

## European Pine Sawfly

Young European pine sawflies should begin showing up in the next week or so feeding on Scots, red, jack, and mugo pines. Eggs have already been laid by the adult female sawfly. Additional pines that may be attacked, if planted among the above species, include eastern white and Austrian pines. The best indicator plants for this spring (**Coincide**) for timing of sawfly egg hatch would be when redbud, *Cercis canadensis* and *Prunus X cistena* are in full bloom and when Norway maples are in late bloom and leafing out. Currently, Norway maples are just beginning to break bud throughout the northeastern Illinois area.

Young sawfly larvae will have a black head and gray-green body with several light and dark-green stripes that tend to break up into spots. The larvae feed gregarious (in groups) initially consuming the margins of the needle. As they grow, they eventually eat the entire needle leaving only the fascicle. There is one generation per year. Heavy defoliation of the plant may result if the larvae are not controlled, but since this sawfly feeds only on last year's needles, trees seldom die. In any case, extensive defoliation of most evergreens or conifers may cause serious damage or death of the plant.

The European pine sawfly is easily controlled by applying a foliar spray of Sevin (carbaryl), Dursban (chlorpyrifos) or diazinon when the larvae are first noticed. Older larvae are much harder to kill and can do considerable feeding damage if not controlled. One application should provide effective control.

**REMEMBER: Dipel (*Bacillus thuringiensis*) IS NOT EFFECTIVE AGAINST SAWFLY LARVAE!**

Credit: CES Newsletter

## Don't Let Turf Equipment Damage Trees

by Larry Hall

Hendricksen, the Care of Trees

Lawn mowers, string trimmers and the whole arsenal of today's turf-care equipment might be indispensable to maintaining the ideal lawn, but they can also wreak havoc on trees.

Trunk wounds can be very serious, in some cases eventually killing a tree. Sometimes one or more branches begin to die shortly after the damage has occurred. Other times, years might go by before the tree shows any sign of trouble.

Even a slight nudge can injure a tree, with a tree possibly becoming completely girdled by this type of damage.

Thin-barked trees, such as lindens, birches, maples and magnolias, are more susceptible to trunk damage than those with more rugged bark, such as oaks, elms and ashes. All young trees, regardless of species, are at risk.

The best way to prevent trunk damage is to place a layer of mulch around the bases of trees. Ideally, mulch should form a circle around the base of the tree that extends out to the dripline. But since this might not always be possible, a tree-healthy compromise is to mulch from the base of the tree to at least a few feet from the base.

If a ring of mulch is not an option, maintenance workers should be sure to use landscaping equipment around their trees with great care.

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# Welcome Your Friends with Flowers

by Dan Dinelli, Northshore C.C.

Flowers are often used as a warm gesture of friendship, welcoming family and friends. Plants in the garden can do the same. Gazing at the floral spectrum of colors and texture of a garden in full bloom puts us at ease. Plants offer more than their kaleidoscope of beauty. Many forms of wildlife are attracted to flowers.

When selecting plant material for the golf course, we consider benefits the plants offer wildlife. As I look at our greenhouse bulging with annuals and perennials, the same holds true. Flowers welcome friends to the garden like butterflies, fascinating moths, beneficial insects and birds, including the elusive hummingbird. Flowers offer food, nectar, seeds, protection and breeding habitat that lures these fine critters to the garden. Many of the flowers we use in our formal annual beds and informal wildflower/prairie plantings have proven themselves as "welcome mats" to our garden friends.



Carrie Dinelli

Butterflies are said to be flowers that fly. My ever active two year old daughter becomes paused, as her eyes wander freely with the flight of a butterfly. Plants attract butterflies not only with their sweet nectar but by providing the appropriate environment for various stages of their development. The infamous, frail winged Monarch that migrates hundreds of miles to Mexico is nicknamed the milkweed butterfly. The larva feeds on the milkweed plant. The toxic sap in the milkweed poses no threat to the larva. However, if a predator attempts to eat the larva, the predator quickly drops the caterpillar due to the taste of the toxin.

