REMEDIAL SPILL AND EMERGENCY PLAN

NSTAR contracts with independent, professional, certified herbicide applicators that are responsible for the containment, clean up and reporting of chemical spills or accidents. The following is a guide to the information sources that, according to various regulations, must be available to the treatment crew in the event of a chemical spill or emergency situation.

## *TYPES OF CHEMICAL SPILLS THAT REQUIRE ACTION*

Chemicals include, but are not limited to the following:

- Herbicides
- Bar and Chain Oil
- Motor & Hydraulic Oil
- Diesel Fuel
- Gasoline
- Title 3 Hazmat Materials

## *REQUIRED SPILL RESPONSE EQUIPMENT*

As a minimum, the ROW crew should have available on the job site:

- VMP and YOP with emergency contact lists
- Material Safety Data Sheets and product labels
- Product Fact Sheets
- Appropriate absorbent material such as “speedi dri” or “soak up”
- Shovel
- Broom
- Flagging
- Leak proof container
- Heavy-duty plastic bags

## *PERSONAL CONTACT*

In the event of **Personal Contact** with hazardous chemicals:

- Wash affected area with plenty of soap and water
- Change clothing which has absorbed hazardous chemicals
- If necessary, contact a physician
- If necessary, contact the proper emergency services
- If necessary, follow the procedures for Major or Minor Spills as outlined below
- Avoid breathing the fumes of hazardous chemicals

## *TECHNICAL REFERENCE MATERIALS*

### A. Herbicide Information

1. Product Label
2. Product Material Safety Data Sheet (MSDS)
3. Product Fact Sheet, if available

### B. Table 1. Herbicide Manufacturers:

| MANUFACTURER | TELEPHONE NUMBER | SPECIAL INSTRUCTIONS |
|---|---|---|
| Albaugh Inc. | (800) 247-8013 | |
| BASF Corporation | (800) 832-4357 | |
| Dow Agro Sciences | (800) 992-5994 | |
| E.I. du Pont de Nemours and Company | (800) 441-3637 | Medical Emergencies |
| Monsanto | (314) 694-4000 | |
| Nufarm | (877) 325-1840 | Medical Emergencies |

### C. Table 2. State Agencies:

| STATE AGENCY | TELEPHONE NUMBER | SPECIAL INSTRUCTIONS |
|---|---|---|
| Massachusetts Pesticide Bureau | (617) 626-1700 | A.S.A.P. (within 48 hours) |
| Massachusetts Department of Environmental Protection, Emergency Response Section | Main Office: (888) 304-1133<br>Southeast Region: (508) 946-2700<br>Northeast Region: (978) 694-3200<br>Central Region: (508) 792-7650 | For emergencies involving reportable quantities of hazardous materials; required info: City/town, street address, site name (if applicable), material |
| Massachusetts Dept of Public Health, Bureau of Env. Health Toxicological Program | (617) 624-5757 | |
| Massachusetts Poison Information Centers | (800) 682-9211 | For medical emergencies involving suspected or known pesticide poisoning symptoms |

### D. Table 3. Emergency Services:

| EMERGENCY SERVICE | TELEPHONE NUMBER | SPECIAL INSTRUCTIONS |
|---|---|---|
| Massachusetts State Police, Central Office | (617) 566-4500 or 911 | |
| Local Fire / Police Dept. | 911 | |
| ChemTrec | (800) 424-9300 | |
| Clean Harbors | (800) OIL-TANK | |
| Pesticide Hotline | (800) 858-7378 | PST: 6:30 am – 4:30 pm, Web: www.NPIC.orst.edu |

E. NSTAR's contact in the case of a spill or accident is:

NSTAR System Control:
Ops North, (617) 541-7825,
Electric Ops South, (617) 541-7858,
Gas Ops, (781) 441-8400

F. **Table 4. Local Emergency Numbers:**

**Emergencies Services for All Municipalities: 911**
**(to be filled out with the appropriate towns and included in the YOPs)**

| Town | Board of Health | Town/City Hall | Town | Board of Health | Town/City Hall |
|---|---|---|---|---|---|
| | | | | | |

## *CLEAN-UP PROCEDURES*

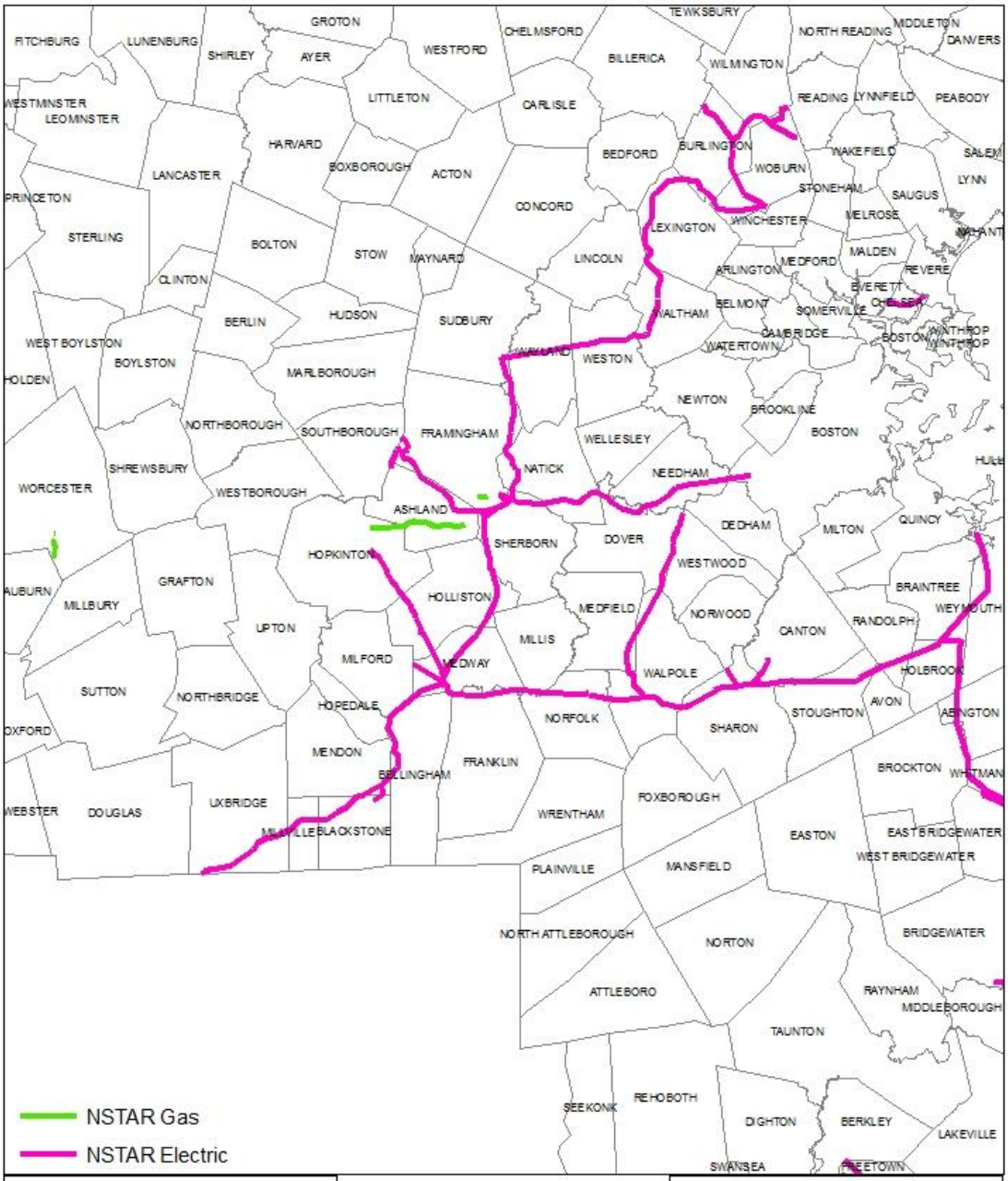
Education and attention will constantly be directed at accident and spill prevention, however, the following is a guideline in the event of an unfortunate incident:

**REPORTABLE SPILLS (Spills of reportable quantity of material):** FOLLOW STEPS 1-11
**NON-REPORTABLE SPILLS:** FOLLOW STEPS 1-4, 7-11 as appropriate & contact the NSTAR representative.

**Table 5: HERBICIDE SPILL CHECK LIST**

| Order | ACTION | | Done (√) |
|---|---|---|---|
| 1 | Use any and all PPE as directed by product label or MSDS. | | |
| 2 | Cordon-off spill area to unauthorized people and traffic to reduce the spread and exposure of the spill | | |
| 3 | Identify source of spill and apply corrective action, if possible stop or limit any additional amounts of spilled product. | | |
| 4 | Contain spill and confine the spread by damming or diking with soil, clay or other absorbent materials. | | |
| 5 | Report spills of "reportable quantity" to the Mass. DEP and DAR: | | |
| | Massachusetts DAR, Pesticide Bureau | (617) 626-1700 | |
| | Massachusetts Department of Environmental Protection Emergency Response Section | Main Office: (888) 304-1133 | |
| | | Southeast Region: (508) 946-2700 | |
| | | Northeast Region: (978) 694-3200 | |
| | | Central Region: (508) 792-7650 | |
| 6 | If the spill cannot be contained or cleaned-up properly, or if there is a threat of contamination to any bodies of water, immediately contact any of the following applicable emergency response personnel: | | |
| | local fire, police, rescue | 911 | |
| | NSTAR: Operations | (617) 541-7821 | |
| | NSTAR Transmission: William Hayes | (781) 441-3932 | |
| | NSTAR Distribution - South: Paul Sellers | (508) 957-4603 | |
| | NSTAR Distribution – North: Chris Fallon | (781) 441-3837 | |
| | NSTAR Gas- Steve Megaro, | (781) 441-8959 | |
| | Product Manufactures | | |
| | 1. BASF Corporation | (800) 832-4357 | |
| | 2. Dow Agro Sciences | (800) 992-5994 | |
| | 3. E.I du Pont de Nemours & Company | (800) 441-3637 | |
| | 4. Monsanto | (314) 694-4000 | |
| | 5. Nufarm | (877) 325-1840 | |
| | 6. Rainbow Treecare | (877) 272-6747 | |
| | Chemtrec | (800) 424-9300 | |
| | additional emergency personnel | | |
| | If there is a doubt as to who should be notified, contact State Police, Central Office | (617) 566-4500 or 911 | |
| 7 | Remain at the scene to provide information and assistance to responding emergency clean-up crews | | |
| 8 | Refer to the various sources of information relative to handling and cleanup of spilled product | | |
| 9 | If possible, complete the process of "soaking up" with absorbent materials | | |
| 10 | Sweep or shovel contaminated products and soil into leak proof containers for proper disposal at approved location | | |
| 11 | Spread activated charcoal over spill area to inactivate any residual herbicide | | |

# APPENDIX 1:
# ELECTRIC SYSTEM MAPS




# NSTAR Electric & Gas System Map

Map 1 of 3

N
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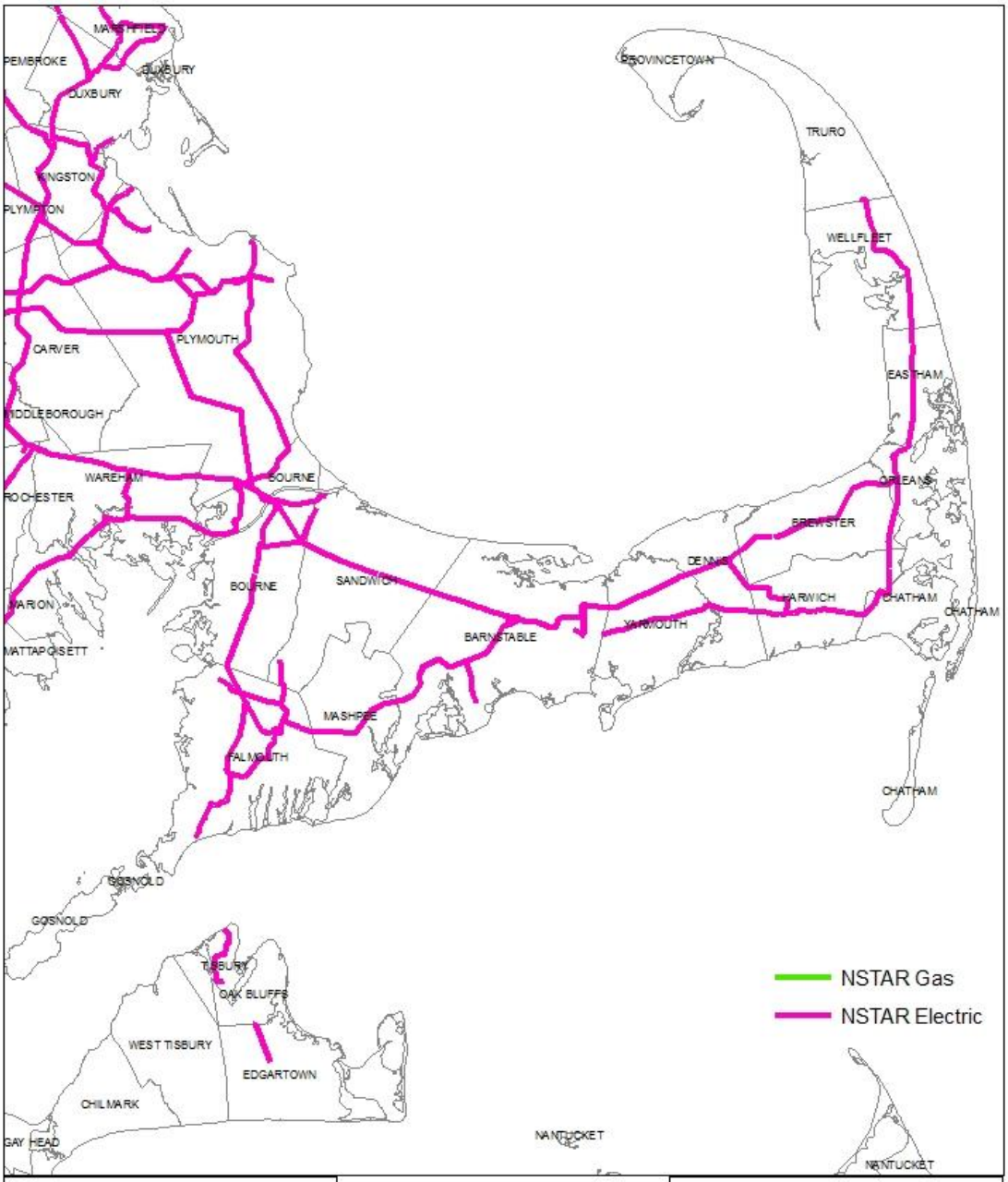
1:400,000

