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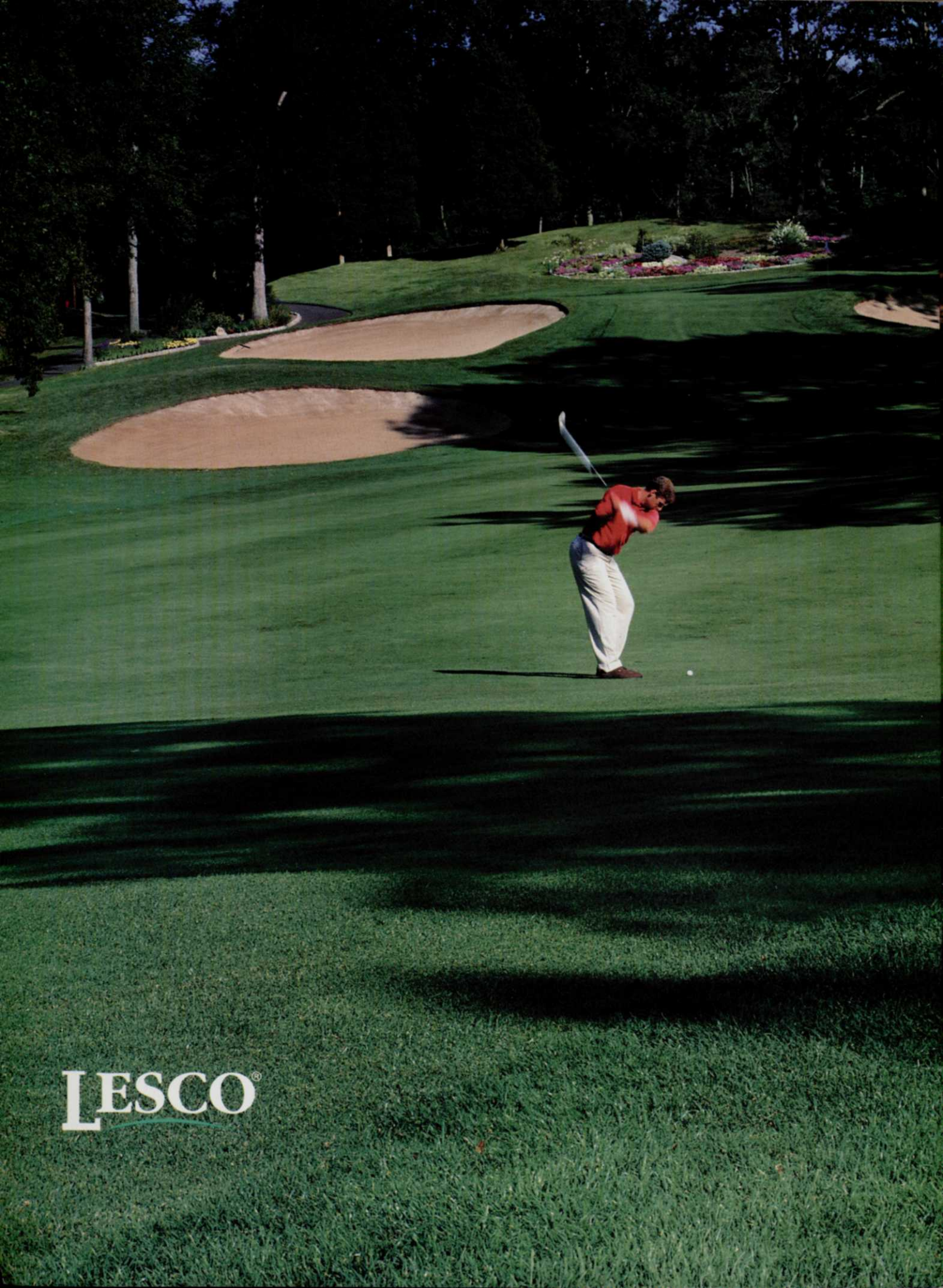
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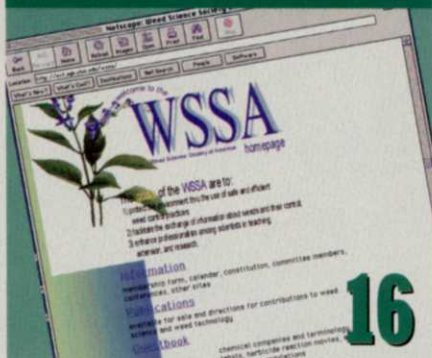
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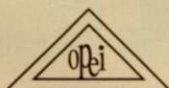
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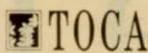
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Growing with the green industry



Sue Gibson

SUE GIBSON
Executive Editor

I have the great fortune and pleasure to return to the green industry as executive editor of Advanstar Communications' four Landscape Group publications: *Landscape Management*, *TurfGrass Trends*, *Athletic Turf Maintenance & Technology*, and now, *Golfdom*. These four publications offer golf course, landscape, lawn and grounds managers complete coverage of the technical, managerial and business information you need to know.

I love the green industry, which is why I am glad to be back. I love the way it is so diverse and so dynamic. The green industry is the place where biology and business meet, but it's more than that. It's an industry full of terrific people who are savvy in business, skilled in growing plants, creative in marketing, innovative in applying research to technology and often, just plain fun. It's an industry of low-end, high-end and middle-of-the-road organizations, most who work to make our environment a more beautiful and enjoyable place to be.

One of the best things about being part of the Advanstar Landscape Group is the fact that things are happening here and they're happening at breakneck speed. We're busier than a mowing manager in May planning new products and additions to our publications for 1999.

We recognized the shared interests and differences of profession in this industry a while back. That's when we took *TurfGrass Trends* under our wing and introduced *Athletic Turf Maintenance & Technology* to that very important segment of the market. Now we're ready to make some more dramatic changes:

► One of the most exciting changes for us will happen with the January 1999 issue of *Landscape Management*, where we'll focus exclusively on the needs and interests of lawn, landscape and

grounds managers. *Landscape Management's* beautiful graphics and coverage won't go away; we're just adding more coverage of:

- In-depth, practical information on managing your business,
- Ideas for operating your organization efficiently, day by day,
- Articles that explain how to grow healthy plants and healthy businesses,
- Realistic industry data that give a true picture of how our markets work, not just shot-in-the-dark numbers.