To fully understand the needs of a butterfly, you must first know the life cycle of the butterfly. Butterflies develop by complete metamorphosis. They begin their life as an egg, develop into a larva (caterpillar), form a chrysalis or pupa and finally emerge as a winged adult. When laying her eggs the female butterfly must choose the appropriate plant. Many caterpillars or larva will survive only if they feed on a particular species of plant. To encourage butterflies, plantings should include the proper host for egg laying and larva development.

(continued page 24)



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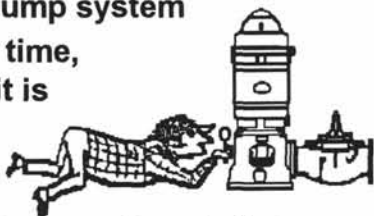


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(Welcome Friends with Flowers continued)

Other plants offering larva food would be the asters for the Pearl Crescent butterfly. Snap dragons for the Buckeye butterflies and Queen Anne's Lace for the beautiful Swallowtail. Do not be offended when the plants foliage is eaten. The caterpillars rarely kill the plant. Pesticides should be avoided.

Nectar of many flowers will attract these beautiful aviators to the garden. A relative of the milkweed is the Butterfly weed. It grows well in a sunny well-drained site. If the area is moist with partial to full sun, one of my favorites is the Joe Pye-weed. Though these names end in weed, to the butterflies they are not weeds at all. The following is a partial list of garden flowers that attract a variety of butterflies. Ageratum, Aster, Baptisia, Bee Balm, Black-eyed Susan, Butterfly weed, Cornflower, Coreopsis, Cosmos, Daylily, Daisy, Delphinium, Goldenrod, Lupine, Marigold, Pansy, Phlox, Primrose, Purple Coneflower, Petunia, Snap dragon, Sweet William, Verbena, White Alyssum, Yarrow, and Zinnia.



Upon close inspection of nectar rich flowers, one may find insects like the Hover or Syrphid fly, Predatory wasps (Vespidae family), Ladybugs or Ladybird Beetles, Green Lacewings. The appearance of these tiny beneficial insects may not be brilliant. Their beauty lies in their ability to patrol the garden for pests. For these insects pose no harm to humans. To destructive pests like aphids, mealybugs, thrips, leaf hoppers and mites they are relentless predators. These 'good guys' are the custodians of the garden, by either consuming their victims eggs, larvae or adult. The nectar of Cosmos, Coreopsis, Daisy, Marigold, Yarrow, Goldenrod, White Sweet Alyssum, Morning Glory and Queen Anne's Lace will lure the good guys in for a drink.

The only hummingbird found east of the Mississippi River is the Ruby-throated. These smallest of all birds are particularly attracted to tubular red flowers such as salvia and nicotiana. With their remarkable flight, they are the only birds that can fly backwards. Bee Balm, Monarda, Cardinal flower, Lobelia, Wild Bergamont, Columbine, Thistle, Impatiens, Lilies, Petunia, Hosta Sweet William, Butterfly weed are other flowers visited by hummingbirds.

The impostor of the hummingbird is the Sphinx Moth. This moth draws nectar of the same flowers as the hummingbird. These stout moths have swift, powerful wings that often have colorful patterns. Their long proboscis and rapid wing beat, causes this moth to look very much like a hummingbird at a glance. Attracting this moth to the garden may help in reducing weeds. For the larva feed on common weeds such as Chickweed and Purslane.

Many birds can be seen as they hunt for insects among the plants. Thrushes and wrens will hunt for ants, beetles, caterpillars, crickets, and weevils. Sparrows and vireos will feed on seeds from flowers or weeds. Finches are attracted to the seeds of Goldenrod, Cornflower, Zinnia and Thistle.