0 2.5 5 7.5 10 Miles


Vegetation Management Plan January 2013




Vegetation Management Plan January 2013

# APPENDIX 2:
# LIST OF MUNICIPALITIES

| MUNICIPALITIES | | |
|---|---|---|
| ABINGTON | FAIRHAVEN | ORLEANS |
| ACTON | FALMOUTH | PEMBROKE |
| ACUSHNET | FRAMINGHAM | PLYMOUTH |
| ARLINGTON | FRANKLIN | PLYMPTON |
| ASHLAND | FREETOWN | RANDOLPH |
| AVON | HALIFAX | ROCHESTER |
| BARNSTABLE | HANSON | SANDWICH |
| BEDFORD | HARWICH | SHARON |
| BELLINGHAM | HOLBROOK | SHERBORN |
| BLACKSTONE | HOLLISTON | SOMERVILLE |
| BOSTON | HOPKINTON | STOUGHTON |
| BOURNE | KINGSTON | SUDBURY |
| BRAINTREE | LEXINGTON | TISBURY |
| BREWSTER | LINCOLN | TRURO |
| BRIDGEWATER | MARION | UXBRIDGE |
| BROCKTON | MARSHFIELD | WALPOLE |
| BROOKLINE | MASHPEE | WALTHAM |
| BURLINGTON | MATTAPOISETT | WATERTOWN |
| CAMBRIDGE | MAYNARD | WAREHAM |
| CANTON | MEDFIELD | WAYLAND |
| CARLISLE | MEDWAY | WELLFLEET |
| CARVER | MENDON | WESTON |
| CHATHAM | MIDDLEBOROUGH | WESTPORT |
| CHELSEA | MILLIS | WESTWOOD |
| DARTMOUTH | MILLVILLE | WEYMOUTH |
| DEDHAM | MILTON | WHITMAN |
| DENNIS | NATICK | WILMINGTON |
| DOVER | NEEDHAM | WINCHESTER |
| DUXBURY | NEW BEDFORD | WOBURN |
| EAST BRIDGEWATER | NEWTON | WORCESTER |
| EASTHAM | NORFOLK | YARMOUTH |
| EDGARTOWN | OAK BLUFFS | |

APPENDIX 3:
333 CMR 11.00

# 333 CMR 11.00: RIGHTS OF WAY MANAGEMENT

Section


## 11.01: Purpose

The purpose of 333 CMR 11.00 is to establish a statewide and uniform regulatory process which will minimize the uses of, and potential impacts from herbicides in rights-of-way on human health and the environment while allowing for the benefits to public safety provided by the selective use of herbicides. Specific goals of 333 CMR 11.00 are to:
1. Ensure that an Integrated Pest Management (IPM) approach to vegetation management is utilized on all rights-of-way covered by 333 CMR 11.00.
2. Establish standards, requirements and procedures necessary to prevent unreasonable risks to humans or the environment, taking into account the economic, social and environmental costs and benefits of the use of any pesticide.
3. Ensure ample opportunity for public and municipal agency input on potential impacts of herbicide application to rights-of-way in environmentally sensitive areas.
4. Establish a mechanism for public and municipal review of rights-of-way maintenance plans.

## 11.02: Definitions

For the purposes of 333 CMR 11.00, unless the context clearly requires otherwise, the following definitions shall apply:
Agricultural Area includes, but is not limited to, actively cultivated gardens, greenhouses, orchards, fields, pastures, and other areas under cultivation or agricultural management.
Applicant, any person representing any federal, state or local government or agency, utility, railroad or pipeline, that intends to maintain a right-of-way in the Commonwealth by application of herbicides.

Associated Surface Water Body, as identified on the most current available maps prepared by the Department of Environmental Protection, any body of water that is hydrologically connected to a Class A surface water source.
Ballast, the coarse gravel or crushed rock on which the ties, tracks and switching, signaling and communication devices of a railroad are laid.
Broadcast, any non-selective herbicide application technique which results in application to all vegetation within a target area.
Certified Vernal Pool, a confined basin depression, certified and mapped by NHESP pursuant to the provisions of 310 CMR 10.57(2)(a)5,6, which, at least in most years, holds water for a minimum of two continuous months during the spring and/or summer, and which is free of adult fish populations.
Certified Vernal Pool Habitat, that vernal pool habitat which has been certified and mapped by NHESP pursuant to the provisions of 310 CMR 10.57(2)(a)5,6 or, in the event that such habitat has not been mapped, the area extending 100 feet horizontally outward from the boundary of any Certified Vernal Pool.
Class A Waters, waters which are designated as a source of public water supply, as defined in 314 CMR 4.05(3)(a).
Class B Drinking Water Intakes, intakes to Class B waters suitable as sources of public water supply with appropriate treatment, as defined at 314 CMR 4.05(3)(b) and as identified on the most current available maps prepared by the Department of Environmental Protection.
Department, the Department of Agricultural Resources.
FIFRA, the Federal Insecticide, Fungicide and Rodenticide Act, Public Law 92-516.
Foliar Treatment, any technique which applies herbicide to leaves of target vegetation.
Inhabited Area, any area where people generally live, work or gather, including, but not limited to, any residence, school, hospital, park or recreational facility.
Interim Wellhead Protection Area (IWPA), for public water systems using wells or well fields that lack a Department of Environmental Protection-approved Zone II, an interim wellhead protection area, as that term is defined in the Massachusetts drinking water regulations, 310 CMR 22.02, and as identified on the most current available maps prepared by the Department of Environmental Protection, shall apply. Generally, this is a ½- mile radius for sources whose approved pumping rate is 100,000 gallons per day or greater. For smaller sources, the radius in feet is determined by multiplying the approved pumping rate in gallons per minute by 32 and adding 400.

Limited Application Waiver, a waiver from the requirements of 333 CMR 11.05 and 11.06, granted at the Department's sole discretion pursuant to 333 CMR 11.03(14), when the reason for the application is emergency public health or safety or when the application is for one time only.
Limited Spray Area, any area that is both within a Right-of-Way and within:
(a) any Zone II or IWPA
(b) a distance of between 100 feet and 400 feet of any Class A Surface Water Source
(c) a distance of between 10 and 200 feet of any tributary or associated surface water body where the tributary or associated surface water body runs outside the Zone A for the Class A surface water source
(d) a lateral distance of between 100 and 200 feet for 400 feet upstream, on both sides of the river, of a Class B Drinking Water Intake
(e) a distance of between 50 and 100 feet of any identified Private Well
(f) a distance of between 10 and 100 feet of any Wetlands or Water Over Wetlands
(g) a distance of between 10 feet from the mean annual high water line of any river and the outer boundary of the Riverfront Area
(h) a distance of between ten feet from any Certified Vernal Pool and the outer boundary of any Certified Vernal Pool Habitat
(i) a distance of 100 feet of any Agricultural or Inhabited Area.
Low Pressure, pressure under 60 pounds per square inch (psi).
Maps, United States Geological Survey maps of scale 1:25,000 or other maps, as determined by the Department, which are of such accuracy and scale to provide sufficient detail so that sensitive areas can be delineated.
NHESP, the Natural Heritage and Endangered Species Program within the Massachusetts Division of Fisheries and Wildlife.
No-Spray Area, any area that is both within a Right-of-Way and within:
(a) any Zone I
(b) 100 feet of any Class A Surface Water Source
(c) 100 feet of any tributary or associated surface water body where the tributary or associated surface water body runs within 400 feet of a Class A surface water source
(d) 10 feet of any tributary or associated surface water body where the tributary or associated surface water body is at a distance greater than 400 feet from a Class A surface water source
(e) a lateral distance of 100 feet for 400 feet upstream, on both sides of the river, of a Class B Drinking Water Intake
(f) 50 feet of any identified Private Well
(g) 10 feet of any Wetlands or Water Over Wetlands
(h) 10 feet of the mean annual high-water line of any river
(i) 10 feet of any Certified Vernal Pool.
Person, an individual, association, partnership, corporation, company, business organization, trust, estate, the Commonwealth or its political subdivisions, administrative agencies, public or quasi-public corporation or body, or any other

legal entity or its legal representatives, agent or assignee, or a group of persons.
Person Aggrieved, any person who, because of an act or failure to act by the Department may suffer an injury in fact which is different either in kind or magnitude from that suffered by the general public and which is within the scope of the interests identified in 333 CMR 11.00. Such person must specify in writing sufficient facts to allow the Department to determine whether or not the person is in fact aggrieved.
Private Well, any private drinking water supply identified by the local Board of Health, the well owner or the Department of Agricultural Resources.
Private Well Registry, a registry of private wells located within 100 feet of a right-of-way which is maintained by the Department of Agricultural Resources. Homeowners must notify the Department by completing a registration form which is available directly from the Department or online at the Department website.
Public Ground Water Source, a source of water for a Public Water Supply System, as that term is defined in the Massachusetts drinking water regulations at 310 CMR 22.02.
Public Water Supplier, as defined at 310 CMR 22.02(1), any person who owns or operates a public water supply system.
Right(s)-of-Way (ROW), any roadway, or thoroughfare on which public passage is made and any corridor of land over which facilities such as railroads, powerlines, pipelines, conduits, channels or communication lines or bicycle paths are located.
Rights-of-Way Advisory Panel, a panel established to advise the Department on issues relating to 333 CMR 11.00 and to fulfill specific functions as detailed within 333 CMR 11.05 and 11.11.
River, a river as defined at 310 CMR 10.04 and as identified on the most current available maps prepared by the Department of Environmental Protection.
Riverfront Area, a riverfront area as defined at 310 CMR 10.58(2) and as identified on the most current available maps prepared by the Department of Environmental Protection. In general, this term shall mean the area between the mean annual high-water line of a perennially flowing river and a parallel line 200 feet away.
Selective Application, any application of herbicides, in such a manner that the delivery to the target vegetation is optimized and delivery to non-target vegetation and the environment is minimized.
Sensitive Areas, as defined in 333 CMR 11.04, any areas within Rights-of-Way, including No-Spray and Limited-Spray Areas, in which public health, environmental or agricultural concerns warrant special protection to further minimize risks of unreasonable adverse effects.

State-listed Species, any species on the Massachusetts list of Endangered, Threatened, and Special Concern Species as described in the Massachusetts Endangered Species Act (M.G.L. c. 131A; 321 CMR 10.02).
State-listed Species Habitat, the Estimated Habitats of Rare Wildlife (310 CMR 10.59 and 10.37) and the Priority Habitats for State-listed Species (321 CMR 10.02) as shown on the most recent edition of the Massachusetts Natural Heritage Atlas prepared by NHESP.
Stem Treatment, any technique including, but not limited to, stump, basal, stem, injection, banding, frill, or girdle and any other technique which delivers herbicide at low pressure to the stump, base or stem of the target vegetation.
Surface Water Source, any lake, pond, reservoir, river, stream or impoundment designated as a public water supply in the Massachusetts Surface Water Quality Standards, 314 CMR 4.00, as identified on the most current available maps prepared by the Department of Environmental Protection.
Target Vegetation, any plant species which has the potential to interfere with the operation and safety of the right-of-way.
Touch-up Application, any limited application of herbicides following an initial treatment, which is necessary to achieve the desired vegetation control.
Tributary, as identified on the most current available maps prepared by the Department of Environmental Protection, any body of running, or intermittently running, water which moves in a definite channel, naturally or artificially created, in the ground due to a hydraulic gradient, and which ultimately flows into a Class A surface water source, as defined in 314 CMR 4.05(3)(a).
Vegetation Management Plan (VMP), a long term management plan for the applicant's right-of-way system which describes the intended program for vegetation control over a five year period.
Vernal Pool, see Certified Vernal Pool.
Water Over Wetlands, the ocean or any estuary, lake or pond as defined at 310 CMR 10.04.
Wetland(s),
any of the following areas as defined in 310 CMR 10.02(1)(a), (b), (c) and (f):
(a) Any bank, the ocean
any freshwater wetland, any estuary
any coastal wetland, any creek
any beach, bordering any river
any dune, on any stream
any flat, any pond
any marsh, or any lake
or any swamp

(b) Land under any of the water bodies listed above
(c) Land subject to tidal action
(f) Riverfront area.
Wetlands Determination, a written determination of the boundaries of Wetlands and boundaries of areas within 100 feet of Wetlands in accordance with the regulations of the Department of Environmental Protection (DEP) at 310 CMR 10.05(3)(a)1. and 2.. 310 CMR 10.03(6)(b) require applicants not eligible for a public utility exemption to submit these determinations with their VMPs if they will apply herbicides within 100 feet of wetlands and will not submit a Notice of Intent under M.G.L.c. 131, §40, the Wetlands Protection Act. In order to obtain a Wetlands Determination, the applicant should submit a request to the conservation commission on maps of a scale that will enable the conservation commission or Department of Environmental Protection to find and delineate the boundaries of Wetlands and buffer zones within the vicinity of the right-of-way herbicide management area. To be considered "valid", the Wetlands Determination should be made no sooner than six months immediately prior to the submission of the Vegetation Management Plan. The Wetlands Determination shall cover the period of the Vegetation Management Plan only and shall expire at the end of the five year period of that Vegetation Management Plan.
Yearly Operational Plan (YOP), the yearly operational plan which describes the detailed vegetation management operation for the calendar year consistent with the terms of the long term Vegetation Management Plan.
Zone A, as identified on the most current available maps prepared by the Department of Environmental Protection, the protective land area for a Surface Water Source, Class A water source, Tributary, or Associated Surface Water Body defined in 310 CMR 22.02 as:
(a) the land area between the Class A surface water source and the upper boundary of the bank;
(b) the land area within a 400 foot lateral distance from the upper boundary of the bank of a Class A surface water source, as defined in 314 CMR 4.05(3)(a); and
(c) the land area within a 200 foot lateral distance from the upper boundary of the bank of a Tributary or Associated Surface Water Body.
Zone I, as identified on the most current available maps prepared by the Department of Environmental Protection and as defined at 310 CMR 22.02, the protective radius required around a public water supply well or wellfield. For public water system wells with approved yields of 100,000 gallons per day (gpd) or greater, the protective radius is 400 feet. Tubular wellfields require a 250 foot protective radius. Protective radii for all other public water system wells are determined by the following equation: Zone I radius in feet = (150 x log of pumping rate in gpd) –350.
Zone II, as identified on the most current available maps prepared by the Department of Environmental Protection and as defined at 310 CMR 22.02, the aquifer recharge area for a public water supply well or wellfield.

