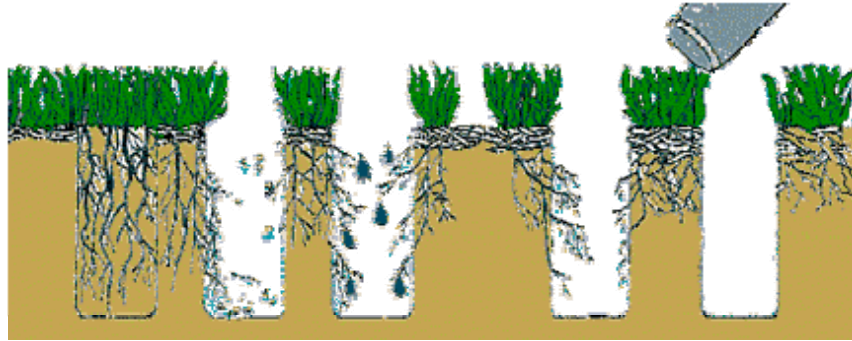


### **What is Aeration?**

Aeration is one of the most important things you can do for your lawn. It is the process of removing thousands of plugs of thatch and soil approximately 2 inches deep and 5/8" in diameter from the lawn to improve soil aeration.



Core aeration helps the lawn's health and vigor, and it reduces maintenance requirements. The following are other benefits of core aeration:

- Improves air exchange between the soil and the atmosphere
- Enhances soil water uptake
- Improves fertilizer uptake and use
- Improves turf grass rooting
- Reduces soil compaction
- Enhances heat and drought stress tolerance
- Improves resiliency and cushioning
- Accelerates thatch break down

### **Why is Lawn Aeration Necessary?**

In most cemetery lawns, the natural soil has been seriously distributed by the burial process. Fertile top soil may have been removed or buried during excavation of gravesite or for foundation footings, leaving top soil that is more compacted, higher in clay content and less desirable for healthy lawn growth. These lawns need aeration to improve the depth and extent of turf grass rooting and to improve fertilizer and water use.

The ROOT SYSTEM of cemetery lawns is constantly attempting to renew itself by forming and sending out new shoots. This new growth is more extensive in loose open soil. In clay soils or heavy compacted soil, new roots will stay near the soil surface. If there is a thatch build up and the soil is hard, new roots mat remain in the thatch layer. This produces a lawn that dries out quickly and accumulates thatch at an accelerated rate compared to a lawn that is deeply rooted.

Compaction is greater in heavy clay soils, and it is most prevalent in the upper 1 to 1 1/2 inches of soil. Aeration helps lawn growing in compacted soils and heavily used lawns by improving the depth and extent of turf grass rooting, allowing better water uptake, enhancing fertilizer use, and speeding up thatch breakdown.

Most lawns are subject to thatch accumulation. Thatch is a tight layer of living and dead roots and stems which accumulate at the soil surface. Thatch accumulation will cause the grass roots to be shallow making the turf susceptible to damage by heat, drought, environmental stress, and disease infestation. If thatch is left unmanaged it will lead to serious maintenance problems.



The aeration process reduces thatch build up, minimizes its accumulation, and modifies its make up by incorporating soil with the thatch. As soil is combined with thatch debris, soil organisms are better able to break down the thatch and reduce accumulation.

Thatch accumulates faster on compacted soils, clay soils, and subsoils that are disturbed during the burial process. Therefore lawns require frequent aeration to prevent thatch build up. Most lawns growing on heavy clay, or highly compacted soils require annual aeration to restrict thatch accumulation.

#### **When Should Lawns be Aerated?**

Annual aeration is beneficial for most lawns. Lawns growing on heavy clay or subsoils, and lawns exposed to intense use benefit from more than one aeration each year. Aeration can be done spring or fall. Fall aeration is preferable as new root development is more prevalent at this time of year and continues through most of the winter. Aeration creates the growth zones new roots need to achieve the maximum benefit from the season. Aeration before or at the time of late season fertilization enhances root growth and response and improves spring green up and growth.

### What Can You Expect from Lawn Aeration?

Immediately after aeration your lawn will be dotted with small plugs of soil. Within a few weeks these small plugs of soil will break apart and disappear into the lawn.

Don't expect miracles from a single aeration, particularly on lawns growing in extremely poor soils. By aerating the lawn on a yearly basis, we will create an environment for healthy turf, and we may prevent the need for more extensive renovation that often becomes necessary on lawns with poor soil.



# Catholic Cemeteries – Caretaker Notes

## Spring Time Recommendations/Programs:

- **Clean Up Debris**
- **Examine the turf**
- **Prepare for Spring Maintenance Program**

When the snow melts away, it leaves the cemetery management with the challenging task of cleaning up the damage of winter weather and preparing the grounds for spring.

The first task in preparing the lawns for spring cleanup is cleaning up winter's residue, such as twigs, dead branches and bits of human-made debris (ranging from sand on the roads to paper wrappings to left over debris from winter decorations).

