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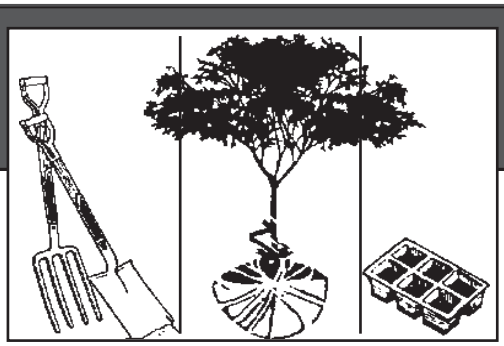

An educational newsletter with research-based information for businesses and individuals involved in selling, planning, designing, servicing, and enjoying landscapes and gardens.

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Herbicides and Utility ROWs

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There has been a considerable amount of debate recently at public meetings in Massachusetts and in the press about the use of herbicides by the utility industry. The main thrust of this debate has been that all herbicides are bad for people and the environment. Citizen groups and individuals are expressing their concerns to the utility companies, and to their local and state governments. Most list a variety of reasons why herbicides / pesticides should not be used, including:

1. The testing of approved herbicides is insufficient and outdated.
2. Chemicals in combination are more toxic than individually, yet they are tested individually.
3. Crop damage from overspray has occurred and private wells are at risk.
4. People use trails that cross power lines and spraying is not posted.
5. Childhood cancer and asthma are on the rise.

This list could go on but you get the idea. Some of their concerns have some basis in fact; drift to non-target areas is unacceptable and sprayed areas could easily be posted. Many of the concerns show a complete lack of faith in both corporate America and in government agencies. These beliefs can lead to very heated public meetings at which all involved parties, utilities companies and anti-pesticide groups, seem to leave the meetings upset and confused.

Why Manage Right-of-Ways (ROW)

What many people do not realize is that the utility industry is required by both law and litigation to keep vegetation away from their ROW utility wires. The two main reasons why the utility industry is required to keep electric lines free of conflicts with vegetation are safety of the general public and electric reliability. Electric lines that come in contact with trees cause both reliability and safety problems for the utility company and the general public. A tree growing in contact with electric wires can conduct electricity.

Reliability is also a major issue. Today the general public and business are more dependent then ever on a steady and reliable flow of electricity. When the lights go out today, it's not just the lights, but also computers, medical apparatus, traffic lights and the air traffic control system for a major airport. The bottom line is that the utility industry is required to keep the electricity flowing both safely and reliably. If the utility company fails to do this, they are held accountable.

Trying to have an open-minded debate concerning herbicides is difficult. We still have people in the tree care industry, fortunately very few, that believe we should be able to spray whatever we want whenever we want. At the opposite end, we have citizens that believe all pesticides are bad and should be banned. Quite frankly, we are not going to win the debate with either of these groups. What we need to do is educate both the Right of Way (ROW) managers and the general public, most of whom are in the middle and open to factual information.

ROW Management Strategies

There are basically three ways to maintain a ROW - Mechanical, Chemical and Biological or Integrated Vegetation Management (IVM). Each of these systems has advantages and disadvantages, financial, environmental and with worker safety.

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Mechanical

Maintaining a ROW using mechanical means is as old as utility wires and started with telegraph lines in the late 1800s. There are two main ways of mechanically removing vegetation - sawing and mowing.

With saws, we can remove individual plants and thus can be selective. In an area that is smooth and contains many stems, this would be an expensive way to remove tall trees. However, on steep or rocky areas, this may be the only way to do the job. Unfortunately, working on a steep sloop, especially in a rocky area with a chain saw or brush cutter, can be very dangerous work for a ROW technician.

Mowing can be more cost effective on smooth land, but it leaves the site looking like a war zone and may also allow for the introduction of non-native invasive species. The biggest problem with using a mechanical means to maintain a ROW is the response of the trees to being cut down. As a result of the Top / Root Ratio, when we cut the top of a tree off, we leave all of the roots intact in the ground. Farmers and foresters have used this system for centuries to produce fast growing firewood. The practice is called coppicing and results in a flush of watersprouts originating from the original stump. Tree and woody brush density is increased as a result of not killing the root system. It is not uncommon for tall growing trees such as oak, poplar or maple to grow more than ten feet in the first year following mechanical cutting, if their root system is not controlled.