11.03: General Provisions

(1) No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way unless appropriately certified by the Department, or licensed by the Department and working under the on-site supervision of an appropriately certified applicator.
(2) No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way except in accordance with a Vegetation Management Plan (VMP) and a Yearly Operational Plan (YOP) as approved by the Department. The YOP shall be available at the work site at all times during herbicide applications and be made available to the Department and municipal officials including the Conservation Commission and Board of Health upon reasonable request.
(3) No person shall handle, mix or load an herbicide concentrate on a right-ofway within 100 feet of a sensitive area.
(4) The perimeter of any sensitive areas which are not readily identifiable on the ROW shall be identified with a clearly visible marker system, consistent with the VMP, prior to any herbicide application.
(5) No foliar application of herbicides shall be used to control vegetation greater than 12 feet in height except for side trimming.
(6) No herbicide shall be applied when the wind velocity is such that there is a high propensity to drift off target and/or during measurable precipitation, and no person shall apply herbicides in such a manner that results in drift into any No-spray Area.
(7) No person shall apply herbicides by aircraft for the purpose of clearing or maintaining a right-of-way.
(8) No touch-up applications shall be carried out except under the following conditions:
(a) Touch-up applications must occur within 12 months of the initial application.
(b) All applicable public notification procedures of M.G.L. c. 132B, § 6B, as outlined in 333 CMR 11.07(1) and (3), are followed.
(c) No more than 10% of the initially identified target vegetation on the applicant's right-of-way in any municipality may be treated and the total amount of herbicide applied in any one year shall not exceed the limits specified by the label or Yearly Operational Plan.
(d) The Department may impose such additional restrictions or conditions on the use of herbicides as it deems necessary to protect public health and the environment.
(9) The Department will maintain mailing lists of individuals and groups desiring to obtain notices on various aspects of the Program.

(10) No person shall apply any herbicide identified as a Potential Ground Water Contaminant pursuant to 333 CMR 12.00 to a right-of-way.
(11) No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way unless that person has obtained the most current available map of public ground water sources from the Department of Environmental Protection.
(12) No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way unless that person has done one or more of the following:
(a) obtained a current list of identified Private Wells within 100 feet of the right-of-way from the Board of Health, or
(b) obtained a current list of all private wells, within 100 feet of the right of way from the Department of Agricultural Resources private well registry; or
(c) followed an alternative Private Well identification method outlined in an approved YOP.
(13) The applicator shall provide any employee of any state agency, or authority as defined in M.G.L. c. 3, § 39, when such employee is, within a right-of-way, using pesticides, supervising the use of pesticides, or present during the use of pesticides, with personal protective equipment and clothing. Applicators should note that other federal or state laws or regulations pertaining to pesticide applications may require this personal protective equipment to include protections according to Material Safety Data Sheets (MSDS's), the product label, and any other supporting technical data supplied by the manufacturer.
(14) Notwithstanding the provisions of 333 CMR 11.03(2) or other provisions of 333 CMR 11.00, the Department may, at its sole discretion, issue Limited Application Waivers to applicants wishing to apply herbicides to clear or maintain rights-of-way without VMPs or YOPs, but only under the following conditions:
(a) The applicant must demonstrate either:
1. that the application will not occur more than once in a fiveyear period unless a VMP and a YOP are prepared and all other requirements of 333 CMR 11.00 are met; or
2. that the application is necessary to protect public health or safety.
(b) The applicant must still adhere to all public notification requirements established at 333 CMR 11.07(1) and (3).
(c) The applicant must provide the Department with a letter establishing the concurrence of the chief elected official or board of selectmen of the municipality where the application is to be made.
(d) The applicant may only use herbicides on the Department's "Herbicides Recommended for Use in Sensitive Areas List."
(e) If the application could impact Wetlands, the Department recommends that the applicant send a copy of its application for a Limited Application Waiver to the Department of Environmental Protection's Division of Wetlands and Waterways no less than 21 days before the proposed application.
(f) It should be noted that, with certain exceptions for public utilities, wetlands regulations at 310 CMR 10.03(6)(b) currently require

Wetlands Determinations prior to any application within 100 feet of a Wetland.
Limited Application Waivers shall be issued solely at the Department's discretion, and the Department may impose such additional restrictions or conditions on the use of herbicides as it deems necessary to protect public health and the environment.

11.04: Sensitive Area Restrictions
(1) General
In any sensitive area:
(a) No more than the minimum labeled rate of herbicide for the appropriate site, pest, and application method shall be applied.
(b) Herbicides shall only be applied selectively by low pressure, using foliar techniques or basal or cut-stump applications, or other method approved for use by the Department.
(c ) No person shall apply herbicides for the purpose of clearing or maintaining a right-of-way in such a manner that results in drift to any area within 10 feet of standing or flowing water in a wetland; or area within 400 feet of a public drinking water supply well; or area within 100 feet of any Class A surface water used as a public water supply; or area within 50 feet of a Private Well.
(d) Only herbicides specified by the Department as acceptable for use in sensitive areas pursuant to the Cooperative Agreement executed between the Department of Agricultural Resources and the Department of Environmental Protection on July 1-2, 1987, or future amendments thereto, shall be used in sensitive areas. Applicants proposing to use an herbicide which has been registered for use on rights-of-way but has not yet been evaluated pursuant to the provisions of the Cooperative Agreement may request that such herbicides be evaluated pursuant to said provisions. For an herbicide that has been evaluated pursuant to the provisions of the Cooperative Agreement, applicants proposing to use such herbicide in a manner inconsistent with the terms and conditions of use imposed in the guidelines may request a modification or waiver of such terms or conditions. A request for such modification or waiver shall provide a detailed rationale for use, with all relevant data including but not limited to environmental fate, efficacy and human health effects of the proposed herbicide. Such herbicides and/or uses shall be subject to the evaluation standards adopted by the Departments of Agricultural Resources and Environmental Protection in the Cooperative Agreement.
Commentary
Applicants not eligible for the public utilities exemption from the Wetlands Protection Act outlined at 310 CMR 10.03(6)(a), who wish to apply pesticides registered for use in Massachusetts to rights-of-way, may choose to apply herbicides determined to be suitable for use in sensitive areas in accordance with the provisions of the Cooperative Agreement mentioned above or, alternatively, such applicants may

proceed pursuant to the provisions of 310 CMR 10.00 as authorized by M.G.L. c. 131, § 40.
(e) The Department may impose such additional restrictions or conditions on the use of herbicides within or adjacent to sensitive areas as it determines necessary to protect human health or the environment. Such changes may be proposed by a municipal agency or individual during the public comment period.
(f) In the event of a question or dispute as to which setback applies to a sensitive area, the most restrictive setback shall apply.
(2) Water Supplies
(a) Public Ground Water Sources
1. No herbicides shall be applied within a Zone I.
2. No herbicides shall be applied within a Zone II or IWPA unless:
a. A minimum of 24 months has elapsed since the last application to the site; and
b. Herbicides are applied selectively by low pressure, using foliar techniques or basal or cut-stump applications.
(b) Class A Public Surface Water Sources, Associated Surface Water Bodies, Tributaries and Class B Drinking Water Intakes
1. No herbicides shall be applied within 100 feet of any Class A public surface water source.
2. No herbicides shall be applied within 100 feet of any tributary or associated surface water body located within the Zone A of a Class A public surface water source, or within 10 feet of any tributary or associated surface water body located outside of the Zone A of the Class A public surface water source.
3. No herbicides shall be applied within a lateral distance of 100 feet for 400 feet upstream of any Class B Drinking Water Intake.
4. No herbicides shall be applied within a distance of between 100 feet from any Class A surface water source and the outer boundary of any Zone A, or within a distance of between 10 feet and the outer boundary of the Zone A for any tributary or associated surface water body located outside of the Zone A of a Class A surface water source, or within a lateral distance of between 100 and 200 feet for 400 feet upstream of a Class B Drinking Water Intake, unless:
a. A minimum of 24 months has elapsed since the last application to the site; and
b. Herbicides are applied selectively by low pressure, using foliar techniques or basal or cut-stump applications.
(c) Private Wells
1. No herbicides shall be applied within 50 feet of an identified Private Well.

2. No herbicides shall be applied within a distance of between 50 feet and 100 feet of an identified Private Well, unless:
a. A minimum of 24 months has elapsed since the last application to the site; and
b. Herbicides are applied selectively by low pressure, using foliar techniques or basal or cut-stump applications.
(3) State-listed Species Habitat
(a) Any person proposing to apply an herbicide within any State-listed Species Habitat who does not have a current Yearly Operational Plan approved in writing by the Division of Fisheries and Wildlife pursuant to 321 CMR 10.14(12), shall submit all necessary materials required for review pursuant to 321 CMR 10.18.
(b )The management of vegetation within existing utility rights-of-way shall be exempt from the requirements of 321 CMR 10.18 through 10.23, provided that the management is carried out in accordance with a Yearly Operational Plan approved in writing by the Division of Fisheries and Wildlife, pursuant to 321 CMR 10.14(12).
(c ) No person shall apply an herbicide within State-listed Species Habitat unless the application is approved by the Division of Fisheries and Wildlife pursuant to 333 CMR 11.04 (3a and 3b), and such approval is submitted to the Department.
(4) Wetlands, Waters Over Wetlands, Riverfront Areas, and Certified Vernal Pools
(a) No herbicide shall be applied on or within 10 feet of a Wetland or Water Over a Wetland, within 10 feet of the mean annual high-water line of any River, or within 10 feet of any Certified Vernal Pool.
(b) No herbicide shall be applied on or within a distance of between 10 feet and 100 feet of any Wetland or Water Over a Wetland, within a distance of 10 feet from the mean annual high-water line of any River and the outer boundary of any Riverfront Area, or within a distance of 10 feet from any Certified Vernal Pool and the outer boundary of any Certified Vernal Pool Habitat unless:
1. A minimum of 12 months has elapsed since the last application to the site; and
2. Herbicides are applied selectively by low pressure, using foliar techniques or basal or cut-stump applications.
(c) Notwithstanding 333 CMR 11.04(4) (a) –(b), public utilities providing electric, gas, water, telephone, telegraph and other telecommunication services (and other applicants, if consistent with all relevant provisions of the Massachusetts Wetlands Protection Act and its regulations in effect at the time of application) may apply herbicides on or within 10 feet of a Wetland in accordance with the following conditions:
1. Submission of a study, the design of which is subject to prior approval by the Departments of Agricultural Resources and Environmental Protection, evaluating impacts of the proposed vegetation management

program utilizing herbicides on or within 10 feet of Wetlands, and comparing those impacts to those which would result if only non-chemical control methods were used in these areas. The study must detail vegetation management practices and use patterns specific to those used by the type of entity submitting the study; and
2. A finding by the Department, after consultation with the Rights-of-Way Advisory Panel, that the proposed vegetation management program utilizing herbicides on or within 10 feet of Wetlands will result in less impacts to the Wetlands than mechanical control.
3. Notwithstanding the above, no herbicides shall be applied on or within ten feet of any standing or flowing water in a Wetland.
(5) Inhabited and Agricultural Areas
No foliar herbicide shall be applied within 100 feet of any Inhabited Area or any Agricultural Area unless:
1. A minimum of 12 months has elapsed since the last application to the site; and
2. Herbicides are applied selectively by low pressure, using foliar techniques or basal or cut-stump applications.

11.05: Vegetation Management Plan (VMP)

(1) General.
(a) Unless otherwise specified by the Department, all VMPs should be submitted by the applicant no later than September 1st prior to the calendar year of the proposed first year of maintenance. All approved VMPs shall be effective for a five year period unless otherwise modified, or revoked by the Department.
(b) The VMP shall be presented on forms and/or format approved by the Department.
(2) Requirements. The VMP shall include, but not be limited to, the following:
(a) General statement of goals and objectives of the VMP.
(b) Identification of target vegetation.
(c) Intended methods of vegetation management and rationale for use, including vegetation control techniques, equipment proposed for use, timing of applications and alternative control procedures.
(d) Discussion of justification for proposed herbicide applications, including a description of the alternative control methods considered and the reasons that they were rejected.
(e) Methods, references and sources for identifying sensitive areas and control strategies proposed for sensitive areas. Applicants should note that Department of Environmental Protection regulations at 310 CMR 10.03(6)(b) currently require Wetlands Determinations for applicants that are not eligible for a public utility exemption.
(f) Operational guidelines for applicators relative to herbicide use.

(g) Identification and qualifications of individuals developing and submitting a plan.
(h) A detailed description of the IPM Program, showing how it will minimize the amount and frequency of herbicide application.
(i) Description of alternative land use provisions or agreements that may be established with individuals, state, federal or municipal agencies that would minimize the need for herbicides, including the rationale for accepting or denying any reasonable request made by any individual.
(j) Description of a remedial plan to address spills and related accidents.
(k) For state agencies and authorities as defined in M.G.L. c. 3, § 39, a description of the applicant's policy to eliminate or, if necessary, reduce the use of pesticides for any vegetation management purpose along roadways, and a demonstration that, for the proposed application, the costs of non-chemical vegetation control significantly outweigh the benefits.
(3) Public Notice, Review and Comment.
(a) Upon receipt of the proposed VMP, the Department shall schedule and hold appropriate regional public hearings affording all interested parties the opportunity to comment, both at the hearings and in writing to the Department, on the proposed plan.
(b) At least 21 days prior to the public hearings, the Department shall publish notice of the hearings in the Environmental Monitor and regionally located newspapers, and send notice to municipalities covered by the plan and to the appropriate mailing list. The notice will include locations where copies of the VMP can be reviewed.
(c) The public shall have no less than 45 days, starting from publication of the Environmental Monitor notice, to comment upon proposed VMPs, unless the Department extends the comment period for good cause.
(d) Wherever a chief elected official, Board of Health or Conservation Commission in a municipality covered by the proposed VMP requests a copy of the proposed plan, the applicant shall, at least 21 days prior to the end of the public comment period, respond to this request. The response must either include a copy of the proposed VMP, or an Internet address where the VMP may be viewed and a note that a hard copy will be provided promptly upon further request.
(4) Disposition of VMP.
(a) 25 copies of the proposed VMP shall be submitted to the Department. The Department shall distribute copies of the proposed VMP to each member of the Rights-of-Way Advisory Panel. The Department may, at its sole discretion, allow electronic presentation of the VMP in lieu of some or all of the 25 copies that would otherwise be submitted pursuant to this subsection.
(b) Within 30 days of the end of the public comment period unless extended for good cause, the Rights-of-Way Advisory Panel shall review the VMPs and recommend in writing to the Department

approval, denial or modification of each VMP; if necessary, the Advisory Panel may request additional information from the applicant.
(c) Within 21 days of the end of the Rights-of-Way Advisory Panel review period, unless extended by the Department for good cause, the Department will notify the applicant and the Advisory Panel in writing one of the following:
1. request for additional information or modification; or
2. denial of VMP; or
3. approval of VMP.
(d) The VMP may be modified, withdrawn or amended by the applicant through a written request sent by certified mail to the Department.
(e) Resubmission of a denied VMP, updating of a VMP, or a significant amendment to an approved VMP shall be processed according to 333 CMR 11.05.
(f) The applicant must send a copy of the approved VMP, or an Internet address where the VMP may be viewed and a note that a hard copy will be provided promptly upon further request, to the chief elected official, Board of Health, and Conservation Commission in each municipality covered by the plan.
(5) Time for Action. Non-action by the Department on a VMP within the time specified herein does not constitute approval of the submitted plan. In the event that the Department fails to notify the applicant of a decision within the time specified above and upon written request from the applicant, the Commissioner must issue a finding within ten days of receipt stating the reason for the delay and providing an estimated completion date.