When arranging your garden, it is best to work from a plan. There are vines, shrubs, and trees that can be used in con-

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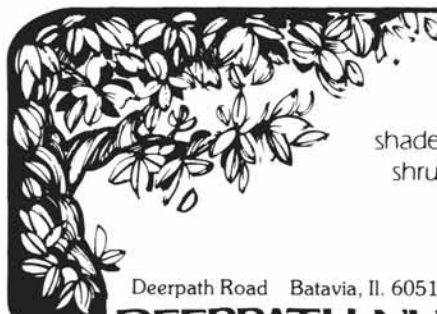
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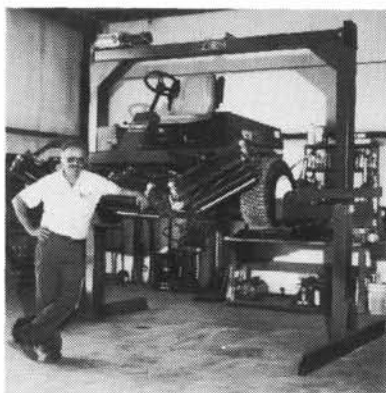
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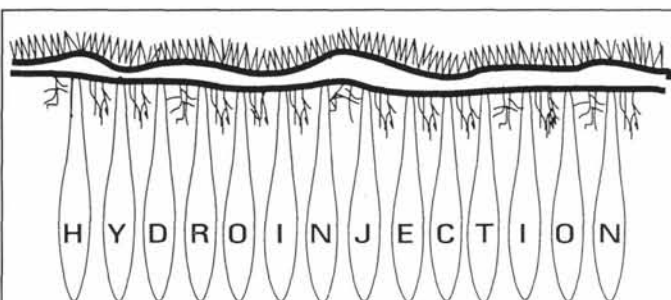
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junction with your annuals and perennials. With careful selection you will increase your success attracting wildlife. Remember, plants satisfy some but not all the needs of your garden guests. In many cases houses, feeders and bird baths can help greatly. Many references are available on attracting wildlife to your garden. Consider welcoming your guests with flowers. Sharing your garden will open another world beyond its floral beauty.



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Credit: "No Ordinary Time", by Doris Kearns Goodwin

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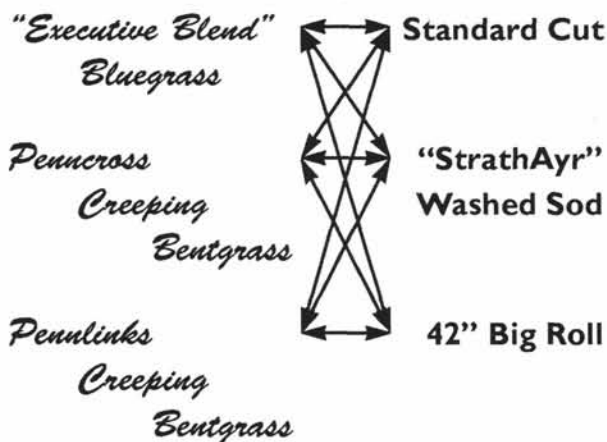
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# Preventive Maintenance For Mowers & Other Equipment

by John N. MacLeod

The superintendent will rely heavily on a good mechanic to help implement a training and daily PM program. (3) The mechanic will not only thoroughly explain how each mower model or other machine works, but what signs of trouble to look for. This would entail teaching how to read and understand the hour meter, fuel gauge, water temperature gauge, oil pressure and alternator lights, as well as the overheat warning light for the engine. The employees should learn to watch for leaking oil or fuel, bent or worn parts, or black exhaust smoke. Any changes they can feel, such as slow engine response, excessive play in steering, or breaks that won't hold, or changes they can hear including rattles, squeaks, or knocks, should be immediately reported to the mechanic. (4) If properly taught how to use greens mowers and other equipment, employees can react quickly to problems that may develop during operation. Timely reaction can protect and prevent serious damage not only to the machine, but to the golf course as well. In addition to the above, a Pre Start Checklist is a great way for staff to help prevent breakdowns of equipment using daily inspection and routine PM. (5) A list is used to ensure PM exams are performed on mowers and other equipment. Pre Start Checklists would check things like oil levels, fuel level, tires, loose parts, hydraulic leaks, condition of belts, and for the mowers, inspection of the blades, bedknives, and signs of uneven wear. (6) The mechanic or superintendent should also inspect to see that mower reels are at proper cutting height and to schedule periodic grinding or lapping when needed. Bedknives should be set close enough to reels so that a strip or two of paper can be cleanly cut without metal to metal contact.