These items are best picked up, sorted and disposed of before any lawn care efforts can get underway. At this time the maintenance manager reviews the lawn areas that will need special attention with a special focus on damaged areas from winter burials and identifying grassy and broadleaf weeds.

After the large pieces of debris are gone a light raking (spring rake) of the area can take place.

## Thinning grass areas?

Some probable causes are reviewed for thinning of grass in areas. Soil fertility, the amount of sunlight reaching the ground area, excessive water. Sometimes a simple trimming of a tree's canopy can be a solution to the problem.

## Standing water?

Standing water can result in many problems for cemetery lawns including the thinning of grass. Standing water problems can be improved by addressing surface drainage. Simple top-dressing the area to remove the low spot or re-contouring the area to enable water to drain off is often the simplest best solution.

## Soil compaction?

Soil or core aeration is also a common practice for cemetery lawns. In early spring, the lawn may appear to have a series of holes (or divots) a sign or indication that a mechanical aerator has passed through the area.

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# **Catholic Cemeteries – Caretaker Notes**

## **Reseeding and over-seeding?**

**Re-seeding work is completed on areas of the lawn where grass had grown before and are now bare. Over-seeding should be done on areas that have grass in thin patches.**

**Adequate soil temperatures are necessary for the grass seed to germinate and grow. The soil needs to be at least 50 degrees or warmer. A portion of the seed typically fails to germinate and sprout because of being wet and cold too long.**

**Lawns are prepared for re-seeding by lightly breaking the surface of the soil. If the lawn just needs to thicken up, then over-seeding can be done. Topsoil is sometimes placed as a top-dress for the low areas between the existing grass plants to even the surface before applying the seed. Lightly the area is raked to insert the seed into the soil.**

## **Water the re-seeded and over-seeded areas?**

**The cemetery's workers will water the areas enough to moisten the soil. (A muddy condition is not desirable.) Grass seed needs moisture to start the germination process, but not so much as to cause it to rot. Once the seed receives water, the soil must be kept moist. Evidence of germination is seen as a "green fuzz" that begins to show up 10 to 14 days for bluegrass.**

## **Remove plants from headstones during the spring cleaning?**

As the weather warms up, lot owners and cemetery workers use this time to do some spring cleaning. One problematic area to focus on is removing plants and vines from headstones and family mausoleums as well as other masonry structures (chapels, statutes, fences, etc).

It is important to remove heavy vegetation from stone masonry because its presence can pose a wide variety of preservation problems. Cemeteries, in particular older or historic cemeteries, should first carefully examine the vegetation and stone masonry surface. Periodic inspections of areas where masonry meets vegetation should be completed regularly throughout the growing season to prevent problems.

When conducting an inspection, it is important to see if vine roots have penetrated the stone or masonry. If masonry joints, the masonry itself or the stone is found deteriorated due to the roots or because of the weigh of the plant itself, the recommendation would be to contact a conservator before attempting to remove the vegetation from a historic or unique monument/structure.

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# Catholic Cemeteries – Caretaker Notes

If the vine has not yet damaged the masonry or stone, we recommend:

**using lopping or pruning shears to cut the vine trunk** about four inches above grade and remove a section of stem about six inches in length above this cut. In other words create about a six inch gap between the stump of the trunk and the stem of the plant. Make vertical cunts through the bark of the stump and peel the bark back slightly to expose about one inch of the inner wood.

**Paint brush killer directly on the surface and sides of the stump.** Be careful not to get any on the stone or masonry surface. This will kill the root system and help prevent the vine from re-sprouting.

**Allow the vine to die naturally**, then remove the dried tendrils and roots, taking care not to remove or damage any stone or masonry. Never pull or yank the vines off. This is almost certain to damage the fragile historic fabric of the masonry or stone. Coax or ease the plant material off the wall using wooden scrappers. Often water will help loosen the plant material. If the vine was very large, it may be necessary to cut the network of stems into smaller sections.

**Be careful not to allow the material you're removing to fall or cause additional damage.** Be certain to gather all of the debris and remove it from the cemetery. It is best not to leave dead wood in wall joints. As the wood decays, the void it creates will lead additional and often more serious problems. If the vines were large, it may be necessary to repair the wall or stone.

**Gently scrub the surface** with a soft, nonmetallic bristle brush and clean, potable water after removing as much material as possible. This will help remove the last of the vegetation.

## **Poison Ivy –**

Poison ivy is a common plant in a cemetery where maintenance has been minimal. There are two methods to control Poison Ivy. Mechanical or Chemical.

Mechanical control eliminates the need for chemicals, but does expose those involved to the plant's chemical that causes rashes, blisters and itch. This means that if you decide to manually remove the plant, all potentially exposed skin must be covered, and extreme care should be taken to prevent the spread of the oil to other clothing through washing.

Pulling can eliminate poison ivy. The real advantage to this approach is that it can be used in areas where chemicals can't be applied because of other valuable plants. Pulling is easier and more effective after heavy watering.

Glyphosate is moderately effective for killing poison ivy, translocating throughout the plant and eventually killing both leaves and roots. It, however, is non-selective and will kill or severely injure most kinds of plants.

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