11.06: Yearly Operational Plan (YOP)
(1) General.
(a) The applicant is responsible for the accuracy and completeness of all information submitted with the YOP. The YOP shall be consistent with the objectives of the VMP and shall describe the intended operational program for that calendar year.
(b) The YOP shall be presented on forms and in a format approved by the Department.
(2) Requirements. The YOP shall include but not be limited to the following:
(a) Maps locating the rights-of-way and sensitive areas not readily identifiable in the field;
(b) Herbicides proposed including EPA Registration numbers, application rates, carriers and adjuvants;
(c) Herbicide application techniques and alternative control procedures proposed.
(d) The name, address and phone number of the company which will perform any herbicide treatment;
(e) Identification of target vegetation;
(f) The name, address and phone number of the individual representing the YOP applicant;

(g) Description of methods used to flag or otherwise designate sensitive areas on the right-of-way;
(h) Herbicide Fact Sheets as approved by the Department; and
(i) Procedures and locations for handling, mixing and loading of herbicide concentrates.
(3) Public Notice, Review and Comment.
(a) Upon submittal of the YOP for approval, the Department will publish a notice in the Environmental Monitor. Said notice shall be provided by the applicant and shall include the information on the municipalities through which the rights-of-way pass, a brief description of the intended program, and the procedure for public review and comment. The Department shall send notification of the publication to the applicant and the appropriate mailing list.
(b) Upon submittal of the YOP to the Department, the applicant shall provide by certified mail under separate cover to the Board of Health, Conservation Commission, chief elected municipal official, and where applicable, the Massachusetts Water Resources Authority and Massachusetts Department of Conservation and Recreation, a copy of the proposed YOP (or an Internet address where the proposed YOP may be viewed and a note that a hard copy will be provided promptly upon request) and the Environmental Monitor notice for the municipality or municipalities in which the herbicide treatment is proposed. Community water suppliers shall receive electronic information or a one page notification by mail which provides details about where to receive more information. The applicant shall maintain copies of the packet sent to municipalities and certified mail receipts. The applicant shall make copies of the packet, certified mail receipts, and any further correspondence regarding hard copies of YOPs in lieu of Internet viewing, available to the Department upon request.
(c) The Department shall allow a 45-day comment period on proposed YOPs, unless extended for good cause, commencing with the publication of the notice in the Environmental Monitor and receipt of the proposed YOP and Environmental Monitor notice by each municipality.
(d) The Department may approve, deny or modify YOPs after the 45-day comment period has expired.
(4) Disposition of YOP.
(a) The applicant shall submit the YOP to the Department at least 90 days prior to the proposed commencement of application to allow completion of the comment and review period.
(b) The Department shall review the YOP to ensure that the YOP is consistent with the approved VMP. Any inconsistencies or deficiencies will be noted by the Department and returned with the YOP to the applicant.

(c) Where practical, the Department shall approve or deny the YOP within 90 days of receipt. The Department will provide notice of the decision to the applicant, municipal agencies and commentators in writing.
(d) The approved YOP in conjunction with the VMP shall govern the application of herbicide for a period not to exceed 12 months in accordance with other laws and regulations of the State and Federal governments and impose such conditions as necessary to minimize the risk of adverse effects on human health and the environment.
(5) Time for Action. Non-action by the Department on a YOP within the time specified herein does not constitute approval of the submitted plan. In the event that the Department fails to notify the applicant of a decision within the time specified above and upon a written request from the applicant, the Commissioner must issue a finding within ten days of receipt stating the reason for the delay and providing an estimated completion date.
11.07: Public Notification
(1) At least 21 days in advance of application of herbicide to a right-of-way in any city or town, the applicant shall notify the Department, the board of health and the local public water supplier and, by registered mail, the mayor, city manager or chairman of the board of selectman, and the conservation commission in the municipality where the right-of-way lies. The notice shall include the following information: the approximate dates on which such herbicide application shall commence and conclude, provided however, that said application shall not commence more than ten days before nor conclude more than ten days after said approximate dates; the method and locations of application; a Department-approved Herbicide Fact Sheet on the active ingredient(s) of the herbicide(s) used; the EPA registration number(s) for the herbicide(s) used; the name, title, business address and phone number of the certified commercial applicator or licensed applicator, or the contractor, employer or employees responsible for carrying out the application. Where specific information required for this notice is already contained in the current YOP that is on file with the local official, the applicant may incorporate the appropriate pages of the YOP by reference in its notice to that official, indicating that these pages are also directly available from the applicant upon request.
(2) This public notice may run concurrently with the public notice and comment period in 333 CMR 11.06(3), provided that the notice is distributed at least 21 days prior to the herbicide application, and that, prior to the herbicide application, the public notice and comment period has closed and the Department has granted YOP approval without modifications. When the Department's final approval requires modifications or application dates are selected after YOP approval, separate notice under 333 CMR 11.07(a) is required.
(3) At least 48 hours prior to the application referred to in 11.07(a), the applicant must publish a conspicuous notice in at least one newspaper of general circulation in the city or town where the right-of-way lies. The notice must appear in the local section of the newspaper and measure at least four by five

inches in size. The notice shall contain the following information: the method and locations of pesticide application; the approximate dates on which the pesticide application shall commence and conclude, provided that the applications shall not commence more than ten days before nor conclude ten days after said approximate dates; a list of potential pesticides to be used; a description of the purpose of the application; and the name, title, business address and phone number of a designated contact person representing the applicant from whom any citizen may request further information. The notice should apply only to the calendar year in which the notice is published. Upon request the notice must be made available to the Department.

11.08: Notice of Modification and Revocation

(1) The Department may suspend approval of any VMP or YOP, by written notice to the applicant and applicator, halting the application of herbicide to that right-of-way of the above mentioned YOP. After 21 days if the applicant does not request a hearing, the Department may revoke or modify the VMP and YOP, if it finds:

(a) that the terms, conditions of restrictions thereof, are being violated or are inadequate to avoid unreasonable adverse effects on the environment or on human health; or

(b) that the applicant has made a false or misleading statement or has not provided information requested by the Department or Rights-of-Way Advisory Panel; or

(c) that the applicant has violated any provision of the Massachusetts Pesticide Control Act or FIFRA, or any regulations, standards, orders or license issued under either.

(2) Upon notice of revocation or modification, the applicant may modify the YOP by written request to the Department. Applications to modify the YOP shall be submitted in the manner set forth in 333 CMR 11.06 and disposed of in the manner set forth in 333 CMR 11.06. The Department may waive all or part of the requirement if it determines that the proposed changes do not significantly change the terms of the approved YOP.

11.09: Rights of Appeal

Any person aggrieved by the decision of the Department to approve, deny, modify or revoke a VMP or YOP may request an adjudicatory hearing. The request for a hearing must be received by the Department within 21 calendar days after receipt of the decision. The request should state clearly and concisely the facts of the proceeding, the reasons the decision is alleged to be inconsistent with 333 CMR 11.00 and the relief sought by the adjudicatory hearing. The adjudicatory hearing before the Pesticide Board shall be conducted in accordance with the informal rules of adjudicatory proceeding as set forth in the regulations promulgated pursuant to M.G.L. c. 30A.

11.10: Penalties

Any person who violates any provision of 333 CMR 11.00 shall be subject to the criminal and civil penalties set forth in M.G.L. c. 132 B, § 14.

11.11: Rights-of-Way Advisory Panel

(1) A Rights-of-Way Advisory Panel shall be established to advise the Department on issues relating to 333 CMR 11.00 and to fulfill specific functions as detailed within 333 CMR 11.00.

(2) The Department shall request that the following members participate on the Rights-of-Way Advisory Panel: the Commissioners/Secretaries or his/her designee of the Department of Environmental Protection, the Department of Public Health, and the Executive Office of Transportation and Construction; and a representative of each of the following, all to be appointed by the Department Commissioner: the Massachusetts Association of Conservation Commissions, the Massachusetts Association of Health Boards, the Massachusetts Department of Conservation and Recreation, and an Environmental Advocacy Organization Representative, a member of the University of Massachusetts Extension who is well versed in weed science and Integrated Pest Management of weeds, a representative of the Massachusetts Railroad Association, a representative of a utility company, and a commercial pesticide applicator.

(3) Non-agency representatives shall remain on the panel for a term of five years. Any member absent from two or more consecutive meetings may be removed from the Advisory Panel at the discretion of the Commissioner of the Department, and a replacement requested from the representative agency, industry group, or association.

(4) The Advisory Panel shall meet at least once each year, and shall hold further meetings upon the request of the Department of Agricultural Resources or at the request of any two members of the Advisory Panel.

(5) All Advisory Panel members shall serve without compensation.

# APPENDIX 4:
# CHAPTER 132B

**Statutes - Pesticides**
**MGL 132B Massachusetts Pesticide Control Act**

**Chapter 132B: Section 1. Title; purpose.**

**Section 1. This chapter shall be known and may be cited as the Massachusetts Pesticide Control Act.**
The purpose of this chapter is to conform the laws of the commonwealth to the Federal Insecticide, Fungicide, and Rodenticide Act, Public Law 92-516, as amended, and the regulations promulgated thereunder and to establish a regulatory process in the commonwealth. The exclusive authority in regulating the labeling, distribution, sale, storage, transportation, use and application, and disposal of pesticides in the commonwealth shall be determined by this chapter.

**Chapter 132B: Section 2. Definitions.**
Section 2. Unless the context clearly requires otherwise, when used in this chapter, the following words and phrases shall have the following meanings:[a]

"Active ingredient", in the case of a pesticide other than a plant regulator, defoliant, or desiccant, an ingredient which prevents, destroys, repels, or mitigates any pest; in the case of a plant regulator, an ingredient which through physiological action accelerates or retards the rate of growth or rate of maturation or otherwise alters the behavior of ornamental or crop plants or the products thereof; in the case of a defoliant, an ingredient which causes the leaves or foliage to drop from a plant; and, in the case of a desiccant, an ingredient which artificially accelerates the drying of plant tissue.

"Administrator", the Administrator of the United States Environmental Protection Agency.

"Adulterated", when used with reference to a pesticide, any pesticide the strength or purity of which falls below the professed standard of purity as expressed on its labeling under which it is sold; a pesticide for which any substance has been substituted wholly or in part; or a pesticide from which any valuable constituent has been wholly or in part abstracted.

"Advisory council", a council established by regulations adopted by the department for the purposes set forth in section five.

"Agricultural commodity", a plant, or part thereof, or animal or animal product produced by a person primarily for sale, consumption, propagation, or other use by man or animals.

"Animal", all vertebrate and invertebrate species, including but not limited to man and other mammals, birds, fish and shellfish.

"Certified applicator", an individual who is certified under the provisions of section ten as authorized to use or supervise the use of any pesticide which is classified by the department as being for restricted use.

"Private applicator", a certified applicator who uses or supervises the use of any pesticide which is classified by the department as being for restricted use for purposes of producing any agricultural commodity on property owned or rented by him or his employer or if applied without compensation other than trading of personal services between producers of agricultural commodities on the land of another person.

"Commercial applicator", a certified applicator, whether or not he is a private applicator with respect to some users, who uses or supervises the use of any pesticide which is classified by the department as being for restricted use for any purpose or on any land other than as provided in the preceding paragraph.

"Licensed applicator", an individual who is licensed under the provisions of section ten as authorized to be present while pesticides classified by the department as being for restricted use are being applied under the direct supervision of a certified applicator, or to use or to be present to supervise the use or land of another for hire any pesticide classified by the department as being for general use.

"Beneficial insects", insects which, during their life cycle, are effective pollinators of plants, are parasites or predators of pests, or are otherwise beneficial.

"Board", the pesticide board, established by section three.

"Commissioner", the commissioner of food and agriculture.

"Defoliant", a substance or mixture of substances intended to cause the leaves or foliage to drop from a plant, with or without causing abscission.

"Department", the department of food and agriculture.

"Desiccant", a substance or mixture of substances intended to artificially accelerate the drying of plant tissue.

"Device", an instrument or contrivance, other than a firearm, intended to hold or dispense a pesticide and used in conjunction with a pesticide, the purpose of which is to trap, destroy, repel, or mitigate any pest or any other form of plant or animal life, other than man and other than bacteria, virus, or other micro-organism on or in living man or other living animals, but not including equipment used for the application of pesticides when sold separately therefrom.

"Director", the pesticides program director established by section four.

"Distribution" or "Distribute", to offer for sale, hold for sale, sell, barter, ship, deliver for shipment, or receive.

"Environment", includes water, air, land, and all plants and man and other living animals therein, and the interrelationships which exist among these.

"Federally registered pesticide", a pesticide which is registered pursuant to FIFRA.

"FIFRA", the Federal Insecticide, Fungicide, and Rodenticide Act, Public Law 92-516, as amended.

"Fungi" or "Fungus", non-chlorophyll-bearing thallophytes of a lower order than mosses and liver-worts, as, for example, rusts, smuts, mildews, molds, yeasts, and bacteria, except those on or in living man or other living animals, and except those in or on processed food, beverages, or pharmaceuticals.

"Imminent hazard", a situation in which the continued use of a pesticide would result in unreasonable adverse effects on the environment.

"Inert ingredient", an ingredient which is not active.

"Insect", a small invertebrate animal generally having the body more or less obviously segmented, for the most part belonging to the class insecta, comprising six-legged, usually winged forms, as for example, moths, beetles, bugs, bees, flies, and their immature stages, and to other allied classes of anthropods whose members are wingless and usually have more than six legs, as for example, spiders, mites, ticks, millipedes, and wood lice.

"Label", the written, printed, or graphic matter, on or attached to, the pesticide or device or any of its containers or wrappers.

"Labeling", all labels and all other written, printed or graphic matter accompanying the pesticide or device at any time, or to which reference is made on the label or in literature accompanying the pesticide or device, but shall not include publications of the United States Environmental Protection Agency, the United States Department of Agriculture, or Interior, or Health, Education and Welfare, state experiment stations, state agricultural colleges, and other similar federal or state institutions or agencies authorized by law to conduct research or disseminate information in the field of pesticides, except as otherwise provided by regulation of the department.

"Land", land and water areas, including airspace, and structures, buildings, contrivances, and machinery appurtenant thereto or situated thereon, fixed or mobile.

"Licensed pesticide dealer", a person who distributes pesticides classified by the department as being for restricted use or pesticides whose uses or distribution are further restricted by regulations adopted by the department, with the approval of the board.