The backbone of any golf course is its mower units, since approximately 50% of the time spent is involved in the mowing of fairways, tees, greens, roughs, and other areas around the course. The loss of a mower, or any major piece of equipment, for that matter, can seriously affect the ability to keep the golf course properly maintained for play. As one superintendent put it, "Downtime will kill you, and make you look bad." So how do you make sure that your carefully planned golf course maintenance schedule is not undermined by breakdowns and equipment failure? The consensus is that the only way is to establish a good preventative maintenance program, "PM" for short.

Two factors are very important in implementing a successful preventive maintenance routine. The first, is a sound plan based on daily equipment inspections, especially for mowers, since they must be ready to run every day. The second, involves the careful keeping of records about each piece of equipment. (1) A good PM program will involve several elements, but the key element is training the staff. The superintendent must be sure that each employee is aware and understands that preventive maintenance is a major and important aspect of everyone's daily job objectives. (2) The staff must then be taught how to properly operate the equipment, especially the mowers. Communication is needed to insure that they understand how each and every piece of machinery works so that they are able to do a good job, and do it safely.



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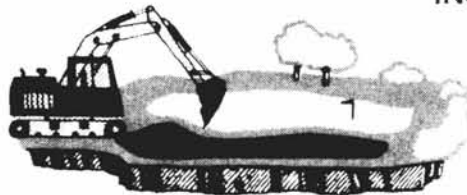
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(PM for Equipment continued)

The second factor in a successful PM program involves careful record keeping. Much of this administrative work and record keeping can be delegated to the mechanic or the superintendent may wish to do it himself. In any case, maintenance charts or cards should be filled out on each mower and major

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***The second factor in a successful PM program involves careful record keeping.***

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piece of equipment. (7,8) The cards may be kept using a system of monthly service checks or monitoring the number of hours a machine has been operated. The cards will indicate the most recent maintenance such as tune-ups or oil changes. They will show motor specifications, including type of spark plug and number, gap setting, and oil type to be used, or if a two cycle engine, the oil and gas mix ratio. They will include a good lubrication service program, both for transmission and engine oil. (9) The type and number of proper oil and fuel filters, air cleaner elements, will likewise be shown. A space should be provided for additional comments about special maintenance. Follow the manufacturers recommended maintenance and service schedule. In other words, go by the book, and make sure that the periodic schedule as outlined on that particular machine's maintenance card is religiously preformed. Keeping separate equipment folders of operator or owner manuals will help in this effort. The superintendent can also tell if repair costs have been above normal or within set limits by checking the maintenance cards. This will help in justifying the recommendation for replacement of the courses mowers and other equipment based on excessive costs that are backed up by good records. (10,11) To be successful, the PM program must be verified every day to ensure inspections are performed on all major equipment including the mower units. Daily inspections are very small investments in time when compared to the repayment, many times over, in lower operating costs and expenses. Finally, the records kept on golf course mowers and other equipment will prove useful in gathering budget information for next years maintenance and replacement costs. In the long run, PM, and good record keeping, in conjunction with proper training of staff, will result in significant savings in equipment, (longer life), downtime, (higher productivity), and economy (lower repair costs). (12)

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***To be successful, the PM program must be verified every day to ensure inspections are performed on all major equipment***

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