Why are we doing this? Because our second big step is to reintroduce *Golfdom* magazine in February, a publication that was the Bible of the golf industry for years. This high-end guide to the business of golf will debut with Pat Jones as publisher/editor. Pat's years of experience in the golf industry, extensive network of contacts and business and editorial expertise make the reappearance of *Golfdom* an exciting prospect.

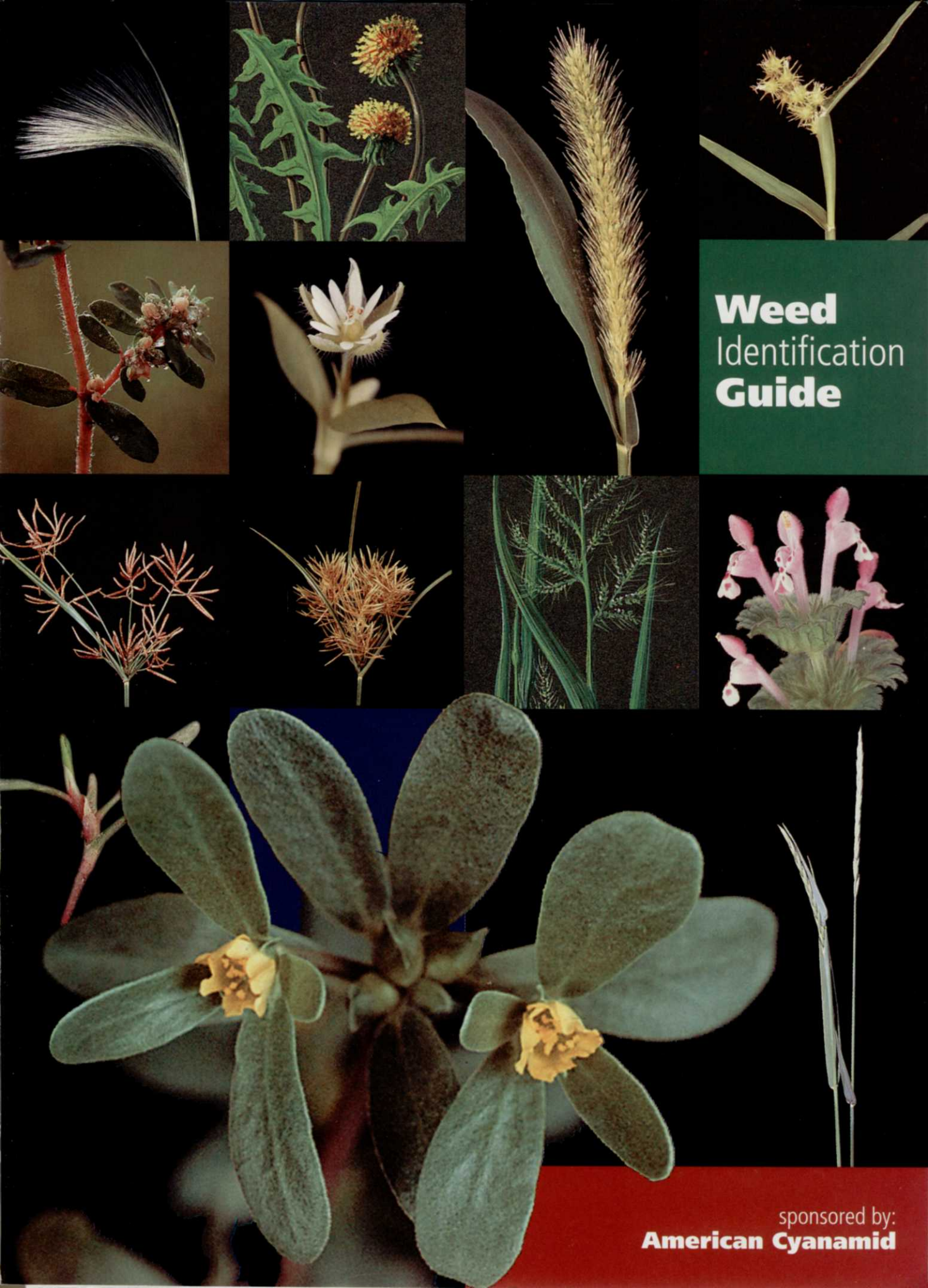
► We're publishing *Athletic Turf Maintenance & Technology* four times a year in 1999, and we're looking forward to covering truly innovative and practical athletic field management editorial under the knowledgeable guidance of Ron Hall, editor in chief.

► *TurfGrass Trends* will also undergo some tweaking as we expand our reach into the market and refine our focus on making the latest research useful to turf managers in all markets.

► Finally, we're already starting to beef-up our internet site (www.landscapegroup.com) to supplement our publications with useful coverage of products and management, article abstracts and archives, technical guides, news updates as they happen and much more.