"Misbranded", (a) in the case of a pesticide or device, if the labeling bears any statement, design, or graphic representation relative thereto or to its ingredients which is false or misleading in any particular;

(b) in the case of a pesticide or device, if it is an imitation of, or is offered for sale under the name of, another pesticide or device;

(c) in the case of a pesticide or device, if any word, statement, or other information required by or under authority of FIFRA or this chapter to appear on the label or labeling is not prominently placed thereon with such conspicuousness, as compared with other words, statements, designs, or graphic matter in the labeling, and in such terms as to render it likely to be read and understood by the ordinary individual under customary conditions of purchase and use;

(d) in the case of a pesticide, if it is contained in a package or other container or wrapping which does not conform to standards established pursuant to FIFRA or this chapter;

e) in the case of a pesticide, if it does not contain a label bearing the registration number assigned under FIFRA to each establishment in which it was produced;

(f) in the case of a pesticide, if the labeling accompanying it does not contain directions for use which are necessary for effecting the purpose for which the product is intended and if complied with, together with any requirements imposed under FIFRA or this chapter, is adequate to protect health and the environment;

(g) in the case of a pesticide, if its label does not contain a warning or caution statement which may be necessary and if complied with, together with any requirements imposed under FIFRA or this chapter, is adequate to protect health and the environment;

(h) in the case of a pesticide, if its label does not bear an ingredient statement on that part of the immediate container, and on the outside container or wrapper of the retail package, if there be one, through which the ingredient statement on the immediate container cannot be clearly read, which is presented or displayed under customary conditions or purchase, except that a pesticide is not misbranded if the administrator has permitted the ingredient statement to be placed on another part of the container pursuant to FIFRA;

(i) in the case of a pesticide, if its labeling does not contain a statement of the use classification under which it is registered;

(j) in the case of a pesticide, if there is not affixed to its container, and to the outside container or wrapper of the retail package, if there be one, through which the required information on the immediate container

cannot be clearly read, a label bearing the name and address of the producer, registrant, or person for whom the pesticide is produced; the name, brand, or trademark under which the pesticide is distributed; the net weight or measure of the content, as required by the administrator; and the registration number assigned to the pesticide by said administrator pursuant to FIFRA;

(k) in the case of a pesticide containing any substance or substances in quantities highly toxic to man, unless the label shall bear, in addition to any other matter required by FIFRA or this chapter the skull and crossbones; the word "POISON" prominently in red on a background of distinctly contrasting color; and a statement of practical treatment, first aid or otherwise, in case or poisoning by the pesticide; and (%93) in the case of a pesticide, if its container does not bear a label, as required by the department pursuant to this chapter.

"Nematode", invertebrate animals of the phylum nemathelminthes and class nematoda, that is, unsegmented round worms with elongated, fusiform, or sac-like bodies covered with cuticle, and inhabiting soil, water, plants or plant parts. Nematodes may also be referred to as nemas or eel-worms.

"Person", an individual, association, partnership, corporation, company, business organization, trust, estate, the commonwealth or its political subdivisions, administrative agencies, public or quasi-public corporation or body, or any other legal entity or its legal representative, agent or assign, or a group of persons.

"Pest", an insect, rodent, nematode, fungus, weed, or any other form of terrestrial or aquatic plant or animal life or virus, bacterium, or other micro-organism, except viruses, bacteria or other micro-organisms on or in living man or other living animal, which is declared to be a pest by the administrator or by the department with the approval of the board.

"Pesticide", a substance or mixture of substances intended for preventing, destroying, repelling, or mitigating any pest, and any substance or mixture of substances intended for use as a plant regulator, defoliant, or desiccant; provided that the term "Pesticide" shall not include any article that is a "new animal drug" within the meaning of section 201 (w) of the Federal Food, Drug and Cosmetic Act (21 U.S.C. s 321 (w), or that has been determined by the Secretary of the United States Department of Health, Education and Welfare not to be a new animal drug by a regulation establishing conditions of use for the article, or that is an animal feed within the meaning of section 201 (x) of such act (21 U.S.C. s 321 (x)).

"Plant regulator", a substance or mixture of substances intended, through physiological action, to accelerate or retard the rate of growth or rate of maturation, or to otherwise alter the behavior of plants or the produce thereof, but shall not include substances to the extent that they are intended as plant nutrients, trace elements, nutritional chemicals, plant inoculants, and soil amendments. Also, the term "plant regulator" shall not include any nutrient mixtures or soil amendments commonly known as vitamin-hormone horticultural products, intended for improvement, maintenance, survival, health, and propagation of plants, and as are not for pest destruction and are nontoxic, nonpoisonous in the undiluted package concentration.

"Produce", to manufacture, prepare, compound, propagate, process or repackage any pesticide or device.

"Producer", a person who manufactures, prepares, compounds, propagates, processes or repackages any pesticide or device.

"Protect health and the environment" or "protection of health and environment", protection against any unreasonable adverse effects on the environment.

"Registrant", a person who has registered any pesticide pursuant to the provisions of this chapter.

"Under the direct supervision of a certified applicator", unless otherwise prescribed by its labeling, a

pesticide shall be considered to be applied under the direct supervision of a certified applicator if it is applied by a competent person acting under the instructions and control of a certified applicator who is available if and when needed, and who is responsible for the pesticide applications made by that person, even though such certified applicator is not physically present at the time and place the pesticide is applied.

"Unreasonable adverse effects on the environment", an unreasonable risk to man or the environment, taking into account the economic, social and environmental cost and benefits of the use of any pesticide.

"Weed", a plant which grows where not wanted.

"Wildlife", vertebrate animals, excluding man, that are wild by nature, including fish, birds, mammals, reptiles and amphibians.

**Chapter 132B: Section 3. Pesticide board.**
Section 3. There shall be within the department of food and agriculture a pesticide board which shall consist of the commissioner of environmental protection or his designee, the commissioner of food and agriculture or his designee, the director of the division of food and drugs or his designee, the commissioner of fisheries, wildlife and recreational vehicles or his designee, the commissioner of environmental management or his designee, the commissioner of public health or his designee, and seven persons appointed by the governor one of whom shall have been engaged in the commercial production of a plant-related agricultural commodity for at least the preceding five years on land owned or rented by him, one of whom shall have been an active commercial applicator of pesticides for at least the preceding five years, one of whom shall have expertise in the health effects of pesticide use, one of whom shall be a physician, one of whom shall be experienced in the conservation and protection of the environment, and two of whom shall represent the public at large. The commissioner of food and agriculture or his designee shall be chairman of the board.

The appointive members of the board shall receive fifty dollars for each day or portion thereof spent in the discharge of their official duties and shall be reimbursed for their necessary expenses incurred in the discharge of their official duties. Each appointive member shall be appointed for a term of four years, except for persons appointed to fill vacancies who shall serve for the unexpired term. Any member shall be eligible for reappointment.

The board shall hold an annual meeting in March, and regularly at three other times annually, and from time to time at the call of the chairman or upon the request of any two members.

Seven members of the board shall constitute a quorum. The board may, by vote of a majority of its members then in office, adopt rules and regulations for the conduct of its business. Rules and regulations adopted may be amended or repealed by a two-thirds vote of its members.

The board in addition to other powers conferred in this chapter shall advise the commissioner of food and agriculture with respect to the implementation and administration of this chapter.

The pesticides program director established by section four shall attend meetings of the board, shall serve as secretary thereto, but shall have no vote in its deliberation.

**Chapter 132B: Section 3A. Pesticide board subcommittee.**
Section 3A. A subcommittee of the pesticide board shall be established and shall be charged with the responsibility of registering all pesticides for use in the commonwealth pursuant to section seven. Said subcommittee shall also be responsible for issuing all experimental use permits pursuant to section eight. Said subcommittee shall consist of five members, the director of the division of food and drugs, who shall act as chairman, the commissioner of the department of food and agriculture or his designee, the commissioner of the department of environmental management or his designee, the commissioner of public health or his designee, and one person appointed by the governor, who shall have been actively engaged in commercial application of pesticides for at least the preceding five years who shall be a

member of the pesticide board. Any person aggrieved by the decision of said subcommittee may appeal any such decision according to the provisions of section thirteen.

**Chapter 132B: Section 4. Programs director.**
Section 4. The pesticide regulatory functions conferred upon the department under the provisions of this chapter shall be under the administrative supervision of a pesticide programs director who shall be qualified by training and experience to perform such duties. Said director shall be appointed by the commissioner with the approval of the board for a term of five years. Said person shall be eligible for reappointment, but may be removed by the commissioner for cause. The position of director shall not be subject to the provisions of chapter thirty-one or the provisions of section nine A of chapter thirty. If an employee serving in a position which is classified under chapter thirty-one or in which he has tenure by reason of section nine A of chapter thirty shall be appointed director, he shall upon termination of his service as director be restored to the position which he held immediately prior to such appointment or to a position equivalent thereto in salary grade in the same state department; provided, however, that his service in such unclassified position shall be determined by the civil service commission in administering chapter thirty-one. Such restoration shall be made without impairment of his civil service status or tenure under section nine A of chapter thirty and without loss of seniority, retirement, or other rights to which uninterrupted service in such prior position would have entitled him. During the period of such appointment, the person so appointed from a position in the classified service shall be eligible to take any competitive promotional
examination for which he would otherwise have been eligible.

**Chapter 132B: Section 5. Powers and duties of department.**
Section 5. The department with the approval of the board may cooperate and enter into cooperative agreements and contracts with appropriate federal agencies, the agencies of other states, interstate agencies, other agencies of the commonwealth or its political subdivisions, or private or nonprofit organizations in matters related to the purposes of this chapter or FIFRA, and may receive from and dispense to such agencies such funds as may be available for the purposes of this chapter and FIFRA.

The department with the approval of the board shall take all action necessary or appropriate to secure for the commonwealth the benefits of FIFRA and other pertinent federal legislation.

The department with the approval of the board and subject to the provisions of chapter thirty A may from time to time adopt, amend or repeal such forms, regulations and standards as it deems necessary for the implementation and administration of this chapter.

The department with the approval of the board shall by regulation establish and formulate procedures whereby the advice or relevant advisory councils shall be sought incident to the development of policy or the adoption, amendment or repeal of regulations related to the administration of this chapter.

The department may with the approval of the board declare such pests and devices as it deems necessary to be subject to the provisions of this chapter.

**Chapter 132B: Section 6. Prohibited distributions, etc**.
Section 6. No person shall distribute a pesticide not registered pursuant to the provisions of section seven. This prohibition shall not apply to the transfer of a pesticide from one plant or warehouse to another plant or warehouse and used solely at such plant or warehouse as a constituent part to make a pesticide which is or will be registered pursuant to the provisions of this act; or the distribution of a pesticide pursuant to the provisions of an experimental use permit issued under section eight.

No person shall distribute a pesticide classified by the department as being for restricted use to a person not appropriately certified to use that pesticide. This prohibition shall not apply to the distribution of a pesticide to a competent individual acting under the direct supervision of an individual appropriately certified to use that pesticide.

No person shall distribute a pesticide that is adulterated or misbranded or a device that is misbranded.

No person shall distribute any pesticide unless it is in the registrant's or the producer's unbroken, unopened, and sealed container. This prohibition shall not apply to the repackaging of pesticides because of damage in transit.

No person shall distribute any pesticide that does not conform to any requirement of its registration or permit.

No person shall distribute any pesticide in containers that are unsafe due to damage or design.

No person shall detach, alter, deface, or destroy, wholly or in part, any label or labeling provided for in this chapter or in regulations adopted thereunder, or to add any substance to, or take any substance from, a pesticide in a manner that may defeat the purposes of this chapter or regulations adopted thereunder.

No person shall distribute, handle, dispose of, discard, or store any pesticide or pesticide container in such a manner as to cause injury to humans, vegetation, crops, livestock, wildlife, beneficial insects, to cause damage to the environment, or to pollute or contaminate any water supply, waterway, groundwater or waterbody.

No person shall act in the capacity of, or advertise as, or assume to act as a licensed pesticide dealer unless that person is in possession of a currently valid license issued by the department pursuant to the provisions of section nine. No person possessing a pesticide dealer license shall violate or allow to be violated any term, condition, restriction or provision of said license.

No person shall purchase or use a pesticide that is not registered by the department under the provisions of section seven; provided, however, that this prohibition shall not apply to the use of a pesticide consistent with the terms of an experimental use permit issued by the department under the provisions of section eight.

**Chapter 132B: Section 6A. Prohibited activities.**
Section 6A. No person shall use a registered pesticide in a manner that is inconsistent with its labeling or other restrictions imposed by the department. No person shall use a pesticide which is the subject of an experimental use permit inconsistently with the terms and conditions of said permit.

No individual certified or licensed as a pesticide applicator shall violate any provision, condition, term or restriction of his certification or license.

No person shall use a pesticide that has been classified by the department as being for restricted use unless he is an appropriately certified private applicator, an appropriately certified commercial applicator, or a competent individual acting under the direct supervision of an appropriately certified applicator.

**Chapter 132B: Section 6B. Herbicides; application by utilities; notice.**
Section 6B. No gas, electric, telephone or other utility company licensed to do business in the commonwealth shall spray, release, deposit, or apply any herbicide to any land which it owns or as to which it holds an easement or similar right and over which it maintains power, high tension or other lines without first notifying, by registered mail, the mayor, city manager or chairman of the board of selectmen and the conservation commission in the city or town where such land lies twenty-one days prior to such spraying.

The notice shall contain the following information: the approximate dates on which such spraying shall commence and conclude; provided, however, that said spraying shall not commence more than ten days prior nor conclude more than ten days after said approximate dates; the type of herbicide to be used and a copy of all information supplied by the manufacturers thereof to the utility relative thereto; the name and address of the contractor who will make the application for the utility or the name, title and business

address of the employee who will be responsible for carrying out the application if it is to be made by utility company employees.

**Chapter 132B: Section 7. Registration.**
Section 7. Pesticides, including pesticides that are federally registered may be registered by the subcommittee of the pesticide board for use in the commonwealth.

Each applicant for the registration of a pesticide shall annually file with the subcommittee an application providing thereon such information as said subcommittee shall require. Said subcommittee may require of applicants for pesticide registrations any information that it deems necessary to determine whether, or how, the pesticide should be registered.

An applicant desiring to register or reregister a pesticide shall pay such registration fee, not to exceed twenty-five dollars, as said subcommittee may by regulation require. All pesticide registrations shall be for a period not to exceed one year.

In the event that any person files with said subcommittee an application to reregister a pesticide which is registered on the date of application for reregistration and pays the appropriate fee therewith, such registration shall be deemed to be in effect until the earlier of the following two events shall occur, ninety days have elapsed after the registration was scheduled to expire, or the subcommittee notifies the applicant for reregistration that the registration has been renewed, modified or denied.