While mechanical cutting can and needs to be used on some sites, in most situations it is not a first choice because of the aesthetic and environmental problems it can produce.

Chemical

Chemical herbicide treatments became widely used following World War II. Following the war, we were very proud of several new miraculous cures for our problems - antibiotics for our children, DDT to control gypsy moths and 2,4-D to manage our ROWs. Obviously, everything did not quite work out the way we planned, and we made some mistakes. But herbicides properly used are a tool that can be used to maintain ROW vegetation in a financially acceptable manner, be safe to use and be environmentally sound.

There are currently three medium to low density programs being used by utility systems today to maintain ROW lines in Massachusetts.

1. **Cut stump** - This technique, often called Cut & Squirt by the ROW technicians, is especially suited for individual tree removal on ROW lines or in populated areas. It eliminates the leaving of standing dead tree skeletons that some other techniques would leave. The tree worker fells the tree and the freshly cut stump surface is treated with the herbicide. The treatment usually takes place with a hand sprayer, thus using very little active ingredient per stump or per acre. The result is that the roots are killed and there is very little resprouting.

2. **Low volume basal** - This is an effective treatment method that allows the technician to target only tall growing problem plants, those that could grow up into the lines, without affecting neighboring low growing shrubs, grasses or herbaceous plants. Resprouting is thus controlled.

3. **Low volume foliar**. When many of us think of foliar sprays, we remember the old days of total brown-outs along the entire ROW. Fortunately, most utility companies today do not advocate this practice. If your ROW is located in an area where you can tolerate minimal brownout, then low-volume foliar treatments can be used effectively to control low to medium height vegetation.

The ROW technician usually applies the herbicide using a backpack sprayer and, at close range, sprays the individual plants. This system allows for selective spraying, thus protecting non-target plants while killing the roots of the tall growing trees.

The above programs can be used in sensitive areas, will kill the roots of tall growing trees, thus saving beneficial species in an environmentality friendly, and in a cost effective manner. In addition, some utility ROW programs are working with state officials to also control non-native invasive plants while doing the utility work.

Biological / Integrated Vegetation Management

Most utility ROW managers and the general public would agree that the best method to use on a ROW is a biological or IVM approach. Managing a ROW in this manner encourages the creation of a vegetative mass of dense low growing plant communities. The biodiverse plants that would be encouraged would be grasses, ferns, herbaceous wildflowers, bushes such as blueberry and bayberry, and low growing trees such as dogwood. The tall growing trees that have the potential to grow up into the ROW lines would be aggressively discouraged.

The methods used to control the tall growing trees would be mechanical and chemical. We remove the tall trees and encourage the low dense growth. This type of management reduces the seeding in of new trees because the ground cover does not allow the light necessary for trees seeds to germinate.

Once this dense growth of low plants has been established, it is very easy using low volume herbicide applications, such as cut stump or low volume foliar, to maintain the dense groundcover vegetation with periodic treatments to eliminate any tall growing trees that may have seeded in. The volume of chemicals used to maintain a ROW in this manner would be much less than what the average suburban homeowner in Massachusetts uses on their lawn.

In analyzing the use of herbicides on a ROW, one has to take into consideration both the cost / benefit of using herbicides and the cost / benefit of **NOT** using herbicides. For every cost - financial, environmental, worker safety - there should be a benefit that outweighs any negative aspects of the treatment, BUT, one has to remember or take into consideration that sometimes the cost of not doing something is more costly - financial, environmental, worker safety - than doing the debated treatment. Remember, the utility industry is required by law to keep their electric lines safe and reliable. So, if we are not allowed to use the herbicide treatment, how will we keep the electric flow safe and reliable and what will the alternative treatment cost - financially, environmentally and for worker safety?

Cost / Benefit

If we can assume that the ultimate goal of both the concerned public and ROW managers is to manage ROWs based on the Biological or IVM approach, then we need to look at the cost / benefit based on that strategy. Examples:

1. **Aesthetics** - A ROW that contains trees and shrubs and is then mowed will look terrible, especially when compared to a ROW that is well maintained with low volume herbicide applications. While a mowed ROW may make the utility company happy, most of the general public will find the view upsetting.