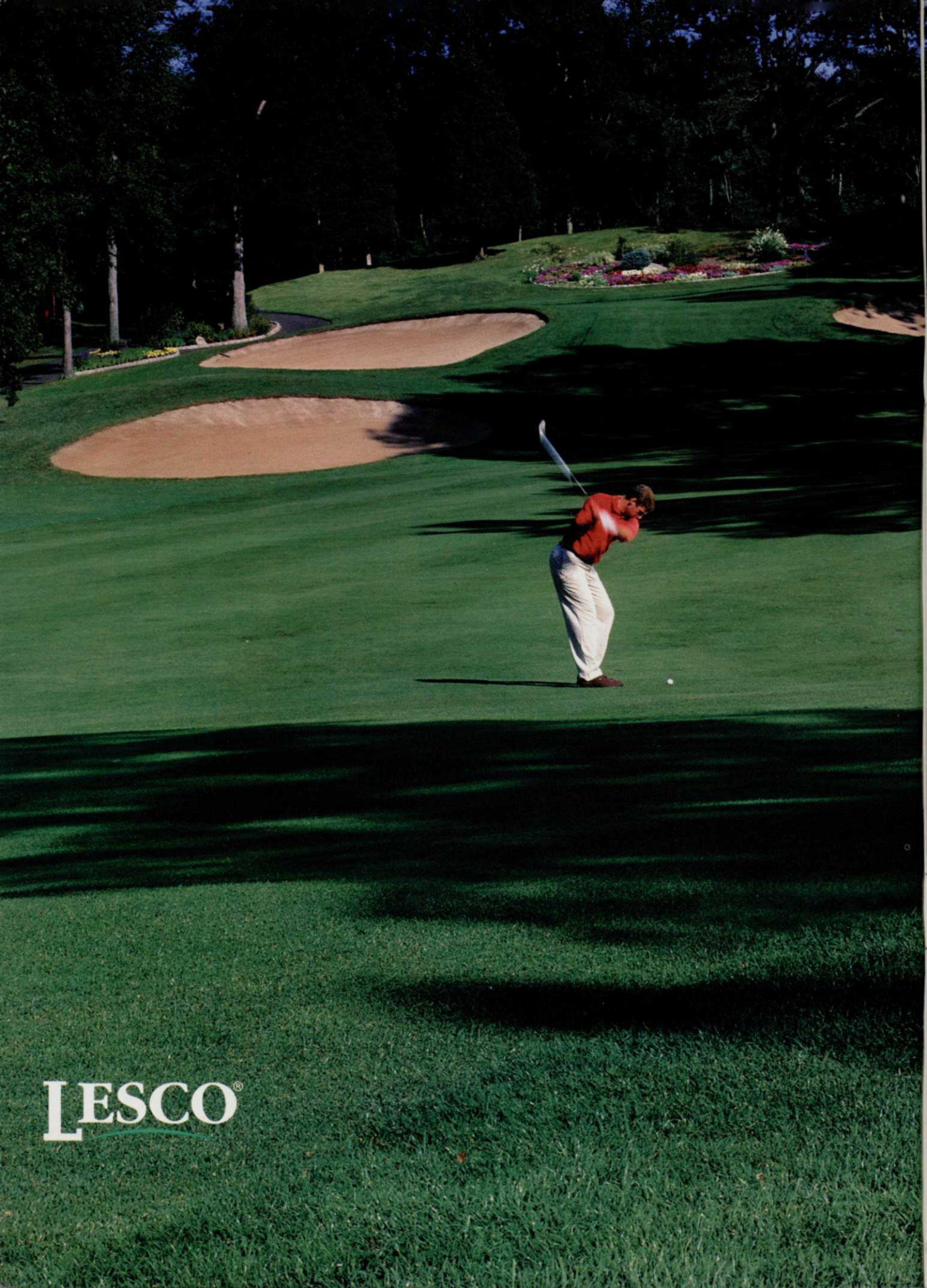
In the midst of all our planning, we're also packing for those winter events that draw this industry together, like the GIE Show and others. We hope to see you there and find out what types of information you like best.

If you don't want to wait, please call us at 800/225-4569 or e-mail me at sgibson@advanstar.com. We want your input as we continue to expand our coverage to you, the best people in the green industry. **LM**



Weed Identification Guide

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WEED IDENTIFICATION GUIDE

INTRODUCTION

Successful weed identification is a combination of timing and user-friendly data. Timing in relation to the maturity of the plant (the older, the easier) and user-friendly data, meaning an identification guide that is designed to facilitate the identification process. Both were considered in the design of this guide.

Timing: When identifying either monocot (grassy) weeds or dicot (broadleaf) weeds, studying a mature or flowering sample is very important. All of the most easily identifiable traits—flowers, seeds, leaves and roots—are present then, so take some time to find a mature specimen to examine.

User-friendly data: For ease of use, this guide concentrates on those plant characteristics that differentiate one species from another rather than those traits each has in common. These differences are represented visually with added text to refine the distinctions between similar plants.

Understanding the terms used in this guide

Understanding the parts of a grass plant are essential to accurately identify monocot weeds. In the example shown, pay particular attention to the seedhead, the ligule and the collar. They are the plant parts which have the most differentiating traits.

Abbreviations

aka = "also known as" (different common names are popular in different parts of the U.S.)

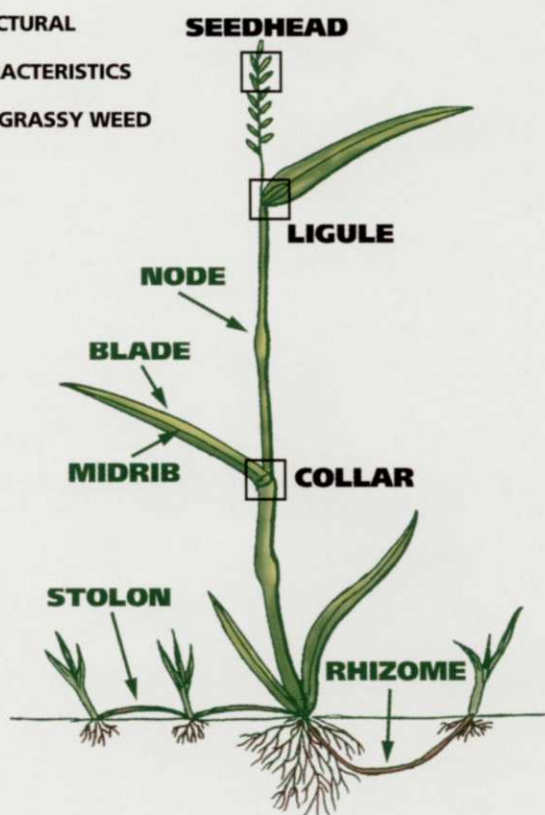
Further help

The use of this guide was designed to help managers substantially reduce the number of possible weed species identifications. However, variations in a plant's vegetative characteristics or distribution may require that managers forward samples to their local extension service for confirmation. American Cyanamid's local technical representatives can also be contacted for further help.