If said subcommittee determines that a pesticide, when used in accordance with its directions for use, warnings and cautions and for the uses for which it is registered, or for one or more such uses, or in accordance with a widespread and commonly recognized practice, will not generally cause unreasonable adverse effects on the environment, it may classify the pesticide, or the particular use or uses of the pesticide to which the determination applies, as being for general use.

If said subcommittee determines that a pesticide, when used in accordance with its directions for use, warnings and cautions and for the use for which it is registered, or for one or more of such uses, or in accordance with a widespread and commonly recognized practice, may cause, without additional restrictions, unreasonable adverse effects on the environment, including injury to the applicator, it may classify the pesticide or the particular use or uses to which the determination applies, for restricted use.

Said subcommittee shall register a pesticide if it determines that its composition is such as to warrant the proposed claims for it; its labeling and other material required to be submitted comply with the requirements of this chapter; it will perform its intended function without unreasonable adverse effects on the environment; and when used in accordance with widespread and commonly recognized practice it will not generally cause unreasonable adverse effects on the environment.

As part of the registration of a pesticide, said subcommittee may require that the pesticide be colored or discolored if such requirement is necessary for the protection of health or the environment, may classify for restricted use any pesticide or pesticide use classified for general use under FIFRA, and may include in the registration such conditions of use as it deems necessary.

If at any time it appears that a pesticide registration does not comply with the provisions of FIFRA, this chapter, or rules and regulations promulgated thereunder, or when used as registered, or a pesticide may cause unreasonable adverse effects on the environment, or a registered pesticide is an imminent hazard, the subcommittee as established in section three A, may, forthwith by an order suspend the registration of such pesticide. Notification of such order shall be sent to the applicant and shall be a public record.

**Chapter 132B: Section 8. Experimental use permits.**
Section 8. Any person may apply to the subcommittee for an experimental use permit for a pesticide. Each applicant for an experimental use permit shall file with the department an application providing thereon such information as the department may require. Each applicant for an

experimental use permit shall pay such registration fee, not to exceed twenty-five dollars, as the department may by regulation require.

The subcommittee may grant an experimental use permit to an applicant therefor if it determines that the applicant needs such a permit to accumulate information necessary to register a pesticide.

The subcommittee shall refuse to grant an experimental use permit if it believes that the pesticide applications to be made under the proposed terms and conditions may cause unreasonable adverse effects on the environment, or if it believes that the applicant or person to conduct the experimentation is not competent to conduct such experimentation without causing unreasonable adverse effects on the environment.

The subcommittee shall revoke any experimental use permit, at any time, if it believes that its terms or conditions are being violated, or that its terms and conditions are inadequate to avoid unreasonable effects on the environment.

**Chapter 132B: Section 9. Dealers' licenses.**
Section 9. A person may apply to the department to be a licensed pesticide dealer. Said applicants shall submit to the department a statement supplying such information thereon as the department may require. An applicant for such a license shall pay such registration fee, not to exceed twenty-five dollars, as the department may by regulation require, for each principal distribution center, branch outlet, or direct sales representative of an out-of-state distributor.

In the event that any person files with the department an application to renew a pesticide dealer's license which is in effect on the date of application for renewal and pays the appropriate fee therewith, such license shall be deemed to be in effect until the earlier of the following two events shall occur: ninety days have elapsed after the license was scheduled to expire; or the department notifies the applicant for renewal that the license has been renewed, modified or denied.

The department shall grant a pesticide dealer's license for a term not to exceed one year. The department shall grant such licenses subject to such terms, conditions and restrictions as it deems necessary or appropriate.

The department shall refuse to grant a pesticide dealer's license if it finds that the proposed distributor or his agent has acted in a manner inconsistent with the purposes for requirements of this chapter or FIFRA.

The department shall revoke any pesticide dealer's license, at any time, if it finds that its terms, conditions or restrictions are being violated or are inadequate to avoid unreasonable adverse effects on the environment.

As part of its determination to refuse to grant, or to revoke, a pesticide dealer's license the department may specify a period, not to exceed two years, within which the applicant may not reapply for a pesticide dealer's license. In the event that the department has specified a period for nonapplication, the department may later, at its discretion, shorten or waive such period.

**Chapter 132B: Section 10. Certificates and licenses; issuance, suspension and revocation.**
Section 10. Certifications and licenses to use pesticides may be issued to individuals by the department in accordance with the provisions, standards and procedures contained in and established pursuant to this chapter. Each certification and license issued pursuant to this section shall be valid only for the individual to whom it is issued, may not be transferred, and shall not continue in force and effect after the death of the individual to whom it is issued. All certifications and licenses shall be for a period not to exceed one year, unless sooner revoked or suspended.

The department may authorize individuals to use pesticides in classifications as a certified commercial applicator, a certified private applicator, and a licensed applicator provided, however, that the department shall require that all persons who are applicators of pesticides in public and private places used for

human occupation and habitation, except residential properties with three or less dwelling units, shall be so licensed or certified with such special designation.

The department may establish such categories and subcategories as it deems necessary to restrict or condition the scope of pesticide use permitted within each classification. The department may establish such standards and criteria, take such action and impose such requirements as it deems necessary to determine or redetermine levels of competence and experience to qualify for each classification and each category and subcategory thereof.

Each applicant for a certification or license shall annually file with the department an application providing thereon such information as the department may require.

Each applicant desiring to be certified or licensed shall annually pay such application fee, not to exceed twenty dollars, as the department may by regulation require.

In the event that any individual files with the department an application to renew a certification or license which is in effect on the date of the application for renewal and pays the appropriate fee therewith, such certification or license shall be deemed to be in effect until the earlier of the following two events shall occur: ninety days have elapsed after the certification or license was scheduled to expire; or the department notifies the applicant that the certification or license has been renewed, modified or denied.

The department may issue a certification or license to an applicant therefor if it determines that the applicant satisfies the criteria established for that certification or license and the category or subcategory for which the certification or license is sought. The department may thus issue a certification or license subject to such terms, conditions, restrictions and requirements as it deems necessary. The department may require that an applicant for a certification or license has obtained and maintains in effect a contract of liability insurance conforming to regulations established by the department.

The department shall prior to issuing a certificate or license evaluate each applicant to determine his competence with respect to the use and handling of pesticides, or to the use and handling of the pesticides or class of pesticides covered or to be covered by said individual's certification or license. Said evaluation shall include such examinations as the department may require. Examinations may be taken only upon payment of a fee, not to exceed ten dollars for each examination given, as the department may require by regulation approved by the board.

The department may revoke, suspend, cancel or deny any certification or license, or any class thereof, at any time, if it believes: that the terms or conditions thereof are being violated or are inadequate to avoid unreasonable adverse effects on the environment, or that the holder of or applicant for the certification or license has violated any provision of this chapter or FIFRA or any regulation, standard, order, license, certification or permit issued thereunder or that the holder or applicant for said certification or license is not competent with respect to the use and handling of pesticides, or to the use and handling of the pesticides or class of pesticides covered by said individual's certification or license. Any person whose certification or license is suspended or revoked hereunder shall also be subject to such other punishment, penalties, sanctions or liabilities as may be provided by law. As part of its determination to refuse to grant, to revoke, or to suspend a certification or license the department may specify a period, not to exceed two years, within which the applicant may not reapply for a certification or license. In the event that the department has refused to issue or has revoked or suspended such a certification or license, and has specified a period for non-application, the department may later, at its discretion, shorten or waive such period.

The department may, at its discretion, appropriately license or certify any person possessing a valid certification or license, or equivalent rating, issued by the pesticide control agency of any other state or the federal government whose standards for the issuance of such rating are not less stringent than those of the department, provided that the pesticide control agency of that state extends similar privileges to persons so licensed or certified by the commonwealth. Any person so licensed or certified shall be subject to the annual fee requirements of this section.

**Chapter 132B: Section 11. Protection of health and environment; regulations.**
Section 11. The department shall by regulation establish such restrictions and prohibitions upon the disposal and storage of pesticides, packages and containers of pesticides, and materials used in the testing or application of pesticides as it deems necessary to protect health and the environment.

**Chapter 132B: Section 12. Departmental orders; hazards; adverse environmental effects; violations.**
Section 12. Whenever it appears to the department that there is an imminent hazard, or a potential threat of unreasonable adverse effect on the environment, or a violation or a potential violation of any provision of this chapter or of any license, certification, permit, order, registration or regulation issued or adopted thereunder, the department may issue to such persons as it deems necessary an order requiring the production of samples and records, or an order imposing restraints on or requiring such action, as it deems necessary. Issuance of an order under this section shall not preclude and shall not be deemed an election to forego any action to recover for damages to interests of the commonwealth or, under section fourteen of this act, for civil penalties or for criminal fines and penalties.

**Chapter 132B: Section 13. Adjudicatory hearings.**
Section 13. Any person aggrieved by a determination by the department to register or not to register a pesticide, to suspend a pesticide registration, to issue, not issue or revoke an experimental use permit, to issue, deny, revoke or suspend any certification or license, or to issue an order, made under the provisions of this chapter, may request an adjudicatory hearing before the board under the provisions of chapter thirty A. Said determination shall contain a notice of a right to request a hearing and may specify a time limit, not to exceed twenty-one days, within which said persons may request a hearing before the board under the provisions of said chapter thirty A. If no such request is timely made, the determination shall be deemed assented to. If a timely request is received, the board shall within a reasonable time hold a hearing and comply with the provisions of said chapter thirty A. In hearings so held the board shall designate a hearing officer to preside over the hearing, to assemble an official record thereof, and to render a tentative decision as provided in paragraph (7) of section eleven of said chapter thirty A. The board shall make the final decision on the basis of the official record and tentative decision so rendered.

If, in making a determination which under the provisions of the preceding paragraph may be the subject of an adjudicatory hearing, the department finds that an imminent hazard or an unreasonable adverse effect on the environment could result pending the conclusion of the adjudicatory hearing requested thereon, the department may order that the determination shall become provisionally effective and enforceable immediately upon issuance, and shall remain so notwithstanding and until the conclusion of any adjudicatory hearing procedures timely requested. In the event that the department has thus made a determination provisionally effective, it may later, at its discretion, shorten the duration of or waive such order.

As part of a final decision in an adjudicatory proceeding held under the provisions of this section, the board may specify a reasonable time period within which the matter may be barred from further proceedings before the department or the board. In the event that the board has so specified a time period, the board may later, at its discretion, shorten or waive such period.

A person aggrieved by a final adjudicatory determination of the board may obtain judicial review thereof pursuant to the provisions of chapter thirty A.

**Chapter 132B: Section 14. Violations; penalties; injunctions.**
Section 14. Any person who knowingly violates any provision of section six shall be punished by a fine of not more than twenty-five thousand dollars, or by imprisonment for not more than one year, or both such fine and imprisonment, for each such violation, or shall be subject to a civil penalty not to exceed twenty-five thousand dollars for each such violation, which may be assessed in an action brought on behalf of the commonwealth in any court of competent jurisdiction. Each day of violation shall constitute a separate offense.

Any person who violates any provision of section six A or six B or who violates any regulation adopted under the provisions of this chapter, (a) shall be punished by a fine of not more than one thousand dollars, or imprisonment for not more than six months, or both such fine and imprisonment, for the second and each subsequent offense knowingly committed, or (b), shall be subject to a civil penalty not to exceed ten thousand dollars for any offense, which may be assessed in an action brought on behalf of the commonwealth in any court of competent
jurisdiction. Each day of violation shall constitute a separate offense.

Any person who violates any order issued under the provisions of this chapter, (a) shall be punished by a fine of not more than twenty-five thousand dollars or imprisonment for not more than two years, or both such fine and imprisonment, for each violation knowingly committed, or (b) shall be subject to a civil penalty not to exceed twenty-five thousand dollars for each violation, which may be assessed in an action brought on behalf of the commonwealth in any court of competent jurisdiction. Each day of violation shall constitute a separate offense.

The superior court shall have jurisdiction to enjoin violations of, or grant such relief as it deems necessary or appropriate to secure compliance with, any provision of this chapter or the terms of an order, license, certification, registration, permit or regulation issued or adopted thereunder.

**Chapter 132B: Section 15. Departmental personnel, agents and inspectors; powers; evidence; confidential information.**
Section 15. For the purpose of administering the provisions of this chapter, personnel or agents of the department and its inspectors shall have access and entry at reasonable times to any premises pursuant to a search warrant duly issued by a court of competent jurisdiction, provided that no sample of a pesticide obtained in the course of such inspection and no result of any analysis or test of any such sample shall be received in evidence in any criminal proceeding under this chapter unless the sample shall have been taken and the analysis or test conducted by a chemist in the agricultural extension service of the University of Massachusetts authorized by the department. Personnel or agents of the department may take such samples as are reasonably necessary to accomplish the purpose of their investigation and inspection. Any information relating to secret processes, methods of manufacture, production or use obtained in the course of such inspection shall be kept confidential upon request, when not required to be disclosed incident to the enforcement of this chapter. This section shall not be construed to abrogate any of the powers and duties, as defined by general or special law or common law, of any agency or political subdivision of the commonwealth.

# APPENDIX 5:
# SENSITIVE AREA TABLE

**CONTROL STRATEGIES FOR *SENSITIVE AREAS***

| *Sensitive Area* | No-Spray and Limited Spray Areas (feet) | Control Method | Restriction Code |
|---|---|---|---|
| Public ***Ground*** Water Supplies | 400' | Mechanical Only | None |
| Primary Recharge Area | Designated buffer zone or 1/2 mile radius | Mechanical, Recommended Herbicides* | 24 months |
| Public ***Surface*** Water Supplies (Class A & Class B) | 100' | Mechanical Only | None |
| | 100'-400' | Recommended Herbicides | 24 months |
| Tributary to Class A Water Source, within 400' upstream of water source | 100' | Mechanical Only | None |
| | 100'-400' | Recommended Herbicides | 24 months |
| Tributary to Class A Water Source, greater than 400' upstream of water source | 10' | Mechanical Only | None |
| | 10'-200' | Recommended Herbicides | 24 months |
| Class B Drinking Water Intake, within 400' upstream of intake | 100' | Mechanical Only | None |
| | 100'-200' | Recommended Herbicides | 24 months |
| Private Drinking Water Supplies | 50' | Mechanical Only | None |
| | 50'-100' | Recommended Herbicides | 24 months |
| Surface Waters | 10' | Mechanical Only | None |
| | 10'-100' | Recommended Herbicides | 12 months |
| Rivers | 10' from mean annual high water line | Mechanical Only | None |
| | 10'-200' | Recommended Herbicides | 12 months |
| Wetlands | 100' (treatment in wetlands permitted up to 10' of standing water)*[+] | Low-pressure Foliar, CST, Basal Recommended Herbicides | 12 months |
| Inhabited Areas | 100' | Recommended Herbicides | 12 months |
| Agricultural Area (Crops, Fruits, Pastures) | 100' | Recommended Herbicides | 12 months |
| Certified Vernal Pools | 10' | Mechanical Only when water is present | None |
| Certified Vernal Pool Habitat | 10'-outer boundary of habitat | No treatment without written approval per 321 CMR 10.14(12) | |
| Priority Habitat | No treatment without written approval per 321 CMR 10.14(12) | | |

Restrictions "24 Months": A minimum of twenty-four months shall elapse between applications
"12 Months": A minimum of twelve months shall elapse between applications

*Massachusetts recommended herbicides for sensitive sites

[+]Per the *DFA Decision Concerning the Wetlands Impact Study* for utilities per 333 CMR 11.04(4)(c)(2).