2. **Safety** - Worker safety is or should be a priority with all utility companies and contractors. Working with chainsaws and mowers on a rough site can be very difficult for the workers. IVM ROW management will increase worker safety and reduce serious accidents.

3. **Environmental issues**

   Water - One of the major concerns that the public has is how the herbicides will affect water quality. If the ROW is in the vicinity of water or over an aquifer, then there are situations where herbicides cannot be used and alternative methods will have to be used. There are also herbicides that are registered for use near and on water. If water is an issue, then the manager will need to consider a material that is compatible with the site in question. We need to keep in mind that the alternative to not using herbicides, in most cases, would be for the utility to mow this site. Mowing in many cases could result in rutting, fuel spills and erosion problems, leading to a degradation of water quality.

   Birds and animals - When grasses and ground hugging plants flourish, wildlife does too. Anyone who has spent time outdoors and has flushed a deer from its bed or had the pleasure of watching rare birds or butterflies knows that you will not find this biodiverse habitat on a mowed ROW and you will not find the wildlife either.

Conclusion

With the recent finding of the silver-haired black bee on a utility ROW that was thought to be extinct since 1927, the *Boston Globe* (Nov. 22, 2009) reported that there is a new appreciation by ecologists for utility ROWs. What the utility ROWs are supplying is a recreation of the New England meadow and shrub landscape that once dominated this area. These areas are critical habitat for many birds, insects, animals and plants that require this type of habitat to reproduce and survive.

Environmental concerns play a more prominent role than ever in the day-to-day activities of a ROW manager. We all understand the importance of protecting the quality of our environment and our natural resources. But when the environmental site is a ROW, maintenance and ease of access are also important. The key to a successful ROW management program is to balance the needs of nature and the needs of the public to have an adequate supply of electricity.

Pesticides are tools and, just like a chainsaw or a lawn mower, if they are used properly can be an asset for both the user and the job site. But if used improperly, by untrained or uncaring workers, they can become a problem for both the worker and the environment. When used properly, ROW herbicides are safe for the ROW workers and are environmentally friendly.

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The Winter Moth - *Operophtera brumata* (L.)

Deborah Swanson, UMass Extension Landscape, Nursery and Urban Forestry Program and Plymouth County Extension

2010 Preview: Starting in the second/third week of November, we started seeing increased numbers of winter moth adult moths in most areas of Massachusetts where this pest has been a problem in previous years. This includes: all of coastal Massachusetts, inland to the Worcester area, Cape Cod, Martha's Vineyard, as well as Rhode Island.

Dr. Joe Elkinton, UMass Entomologist, and his staff are banding trees to trap females to estimate egg counts, and the numbers are sobering. In Hanson, Mass., in a four-day sample, 998 females were collected from one oak tree. Three nights later, over 500 females were caught on bands on that same tree. We know that each female may lay between 150-250 eggs, so, for that oak tree alone for just those seven nights, there may well be over 200,000 eggs! And, the moth flight usually continues through December, usually when temperatures are above freezing.

Based on the prolific numbers of winter moths observed this fall and the preliminary counts of female winter moths caught on bands, it is predicted that winter moth caterpillars may be quite prevalent once again in those areas during the spring of 2010 and may cause much defoliation damage to untreated trees and other plants.

There is nothing that can be done at this time of year to reduce winter moth caterpillar populations for next spring. It is important to remember for next spring (early – mid-April) to monitor expanding tree buds and developing leaves for winter moth caterpillars on susceptible trees and manage early, if needed. Those trees that may be subject to heavy defoliation by winter moth caterpillars will be severely stressed. Trees must put out a second flush of growth after being defoliated in order to survive. Water is critical for trees at that time. Supplemental watering of trees stressed through defoliation will be necessary throughout the 2010 growing season if a drought or little rainfall occurs naturally. Fertilizer application is not recommended for trees that have been defoliated.

For more information on winter moth, go to **www.umassgreeninfo.org**

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