Sources

Information was compiled from the Scotts "Guide to the Identification of Grasses," the Southern Weed Science Society's "Weed Identification Guide," A.S. Hitchcock's "Manual of the Grasses of the United States" and the extension department at Cornell University.

STRUCTURAL CHARACTERISTICS OF A GRASSY WEED



Leaf in bud:



folded

rolled

Collar:



broad

medium

narrow

Ligule:



tall

medium

short

absent

hairy

Monocot weeds

Because of natural variations within grasses and differences that occur under varying environments, the illustrations included herein are meant to be representative but not definitive. Users need to consider all of the information—seedhead, in-bud, ligule, collar, descriptive text, tips and distribution—to accurately identify a weed.

As you proceed, keep in mind that you should not rely on an individual characteristic to be conclusive, rather total the number of similar characteristics between the sample and the guide to help narrow the number of possibilities.

The monocot weed species illustrated herein were selected for their likelihood of appearing in turf and their latest reported distribution.

Identifying a monocot weed

Once a mature sample has been selected, check each of the listed plant parts as follows:

- seedhead—size, shape, openness and number, size and shape of branches and seeds
- in-bud—cut through a leaf stem and determine if it is folded or rolled
- ligule—remove a leaf from its stem and with a hand lens check the size, shape and texture
- collar—lay the leaf flat, underside up and check the size, shape and top and bottom edges
- tips—check for additional vegetative plant characteristics
- distribution—confirm that this weed species has been identified in your state

ANNUAL BLUEGRASS aka *Poa annua*, *poa*

DIAGNOSTIC TIPS:

Very persistent self-seeding winter annual or biennial

Short, narrow leaf blades with parallel edges and boat-shaped tip

Some leaf blades wavy

Germinates in late summer/early fall

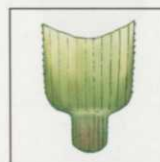
Shallow-rooted, dying under heat or moisture stress



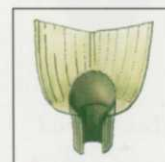
STRUCTURAL CHARACTERISTICS:



Leaf in bud:
folded



Collar:
narrow
top pinched



Ligule:
medium
pointed

DISTRIBUTION:



■ *Indigenous states*

MONOCOTS *Annual*

SANDBUR

DIAGNOSTIC TIPS:

A mostly prostrate, narrow-leafed summer annual that likes sandy soils

Distinctive yellow
seedhead contains 6-
20 large, sharply-burred
seeds

Burred seeds can cause painful injury to unprotected feet or ankles



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
folded



Collar:
broad
bottom pinched



Ligule:
hairy

DISTRIBUTION:



Indigenous states

FOXTAIL BARLEY
aka *squirreltail barley*

DIAGNOSTIC TIPS:

A narrow-leaved
prostrate sum-
mer annual

Leaf blades
coarse to touch,
often with
sparse, stiff hairs

Seedhead is a single tufted spike

Seed has a 2-3-inch-long hair at pointed end



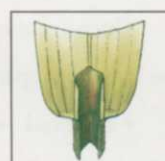
STRUCTURAL CHARACTERISTICS:



Leaf in bud:
folded



Collar:
broad
bottom pinched



Ligule:
tall
toothed

DISTRIBUTION:



Indigenous states

GOOSEGRASS

aka *silver crabgrass*

A narrow-leaved
dense prostrate
summer annual

Leaf color is
darker green
than most annu-
al monocots

Collar area has
sparse long hairs

Seedhead has 2-13
branches which are white
to silver in color



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
folded



Collar:
broad
continuous



Ligule:
short
toothed & divided

DISTRIBUTION:



Indigenous states

BARNYARDGRASS

aka *billion dollargrass*,
watergrass

A very wide-bladed
semi-prostrate
summer annual

Stems may be
branched at nodes and
frequently bent upright

Seedhead has multiple
short perpendicular
branches

Seeds are coarse with short
burrs



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled

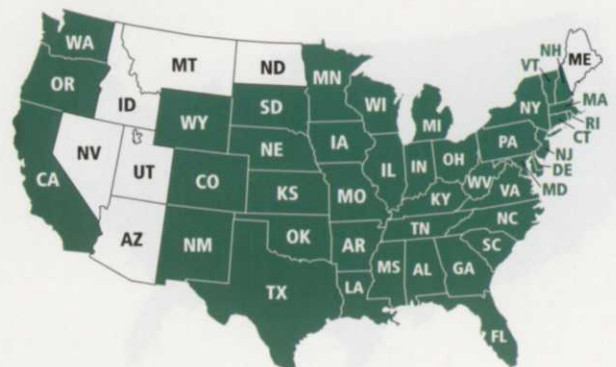


Collar width:
broad



Ligule height:
absent

DISTRIBUTION:



Indigenous states

MONOCOTS *Annual*

CHEATGRASS

aka *chess*, *rye bromegrass*

A narrow-leaved, mostly erect winter annual

Underside of leaf is often hairy

Seedhead is open with multiple semi-erect branches carrying 1-4 seed clusters

Seeds look like cultivated wheat or rye



GREEN FOXTAIL

aka *green bristlegrass*

A wide-leaved mounded summer annual

Leaf blades are limp, bright green and sharply pointed

Stems bent upright at nodes

Seedhead cylindrical with tufted pale green seeds



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
bottom pinched



Ligule:
short
toothed

STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
narrow
continuous



Ligule:
hairy

DISTRIBUTION:



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DISTRIBUTION:



Indigenous states

LARGE CRABGRASS aka hairy fingergrass

A wide-bladed prostrate summer annual

Leaves are hairy on both surfaces with a prominent midrib

Older nodes are often branched and rooted where contacting soil

Seedhead open with 4-6 slender branches



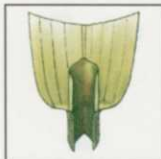
STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
top pinched



Ligule:
tall
toothed & pointed

DISTRIBUTION:



Indigenous states

RESCUEGRASS aka prairiegrass, rescue brome

A wide-leaved winter annual or biennial

Leaves are hairy at edges and on upper surface

Seedhead is open with bending slender side branches

Seed clusters look like cultivated wheat or rye



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
bottom pinched



Ligule:
tall
toothed & pointed

DISTRIBUTION:



Indigenous states

MONOCOTS *Annual*

SMOOTH CRABGRASS

aka *fingergrass*

A narrow-leaved prostrate summer annual

Leaves are not hairy except sparsely haired in collar area

Stems branch at nodes, but do not root

Seedhead has 2-6 slender upright branches



STINKGRASS

A narrow-leaved annual

Leaves are dull on upper surface and glossy on underside

Collar area has sparse long hairs

Plant has a very disagreeable odor when cut or damaged



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
bottom pinched



Ligule:
tall
rounded

STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
narrow
continuous



Ligule:
hairy

DISTRIBUTION:



Indigenous states

DISTRIBUTION:



Indigenous states

WITCHGRASS

An erect wide-bladed summer annual

Leaves are densely haired on both surfaces

Emerging seed-head is fountain-like

Mature seedhead is large and very open with slender branches carrying single seeds



YELLOW FOXTAIL

An erect wide-bladed summer annual

Upper leaf surface has long hairs in collar area

Leaves are often slightly twisted in an open spiral



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
continuous



Ligule:
hairy

STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
narrow
top pinched



Ligule:
hairy

DISTRIBUTION:

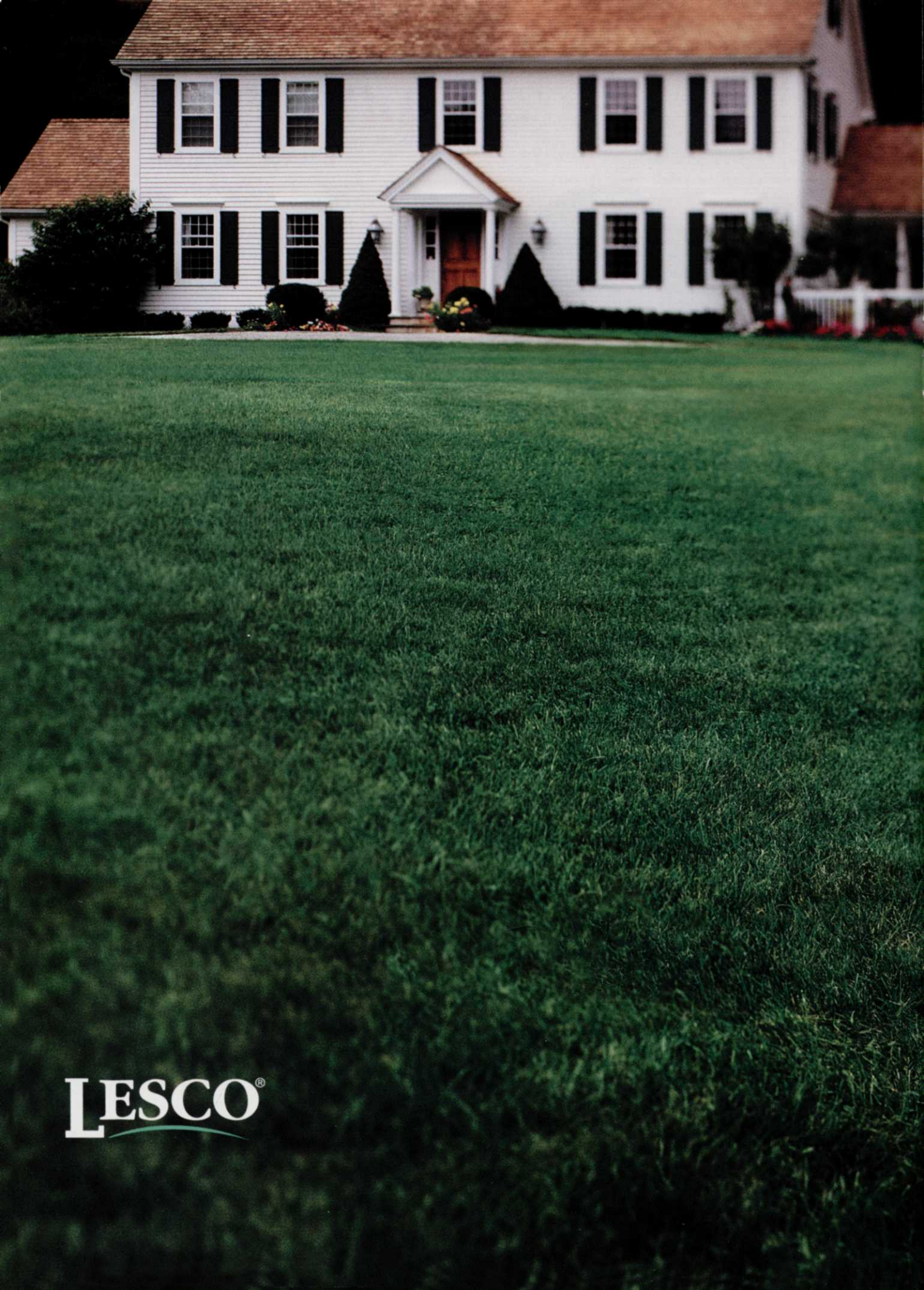


Indigenous states

DISTRIBUTION:



Indigenous states



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MONOCOTS *Annual*

DOWNY BROME

aka *drooping brome*

An erect narrow-bladed winter annual

Leaves have dense soft hairs on both surfaces

Seedhead is open with drooping branches

Seed clusters are tufted and look like cultivated wheat or rye



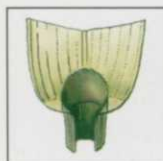
STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
narrow
bottom pinched



Ligule:
medium
toothed & pointed

DISTRIBUTION:



Indigenous states

FALL PANICUM

aka *smooth witchgrass*

A very wide-bladed mostly prostrate summer annual

Leaves may be hairy on upper surface, are glossy beneath and sharply pointed

Stems branched at nodes and bent upright

Seedhead is open with multiple very slender branches



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled

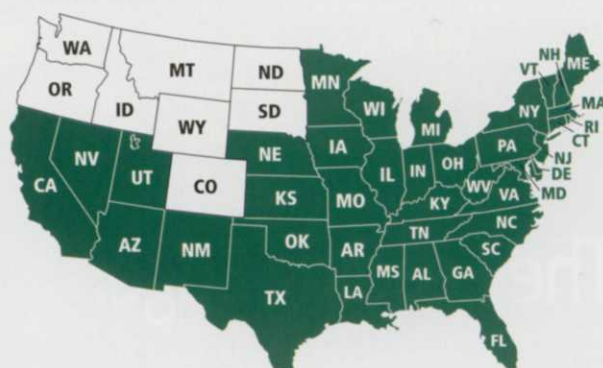


Collar:
broad
continuous



Ligule height:
hairy

DISTRIBUTION:



Indigenous states

WILD OAT aka *wild oats*

An erect wide-bladed annual

Plant often turns brown in summer as seed matures

Collar area has sparse short hairs

Stems are stiff

Seedhead is open with multiple branches carrying many single drooping seeds



SOUTHERN CRABGRASS aka *summergrass*

A wide-bladed prostrate summer annual

Leaves may be hairy on upper surface

Stems will root at nodes

Collar area has sparse long hairs

Seedhead has 2-9 slender branches



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
narrow
bottom pinched



Ligule:
tall
toothed

STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad



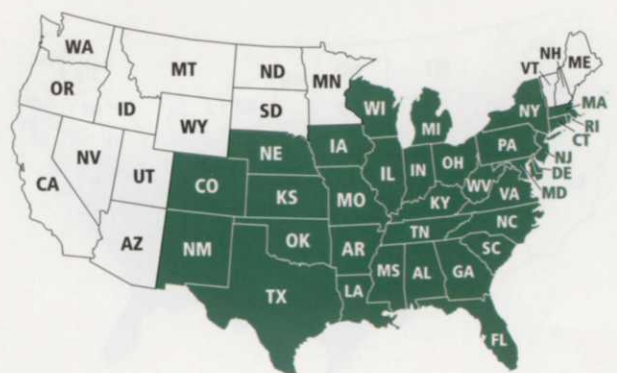
Ligule:
medium
toothed & pointed

DISTRIBUTION:



Indigenous states

DISTRIBUTION:



Indigenous states

MONOCOTS *Perennial*

DALLISGRASS aka *paspalum*

A warm-season coarse semi-erect spreading perennial

Collar area has hairs on upper leaf surface and at leaf edges

Seedhead has 3-7 right-angled slender branches

Roots may have short rhizomes



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad



Ligule:
tall

DISTRIBUTION:



Indigenous states

BROOMSEDGE

A very narrow-leaved erect perennial

Collar area has hairs on upper leaf surface and on leaf edges

Seedhead is upright with white feather-like tufts



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
folded

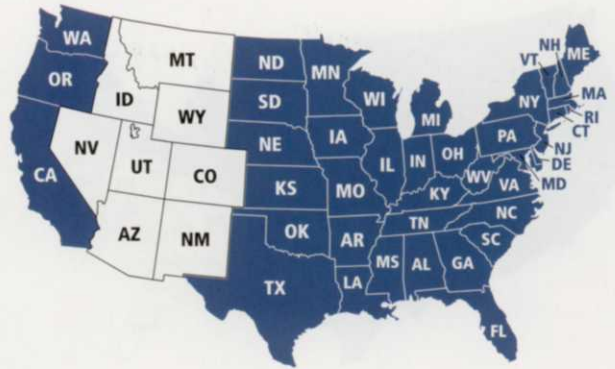


Collar:
narrow
continuous



Ligule:
short
with hairs

DISTRIBUTION:



Indigenous states

MONOCOTS *Perennial*

QUACKGRASS

An erect narrow-leaved aggressive perennial

Leaf is rough on upper surface

Collar area has claw-like fleshy appendages (auricles) that clasp stem

Plant develops multiple rhizomes from base of plant

Seedhead is a single slender spike

**JOHNSONGRASS**

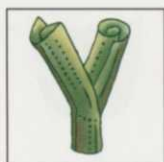
A very wide-bladed aggressively spreading prostrate perennial

Collar area has short hairs on upper surface near ligule

Spreads by multiple ¼-inch-thick rhizomes



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
continuous



Ligule:
short

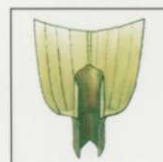
STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
bottom pinched



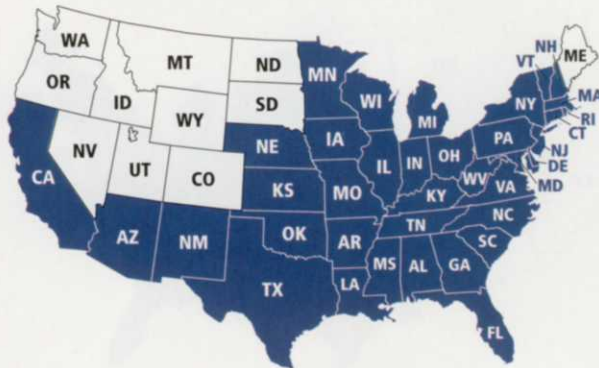
Ligule:
tall
with hairs

DISTRIBUTION:



Indigenous states

DISTRIBUTION:



Indigenous states

MONOCOTS *Perennial*

NIMBLEWILL

A very short-leaved
stemmy spreading
perennial herb

Leaves are short

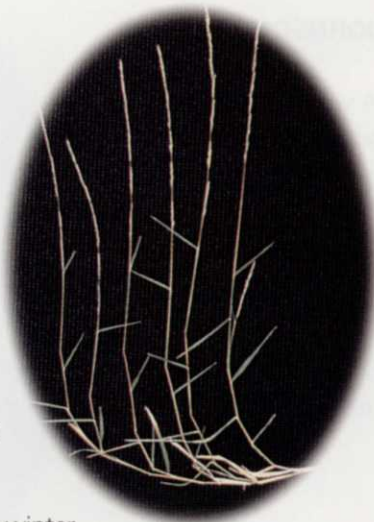
Spreads by very slender
stolons

On frequently mowed
sites, plant often looks
stemmy in fall

Turns off-white during winter

Collar area has long hairs at leaf edge

Seedhead has single, very slender spike



STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
medium
top pinched



Ligule:
short

DISTRIBUTION:



Indigenous states

KNOTGRASS

A prostrate spread-
ing perennial

Collar area has
short hairs at leaf
edges and near
ligule

Seedhead has two
slender upright
branches



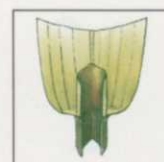
STRUCTURAL CHARACTERISTICS:



Leaf in bud:
rolled



Collar:
broad
bottom pinched



Ligule:
tall
rounded

DISTRIBUTION:



Indigenous states

MONOCOTS *Perennial*

YELLOW NUTSEDGE

aka *yellow nutgrass*

A very rapidly growing erect perennial herb

Spreads by rhizomes with underground tubers

Leaves are v-shaped with a prominent midrib tapering to a sharp point

Stems are triangular

Seedhead is semi-open, carrying yellow seeds



PURPLE NUTSEDGE

aka *purple nutgrass*

Rapidly growing erect perennial herb

Spreads by rhizomes with underground tubers

Stems are triangular

Leaves are v-shaped, tapering to a sharp point

Seedhead is open, carrying dark or purple seeds

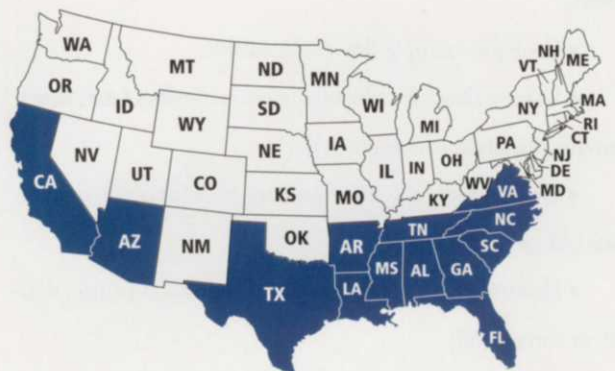


DISTRIBUTION:



Indigenous states

DISTRIBUTION:



Indigenous states

Dicot weeds

In a universe of hundreds of dicot weeds, a limited number can tolerate repeated mowing of managed turf sites. In order to provide a broader representation of turf weeds, we have included a select number of these dicot weeds. Those presented herein were chosen for their ability to survive in turf, often as a continuing pest. Several of the species can persist even at fairly short mowing heights; others are active in cool weather.

Identifying a dicot weed

Unlike the prototypical size and shape of monocot weeds, the shape and vegetative growth habits of many dicot weed groups are visually unique. Also, the distinctive traits of monocots—seedheads, ligules and collars—are not always present, making visual identification more important.

We suggest the following process for identifying dicot weeds:

- Look for a sample flower if available
- Leaves: check for identifying characteristics (size, shape, notches, venation or coloration)
- Stems: check how the leaves are held (opposite or alternate), shape and color
- Flowers: check color, size and composition (single, double or compound)
- Location: take note of the conditions in which the weed is growing (shade, compacted soil, etc.)
- Distribution: confirm that this weed species has been identified in your state

DANDELION

aka *common dandelion*

A large rosette-type perennial herb

Leaves growing from plant base are long, narrow and deeply notched

Points of leaf lobes point backward toward base of plant

Has large, slightly mounded yellow flowers on hollow stems

Mature seedhead is a round puffball with seeds that are easily dislodged



DISTRIBUTION:



Indigenous states

DICOTS

HENBIT

aka *dead-nettle*

A mostly erect
winter annual or
biennial

Leaves are similar to mint: rounded, toothed, heavily veined with soft hairs on top, held opposite on square stems


Single flowers are trumpet-shaped, pale purple and project from ends of stems

Seen primarily in spring, dying with heat



KNOTWEED

aka *prostrate knotweed*

- A persistent low-growing summer annual
 - Prefers compacted soil of pathways and along drives
 - Leaves are blue-green, up to 1 inch long and ¼-inch wide
 - Small single white to pink flowers are found at the junction of the leaves and the stem
- 



DISTRIBUTION:



Indigenous states

DISTRIBUTION:



Indigenous states

DICOTS

PURSLANE

aka *common purslane*

A prostrate, succulent summer annual

Leaves are shiny green, wedge-shaped, thick and up to 1 inch long

Stems are thick, fleshy and purple to brown in color

Plants are very drought-resistant

Small, single yellow flowers may appear in the leaf clusters at end of stems



DISTRIBUTION:



Indigenous states

COMMON CHICKWEED

aka *starwort, winterweed*

A low-growing winter annual

Plant prefers shaded moist sites

Opposite small leaves are carried on tender stems

Stems may root at leaf nodes

Small compound flower composed of 5 pairs of two pale purple petals

Plants die back with summer heat, but can survive year round at cool sites



DISTRIBUTION:



Indigenous states

SPOTTED SPURGE

A prostrate fleshy summer annual herb

Leaves are opposite, oblong, and up to ¾-inch long


Upper leaf surface has a purple to brown blotch along center vein

Hairy stems produce a milky-white sap when broken



DISTRIBUTION:



 *Indigenous states*

ACKNOWLEDGMENTS

This guide was written and compiled by Chris Sann of Turf Information Group, Inc., Wilmington, Delaware.

Photos of weeds were taken by Arlyn Evans, a horticulturalist from Memphis, Tenn.

Graphic design and execution and illustrations by LANDSCAPE MANAGEMENT graphic designer Lisa Bodnar and Dan Beedy.

The "LANDSCAPE MANAGEMENT Weed Identification Guide" presented as a service to the green industry by American Cyanamid of East Hanover, N.J. and LANDSCAPE MANAGEMENT magazine of Cleveland, Ohio.