# APPENDIX 6:
# PREFACE TO 310 CMR 10.00

# 310 CMR: DEPARTMENT OF ENVIRONMENTAL PROTECTION PREFACE TO WETLANDS REGULATIONS RELATIVE TO RIGHTS OF WAY MANAGEMENT 1987 REGULATORY REVISION

In 1983, the Massachusetts Pesticide Control Act, M.G.L. c. 132B, was amended to require notification of conservation commissions prior to application of herbicides on rights of way. Many commissions became aware for the first time that application of herbicides on rights of way may result in alteration of wetlands and, with the exception of exempt utilities, may require action under the
M.G.L. c. 131, § 40. On July 18, 1986, the Department issued a final decision after adjudicatory hearing in DEP Hearing Docket Nos. 83-28 and 83-35 (Clinton and Leverett) finding that the application of specific herbicides by the railroads to track and ballastwithin100 feet of wetland areas would alter those wetlands and was therefore subject to jurisdiction under M.G.L. c. 131, § 40, requiring the filing of Notices of Intent with the local conservation commissions.

The Department of Food and Agriculture (DFA) initiated a Generic Environmental Impact Report (GEIR) evaluating alternatives for rights of way management. A technical advisory task force of environmentalists, agencies and rights of way managers assisted in the GEIR preparation and, based on results of the study, recommended to the Secretary of Environmental Affairs a framework for a coherent state-wide rights of way regulatory program. DFA published draft regulations to implement thisprogramin1986 and received extensive public commentary. Final regulations, 333 CMR11.00, became effective on July 10, 1987.

The DFA regulations require persons proposing to apply herbicides to rights of way to first receive approval of a five year Vegetation Management Plan (VMP) and Yearly Operating Plan (YOP). These regulations identify certain "sensitive areas", including wetlands and public and private surface and groundwater supplies, where the application of herbicides is, in most instances, prohibited, and areas adjacent to the sensitive areas where use of herbicides is curtailed.

DEP worked closely with DFA to include provisions which give maximum protection for water supplies and provide protection for wetlands at least equal to that provided under the M.G.L. c. 131, § 40 and 310 CMR 10.00. To eliminate duplicate review under M.G.L. c. 131, § 40, DEP has adopted changes to the wetlands regulations which allow herbicide applications on rights of way in accordance with the DFA regulations without filing a Notice of Intent under the M.G.L. c. 131, § 40. However, non-exempt applicants will still be required to file a Request for Determination of Applicability to the appropriate conservation commission to establish boundaries of wetlands on or near the right of way. Specifically, these regulations presume that work performed in accordance with a VMP and YOP, as may be required under DFA regulations, will not alter an area subject to protection under M.G.L. c. 131, § 40.

During the public comment period on its proposed regulations, the Department identified several issues of major concern. After consideration of all comments, the Department has determined that, except for minor points of clarification and the addition of an automatic expiration date, no further changes in the regulations are warranted at this time. A discussion of these issues follows.

A. Presumption vs. Limited Project. Several commentators suggested that conservation commissions should retain the authority to review each herbicide application on rights of way through the usual Notice of Intent process. These regulations create a presumption that herbicide application carried out in accordance with an approved VMP and YOP under the DFA regulations will not alter wetlands and that the filing of a Notice of Intent is therefore not required. This procedure was established pursuant to the recommendation of the GEIR task force which states:

The regulations which provide for approval of Vegetation Management Plans by the Department of Food and Agriculture should be conditioned on review and approval by the Department of Environmental Protection (DEP) of those portions of the Plans that deal with wetlands. The DEP should be required to certify to the DFA that these portions of the Plans will result in compliance with the substantive and procedural provisions which protect the interests of the M.G.L. c. 131, § 40. If the regulations are so drawn, activities under a Plan approved by DEP would not constitute an alteration of wetlands as defined under 310 CMR 10.00.

Since the DFA regulations provide that DEP is a member of the VMP advisory panel which reviews and makes recommendations on the approval of VMPs, the GEIR task force recommendations have been fully implemented. Therefore, the Department has determined that it would be duplicative to require the filing of individual Notices of Intent in each municipality for each application of herbicides to rights of way.

B. Adequacy of Setback from Wetlands. The DFA rights of way regulations prohibit application of herbicides on or within ten feet of wetlands and strictly limit herbicide application from ten feet to 100 feet of wetlands. Many commentators questioned the adequacy of these setback requirements and suggested that a 50 or 100 foot no spray zone would be more appropriate. Several commentators suggested that the proposed setback requirements were inconsistent with the Department's adjudicatory hearing decision in the Clinton and Leverett cases.

The no spray zone surrounding wetlands is necessary for three reasons: to compensate for mapping errors, to compensate for applicator errors and to assure that herbicides will not migrate into wetlands after application on the adjacent uplands. During the public comment period, the Department received no evidence demonstrating that the ten-foot setback established in the DFA regulations will not be adequate. The DFA regulations establish a procedure for selecting a limited number of herbicides that may be applied in the limited spray zone (from 10 to 100 feet from wetlands) which is adjacent to the no spray zone. Herbicides that will be selected for use in these limited spray zones under the DFA regulations are those which available data demonstrate will not migrate further than ten feet.

The applicators have argued that they can maintain a level of accuracy in mapping of wetlands and in application of herbicides to assure that herbicides will not be inadvertently applied within ten feet of wetland areas. The Department is not convinced that these claims are unreasonable; however, in order to confirm their accuracy, the Department has included in the final regulations an automatic expiration date two years from the effective date, which is coterminous with the expiration date of the DFA regulations. During the two-year effective period of these regulations, the Department expects applicators to conduct studies monitoring

herbicide application operations and to submit a report concerning impacts of herbicide application on wetlands under these new regulations detailing the accuracy of wetlands mapping, the accuracy of herbicide application, and the extent of herbicide migration. The results of this study will provide a basis for recommendations by the Department for amendments to the DFA regulations and a decision on reauthorization of these amendments to the Department's wetland regulations.

Finally, the Department does not find the setbacks requirements established in the DFA regulations to be inconsistent with its decision in the Clinton and Leverett cases. In that decision, the Department assumed a worst-case analysis in terms of an herbicide known to be highly mobile which was applied to the track and ballast areas adjacent to wetlands. The Department found, based on the particular facts of these cases and the particular herbicide proposed for application that there would be a migration of that herbicide into the wetlands from application within the 100-foot buffer zone that would be sufficiently concentrated to cause alterations of the wetlands plants. However, the DFA rights of way management regulations set up a procedure for identification of herbicides which are relatively immobile and which are preapproved for application on the buffer zone in order to avoid alteration of wetlands plants. Furthermore, guidelines for application of the selected herbicides will also be established. Finally, no herbicides may be applied within ten feet of wetland areas. In light of the strict controls placed on application of herbicides within the 100-foot buffer zone under the DFA regulations, the Department finds that adoptions of the proposed regulatory scheme is fully consistent with its previous adjudicatory hearing decision in the Clinton and Leverett cases.

C. Impacts of Herbicides Application on Wildlife Habitat. The Department is currently developing regulations under M.G.L. c. 131, § 40 to protect wildlife habitat, The effective date of these regulations is November 1, 1987. One commentator expressed concern regarding the impact of herbicide application on wildlife habitat in wetlands, and particularly on the habitat of rare, "state-listed" wildlife species. As discussed above, the Department has determined that the DFA regulations provide for protection of wetlands from alterations due to herbicide application. However, the DFA regulations do not include flood plains in their definition of wetlands, although those regulations do prohibit herbicide application within 10 feet of any standing or flowing surface water. Beyond that, there is no specific protection of wildlife habitat, including rare species, in floodplain areas.

The Department is concerned that the DFA regulations do not specifically address protection of wildlife habitat in floodplains, in particular those rare, "state-listed" wildlife species. Therefore, as a member of the VMP advisory panel, the Department will review VMPs for potential effect on wildlife habitat and specifically will recommend disapproval of any VMP that will have an adverse effect in areas mapped by the Natural Heritage and Endangered Species Program as habitat of any rare, "state-listed" wildlife species. Furthermore, the Department expects applicators to incorporate into the previously discussed two-year monitoring study a section detailing the effects of herbicide application on wildlife habitat in floodplains and on the habitat of rare, "state-listed" wildlife species. The Department will use the results of this study as the basis for recommending any amendments to the DFA regulations and a decision on reauthorization of these amendments to the Department's wetlands regulations.

# APPENDIX 7:
# WETLANDS STUDY

COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS
DEPARTMENT OF FOOD AND AGRICULTURE
100 CAMBRIDGE ST., BOSTON, MA 02202 617-727-3000 FAX 727-7235

WILLIAM F. WELD
Governor

ARGEO PAUL CELLUCCI
Lt. Governor

TRUDY COXE
Secretary

JONATHAN L. HEALY
Commissioner

**Decision Concerning**
**The Wetland Impact Study Conducted**
**Pursuant to 333 CMR 11.04(4)(c)(2)**

# PUBLIC UTILITY VEGETATION MANAGEMENT PROGRAM FINDING

## Background

The Rights of Way Management (ROW) Regulations (333 CMR 11:00) promulgated in 1987 prohibit the use of herbicides to control vegetation along utility right of ways on or within ten (10) feet of a wetland unless the following conditions are met:

1. Submission of a study, the design of which is subject to prior review and approval of the Departments of Food and Agriculture and Environmental Protection, evaluating impacts of proposed vegetation management programs on wetlands; and
2. A finding by the Department, after consultation with the Advisory Committee, that the proposed vegetation management program will result in less impacts to the wetland than mechanical control.
3. Notwithstanding the above, no herbicides shall be applied on or within ten feet of any standing or flowing water in a wetland.

On April 28, 1988, The Departments of Food and Agriculture and Environmental Protection approved the scope of the study. In the fall of 1989, Environmental Consultants, Inc. submitted to the Department of Food and Agriculture the study entitled, "Study of the Impacts of Vegetation Management Techniques on Wetlands for Utility Rights-of Way in the Commonwealth of Massachusetts", dated June 1989. The Department consulted with the Vegetation Management Plan (VMP) Advisory panel at their November 15, 1989, December 7, 1989 and August 1, 1991 meetings.

The study provided some broad information of vegetation control along utility right of ways. The Department based its finding solely upon the narrow scope of whether the "proposed vegetation management program will result in less impacts to the wetland than mechanical control."

The following are the major evaluation points the Department considered in reaching its decision.

**What are the Long-term and Short-term Impacts From Herbicide use and Mechanical Control?**

Since wetlands are not a static, unchanging resource, there is some difficulty in determining the actual long-term impacts from the various vegetation control practices. The extent of wetland alterations must be the most important factor in determining impacts. With limited or selective removal of unwanted plant species in specific locations, it appears that long-term impacts are negligible. While mowing or foliar application can damage non-target species, neither control practice appears to result in adverse long-term impacts if they are carefully executed. Clear cutting, however, has a greater impact on wetlands since both wanted and nuisance species are removed.

Although there were some reservations about the sites that were chosen to determine the level of chemical residues, the study did show that there was not a buildup of background residues of herbicides applied from previous practices. However, there were some trace amounts of petroleum products - bar oil or hydraulic fluid found. The source of these petroleum products is unclear and may have been the result of public activities not related to vegetation management. Retrospective analyses for herbicide residues in previously treated wetland areas is not generally applicable since the herbicides used today are less persistent than those which were used previously. However, these analyses did indicate that the herbicides used in the past do not persist in the environment.

The study clearly demonstrated that adjacent non-controlled wetland areas did not differ significantly in composition and abundance of plant species from the controlled areas. The control practices did not appear to impact the entire wetland ecosystem, since a long-term comparison of wetland plant species composition between controlled and non-controlled sites did not differ significantly. Therefore, the long-term effects on the entire wetland ecosystem were considered negligible.

The determination of the short-term impacts to the wetland from the control practices was the most noted short-coming of the study. However, this was not part of the original scope. The VMP Advisory Panel felt, and the Department agreed, that a short-term environmental fate study would be needed.

The first study indicated that certain mechanical control practices can impact wetlands and disrupt the ecosystem to a greater extent than the judicious use of herbicides. While cutting may result in re sprouting of some unwanted vegetation in a manner unlikely to be encountered in unaltered wetland areas, unregulated mechanical vegetation control could result in the destruction of other non-target plant species.

**What is the Impact to Non-target Wetland Plant Communities?**

Basal and cut stump treatment with low mobility, short persistence herbicides that are judiciously applied usually do not impact adjacent plant species. Likewise careful selective mechanical cutting (versus mowing or clear cutting) also usually does not impact non-target wetland plants. The greatest potential risk to non-target wetland plants comes from mowing, clear-cutting, and high volume foliar applications. Low volume foliar applications in wetlands may also cause non-target impacts if application guidelines are not followed (e.g. no applications during high winds, or without using anti-drift agents, etc.).

**Is There Enough Information on Which to Base a Finding?**

As in most environmental assessments, a complete database is not available to answer all of the questions posed by the Department and the Vegetation Management Advisory Panel. Some of the questions posed were entirely valid, but were beyond the scope of the approved study.

The study did provide some clear evidence that selective mechanical and herbicide use does minimally alter wetlands by removing specific plant species. Mechanical mowing operations, however, can result in far greater short-term and potentially long-term impacts to wetlands since both wanted and un-wanted plant species are indiscriminately removed. Additionally, foliar herbicide applications may cause short-term impacts to non-target species.

The Department did not find any significant difference in wetland impacts between careful mechanical removal (selective hand cutting) of unwanted species

and, cut stump or basal treatment with herbicides.

There is no assurance that prohibiting the use of herbicides in wetlands will result in careful mechanical control. If herbicide use is prohibited in wetland areas, mechanical control in wetlands will be the only practice available to utilities. Financial pressures and other considerations may force Utilities to increase mowing and / or the use of more destructive non-chemical control practices due to a lack of alternative control techniques.

On August 29, 1991, the Department made a finding that the submitted study met the approved scope. However, although the study contained useful information, it was also determined that additional data needed to be gathered and analyzed because the study was inconclusive in a number of instances.

The Department issued a finding that a proposed vegetation program containing the specific elements listed does not pose an unreasonable adverse impact to wetlands. In addition, the Department required a study be conducted to provide important environmental fate data necessary for the long-term implementation of the rights of way program.

## AUGUST 1991 FINDING

*The Department of Food and Agriculture finds that a proposed vegetation program containing the following elements will not pose an unreasonable adverse impact to wetlands:*

1. *The Integrated pest Management (IPM) system, as described in the Vegetation Management Plan and Yearly Operation Plan, is utilized in wetland areas. The IPM system must, at a minimum, place emphasis on encouraging low growth plant species to discourage unwanted vegetation and, minimizing the frequency and amount of herbicide use by only controlling specific non-conifer tree species which will impact transmission line operation and access to the right of way.*

2. *Herbicides may be applied by basal, cut stump or low volume foliar methods. Foliar applications must include the use of drift reduction agents. Foliar applications may only be conducted in situations where basal and cut stump treatments are not appropriate based on the size of the vegetation and potential for off-target drift. Foliar applications must not result*

*in the off-target drift to non-target species.*

3. *Herbicides are not applied to conifer species (pine, spruce, fir, cedar and hemlock).*

4. *Carriers for herbicides do not contain any of the following petroleum based products: jet fuel, kerosene or fuel oil. Carriers will be subjected to review by the Department of Food and Agriculture and DEP through 333 CMR 11.04(1)(d).*

5. *Herbicides must be recommended by the Department of Food and Agriculture and DEP through 333 CMR 11.04(1)(d).*

6. *Herbicides may only be applied by hand operated equipment containing no more than 5 gallons of diluent.*

7. *All other restrictions within sensitive areas remain in effect. In accordance with 333 CMR 11.04(1)(c), no person shall apply herbicides for the purposes of clearing or maintaining a right-of-way in such a manner that results in drift to any areas within 10 feet of standing or flowing water in a wetland or area within 400 feet of a public drinking water supply well; or area within 100 feet of any surface water used as a public water supply; or area within 50 feet of a private drinking water supply identified under 333 CMR 11.04(2)(c)(3).*

8. *Approved Vegetation Management Plans and Yearly Operation Plans must be amended as needed to reflect the conditions of this FINDING.*

9. *The Department further requires that environmental fate data be provided by the utilities that are applying herbicides to rights-of-way, which characterizes the movement of herbicides applied to wetland areas under these conditions. The Department further requires that all study protocols be reviewed by the Vegetation Advisory Panel and be approved by the Department of Food and Agriculture and the Department of Environmental Protection. Failure to submit the required information by the dates outlined in the schedule below will render this finding void.*

*An approvable scope of the study developed and*

*submitted by January 1, 1992.*

*Field data submitted to DFA by October 1, 1992. Data must be consistent with the requirements of the approved scope.*

*Draft study report submitted to DFA by October 1, 1993.*

*Final Report submitted to DFA by March 1, 1994.*

10. *The Department reserves the right to amend or withdraw its FINDING at anytime if it determines that the use of herbicides in wetland areas poses a greater impact than mechanical control or may pose an unreasonable adverse effect to humans or the environment.*

11. *This finding expires December 31, 1994.*

*Therefore, herbicide use may be allowed to control certain vegetation along utility right of ways if the proposed vegetation program as described in the approved Vegetation Management Plan and Yearly Operational Plans contains the above elements.*

On, April 27, 1992, the Departments of Food and Agriculture and Environmental Protection approved the scope of the *"Study of Fates of Herbicides in Wetlands on Electric Utility Rights of Way in the Massachusetts Over the Short Term"*. The final report was submitted to the Department of Food and Agriculture December 31, 1993. The Department began reviewing the report in consultation with the VMP Advisory panel.

At the end of 1994, the Department had not completed its review. Therefore, on December 22, 1994 the Department extended the current finding for one year (to December 31, 1995) or until such time it is able to make a final determination, whichever occurs first.

## Fates of Herbicides Over the Short Term Study

The objective of this study was to determine the short term environmental fate and assess the impacts of selected herbicides applied by four common Right-of-Way management techniques. Additionally, the study evaluated which of the four Right-of-Way management techniques provides the most effective control of target vegetation and which techniques produced the least impact on the non-target plant community, and consequently the least alteration of wooded wetland community.

The study investigated the environmental fate of two herbicides, which are typically used to control vegetation on ROWs, and are included in the list recommended for use in sensitive areas. These herbicides were chosen, among other reasons, for their use patterns, size of area treated, and application rates. Accord, which contains the active ingredient glyphosate, is the primary herbicide used for cut stump treatment and is also used for foliar application. Garlon 4, which contains the active ingredient triclopyr, is the primary herbicide used for basal applications. Collectively these products represent the typical herbicides used to control vegetation on ROWs.

Results

A summary of the most important findings and conclusions of the study include:

* Based upon the samples collected immediately after application, at 1 week, 1 month, 3 months and 1 year:

  - The two herbicides, glyphosate and triclopyr degrade rapidly. Residues reach low quantities quickly, often less than detection limits, within a year.; and
  - There is essentially no movement either laterally or vertically from the treated sites by glyphosate. Triclopyr does not move laterally, but was noted to move vertically in small amounts.

* Drift cards indicate that the herbicides are neither splashed nor carried any distance by the wind. Glyphosate drift is not a significant problem resulting in slight effects on neighboring vegetation and are not detectable in the next year's growth. Sphagnum moss next to trunks treated basally with triclopyr were killed within three months in a 15 cm diameter circle immediately around the target tree, but the dead circle did not continue to enlarge.

* Filter paper recovered immediately after application of herbicide showed that all methods of application deposit herbicide on the ground. Treated bare soil samples showed as consistent a drop in herbicide concentrations and as little vertical movement as did samples beneath target trees.

* The use of the herbicides glyphosate and triclopyr at the strengths and application rates used does not pose a risk of accumulation in organically rich soils.

* Herbicide concentrations in soil continue to decline as time advances.

* Rainfall occurring more than a week after application does not appear to spread the herbicide nor does groundwater carry any substantial fraction of what has been applied to a particular site down into the soil or horizontally.

* Based upon the results of the study, an assessment of the environmental fate, and observations of both treatment effectiveness and non-target impacts, an effective and environmentally sensitive ranking from most effective and posing least potential environmental risks to least effective and posing the most environmental risk is suggested:

1. Most effective control and exclusive effect on target:
   low-volume foliar (with glyphosate).

2. Most consistent control with lethal effects on bordering vegetation:
   high-volume foliar (with glyphosate)

3. Total control with rings of dead vegetation around treated trunks:
   low-volume basal (with triclopyr)

4. Incomplete target control and leaving largest soil residues:
   cut-stump (with glyphosate)

It is important to note that the results of the second short term study suggest that the most efficacious application techniques and which pose the lowest environmental risk were not those recommended in the interim finding.

## DEPARTMENT DETERMINATION

Based upon the results of the two ROW impact studies, the general information in the literature, and after consultations with the Vegetation Management Panel, the Department finds that the following proposed vegetation management program will result in less impacts to wetlands than exclusive use of mechanical control methods. Therefore, the Department finds that any vegetation management program that incorporates the conditions under which the study was conducted as well as taking into account the results of previous studies, will result in the least impacts to wetlands.

These conditions include:

1. An Integrated Pest Management (IPM) system, also known as Integrated Vegetation Management (IVM), as described in the Vegetation Management Plan and Yearly Operation Plan is utilized in wetland areas. The IPM system must, at a minimum, place emphasis on encouraging low growth plant species to discourage unwanted vegetation and, minimizing the frequency and amount of herbicide use by only controlling specific non-conifer tree species which will impact transmission line operation and access to the right of way.

2. Herbicides may be applied by low volume foliar, basal, or cut stump methods. Foliar applications must include the use of appropriate drift reduction agents, and must not result in the off-target drift to non-target species. Basal and cut-stump treatments may be conducted in those situations where the size of the vegetation, potential for off-target drift, or other considerations precludes the use of low-volume foliar applications. Cut stump and basal applications shall be restricted, when practicable, to periods when static ground water levels are low or otherwise when conditions are less susceptible to potential contamination.

3. Herbicides are not applied to conifer species (pine, spruce, fir, cedar and hemlock).

4. Carriers for herbicides do not contain any of the following petroleum based products: jet fuel, kerosene or fuel oil. Carriers will be subjected to review by the Department of Food and Agriculture and DEP through 333 CMR 11.04(1)(d).

5. Only herbicides recommended by the Departments of Food and Agriculture and Environmental Protection through 333 CMR 11.04(1)(d) may be used in sensitive areas.

6. Herbicides may only be applied by hand operated equipment containing no more than 5 gallons of diluent.

7. All other restrictions within sensitive areas remain in effect. In accordance with 333 CMR 11.04(1)(c), no person shall apply herbicides for the purposes of clearing or maintaining a right-of-way in such a manner that results in drift to any areas within 10 feet of standing or flowing water in a wetland or area within 400 feet of a public drinking water supply well; or area within 100 feet of any surface water used as a public water supply; or area within 50 feet of a private drinking water supply identified under 333 CMR 11.04(2)(c)(3).

8. A minimum of twelve months must elapse between herbicide treatments. Only touch-up applications may be performed between twelve and twenty four months.

9. Approved Vegetation Management Plans and Yearly Operation Plans must be amended as needed to reflect the conditions of this determination.

.....

Therefore, herbicide use may be allowed to control certain vegetation along utility right of ways if the proposed vegetation program as described in the approved Vegetation Management Plan and Yearly Operational Plans contains the above elements.

Jonathan Healy, Commissioner

10/12/95
Date

# APPENDIX 8:
# CHAPTER 85, SECTION 10

## CHAPTER 85 OF THE ACTS OF 2000

### SECTION 10.

Said chapter 132B is hereby further amended by striking out section 6B, as appearing in the 1998 Official Edition, and inserting in place thereof the following section:

### Section 6B.

a. No gas, electric, telephone or other utility company licensed to do business in the commonwealth, nor any agency of the commonwealth or any of its political subdivisions, nor any authority, as defined in section 39 of chapter 3, nor any private entity or their agent, shall spray, release, deposit or apply any pesticide to any land which it owns, or as to which it holds an easement or similar right and over which it maintains power, high tension or other lines, or to any roadway, railway, or other transportation layout, without first notifying the department and, by registered mail, the mayor, city manager or chair of the board of selectmen and the conservation commission in the city or town where such application is to occur 21 days before such spraying, release, deposit or application, and without first publishing conspicuous notice in at least one newspaper of general circulation in each city or town where such land lies at least 48 hours prior to such spraying, release, deposit or application. Such notice shall appear in the local section of the newspaper and measure at least four by five inches in size. The published notice shall include: the method and locations of pesticide spraying, release, deposit or application; the approximate dates on which spraying, release, deposit or application shall commence and conclude, but such spraying, release, deposit or application shall not commence more than ten days before nor conclude more than ten days after such approximate dates; a list of potential pesticides to be used; a description of the purpose of the spraying, release, deposit or application; and the name, title, business address and phone number of a designated contact person from whom any citizen may request further information.

b. The notice to the city or town where the affected land lies shall contain the following information: the method and locations of pesticide spraying, release, deposit or application; the approximate dates on which such spraying, release, deposit or application shall commence and conclude, but such spraying, release, deposit or application shall not commence more than ten days before nor conclude more than ten days after such approximate dates; the type of pesticide to be used and a copy of all information supplied by the manufacturers thereof relative to the pesticide; a department-approved fact sheet and United States Environmental Protection Agency registration number for each pesticide; the name, title, business address and phone number of the certified commercial applicator, certified private applicator or licensed applicator, or the contractor, employers or employees responsible for carrying out the pesticide spraying, release, deposit or application.

c. Notwithstanding any other provision of law, all agencies of the commonwealth and all authorities, as defined in section 39 of chapter 3, shall develop policies to eliminate or, if necessary, reduce the use of pesticides for any vegetation management purpose along any roadway.

d. Any employee of any state agency, or authority, as defined in section 39 of chapter 3, when spraying, releasing, depositing or applying pesticides, supervising the use of pesticides, or when present during the spraying, release, deposit or application of pesticides, shall be provided with personal protection equipment and clothing in conformance with all federal and state laws and regulations pertaining to pesticide applications. This shall include, but not necessarily be limited to, protections according to Material Safety Data Sheets (MSDS), the product label, and any other supportive technical data provided by the manufacturer.

# APPENDIX 9:
# IDENTIFICATION AND QUALIFICATIONS OF INDIVIDUAL WRITING THE PLAN

# The qualifications of the individuals that supervise, developed and wrote the VMP

William Hayes, Senior Transmission Arborist
NSTAR Electric & Gas Corporation
Plng, Schdlg & Cntrct Svcs Dept.
One NSTAR Way, SE-370
Westwood, MA02090-9230
781-441-3932 (office)

William N Hayes, Jr. qualifications extend from his education to his work history. He has a B.S. in Forestry Management and Arboriculture/Urban Forestry from the University of Massachusetts. After building a substantial resume in work related to utility arboriculture, he is currently the Senior Transmission Arborist at NSTAR Electric.

Responsible for implementing the vegetation management programs best practices on transmission, distribution and gas systems. He also develops and evaluates methods for vegetation management to ensure transmission and distribution system reliability in compliance with regulations and standards which he translated to provide direction to utility line clearance contractors and NSTAR arborists. His credentials include Massachusetts Certified Arborist, International Society of Arboriculture Certified Arborist, Massachusetts Category 40 Pesticide License, Consumers Power Co. Certified Basic Tree Trimmer. He is a member of the Massachusetts Arborist Association, Massachusetts Tree Wardens & Foresters Association, Southeastern Tree Wardens & Arborist Association, Utility Arborist Association and the International Society of Arboriculture.

Wendy L. Priestley, Ph.D.
Vegetation Control Service, Inc.
2342 Main Street
Athol, Massachusetts 01331

Dr. Priestley's qualifications extend from her education to work experience in the field of herbicide application, crew management and VMP consulting:

Dr. Priestley holds a Ph.D. in American Civilization from The George Washington University, Washington, DC. In this capacity her research, analytical and organizational skill have aided her efforts in writing Vegetation Management Plans.

She has worked both part time and full time since 1985 for Vegetation Control Service, Inc., a consulting and service company that provides vegetation management programs for utilities, government agencies, municipalities, private business and landowners throughout New England. In this capacity, she is a certified pesticide applicator and her experience includes both field and administrative experience in rights-of-way and industrial weed control programs. Since 1985, she has written or co-authored a number of Vegetation Management Plans for utilities and municipalities both in Massachusetts and throughout New England.

# APPENDIX 10:
# REFERENCES

# REFERENCES

**SENSITIVE MATERIALS LIST:**

A current list of the *Sensitive Area Materials List* and individual *Fact Sheets* on these herbicides are available at:

http://www.mass.gov/eea/agencies/agr/pesticides/rights-of-way-vegetation-management.html

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