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The reason they never showed up? Because PENDULUM® herbicide is a highly effective preemergent turf herbicide. Compared to the competition, PENDULUM demonstrates a higher level of control across a broader spectrum of weed species. With PENDULUM, weeds won't ever see the light of day. For the PENDULUM herbicide distributor nearest you, call: 1-800-545-9525, Ext. 1676.



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Barricade ^a	■	●	●	●	▲	●	■	■
Dimension ^b	■	●	■	●	■	●	●	●
Team ^c	■	●	●	●	●	●	NR	NR
Ronstar ^d	●	■	NR	●	●	NR	NR	NR
Surflan ^c	■	■	■	●	▲	●	■	■

Level of control

● Medium

▲ Medium-High

■ High

NR Not registered

^aNovartis

^bRohm and Haas Co.

^cDow AgroSciences

^dRhône-Poulenc



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Managing holly leaf miner

We have had a problem managing holly leaf miner. What is the best strategy for managing this pest? Do they have two generations like birch leaf miners?

—PENNSYLVANIA

Unlike the birch leaf miner, which has two generations, the holly leaf miner has only one generation per year. Holly leaf miner eggs are laid on the under-surface of leaves. The adult female makes "pin-prick" holes with her ovipositor and lays eggs around early May. Eggs hatch into larvae, which feed very slowly and remain inside the mines all summer. They do not feed to any extent until late winter and early spring. They then pupate in the leaves and the small black and gray flies emerge.

Ideally, applications of insecticides such as Orthene should be provided in early May against the egg-laying adults. The birch leaf miner is active earlier so don't try to treat both problems at the same time of year.

Consider using sticky pheromone traps to monitor the adult activity. This will help fine-tune your treatment timing. The use of phenology (blooming of indicator plants) may also help fine-tune your treatment timings. When red-buds produce flowers, the adult activity also can be found.

Depending on how extensive the feeding damage is, it may be a good idea to fertilize,

water and mulch to help improve plant health. If the feeding damage is extensive, it can weaken the plant considerably.

Read and follow label specifications, and treat as needed.

Fertilize in the fall

When is the best time to fertilize a lawn in the fall? How much nitrogen needs to be used to get a good result?

—OHIO

For your area, generally the best time to apply turf fertilizer is in early September at the rate of one pound of actual nitrogen per 1,000 square feet. And again treat in late October or early November at the rate of one to two pounds of nitrogen per 1,000 square feet. Some people may prefer to apply only once in the fall. In this situation apply one pound at the end of September or in early October. The first number on the fertilizer bag is nitrogen. This number represents the percentage of actual nitrogen (by weight) in the bag of fertilizer material you have. From this total actual fertilizer material, calculate the 1 to 2 lb. ai (active ingredient) nitrogen needed.

If the application is done correctly, the agronomic benefit will be great. This would include greater and deeper root system development, heat and drought tolerance in the summer and earlier green-up in the spring. Reports also indicate that insect, disease and weed activity may be less severe. In general, it's a good agronomic

practice to implement a fall fertilization program.

Mammal pests

What is the best way to manage skunks and raccoons? These animals are digging the lawns and causing extensive damage. The problem is severe close to the wooded areas.

—NEW YORK

Skunks and raccoon can cause extensive damage to lawns. They dig the lawns in search of underground food such as grubs, earthworms, periodical Cicada nymphs and other soil-inhabiting insects.

Where feasible, try to capture them using traps. Make sure that you have the proper traps designed for their use. Also check with your county or state regulatory agency to see whether it is all right to capture them. After catching, make sure the animals will be relocated or dealt with as per regulatory guidelines. Be careful when moving them from place to place. Some of them may carry contagious diseases.

Also consider using grub control measures to keep the possible food source under control. Make sure that proper insecticide is used at the proper timing. In spite of using insecticide for grub control, sometimes these animals may still visit the lawns in search of other food sources.

Again, in this situation the best option is to use traps. **LM**



BALAKRISHNA RAO

Manager of Research and
Technical Development
for the Davey Tree Co.
Kent, Ohio

SEND YOUR QUESTIONS TO:

"Ask the Expert"
Landscape Management
7500 Old Oak Blvd.
Cleveland, OH 44130

Please allow two to three months for an answer to appear in the magazine.

A new tree pest is causing concern in the northeastern states. It's a borer called the Asian longhorned beetle (*Anoplophora glabripennis*). This rather dramatic looking beetle seems to attack just about any hardwood. There is potential for a lot of damage, both for tree survival and for tree strength. The main area of concern in the United States is the northeast and midwest.

The Asian longhorned beetle, native to Japan, China and North Korea, most likely traveled to this country burrowed in raw wood used in shipping and packing materials.

The beetle is quite distinctive in appearance with black and white striped antennae 1.5- to 4-in. long and a 1- to 1.5-in. bullet-shaped body, shining coal black with scattered white spots. Don't confuse this beetle with the white-spotted sawyer, which also has long antennae but is a dull

bronzy-black without the shininess, the distinct scattered white spots or striped antennae.

In China, this pest seems to prefer stressed trees. Some of the signs of an attack are heavy sap flow from wounds and large sawdust accumulation at tree bases or where

branches meet the main trunk. Exit holes that are 3/8 in. or larger in the bark are obvious and can be scattered anywhere on the trunk, branches and exposed roots. Yellowing leaves and leaf drop are other indicators that the pest is present.

The boring occurs not only under the bark but also into the sapwood and heartwood of the tree or branches. The young larvae bore into the inner bark, feed for awhile and bore into the tree's heartwood to pupate. The adult beetle then chews its way out, thus leaving the hole.

The best time to spot the adult beetles is from May to October. The beetles normally stay close to their host trees, although the adults can fly up to 3,000 feet. Humans provide the easiest modes of transportation for the beetles; they can hitch a ride on vehicles moving through infested areas or be

spread in infected firewood or tree litter.

There is no efficient biological or effective chemical control of the beetle at this time. The only proven method is to cut and burn all infested trees. When the temperatures drop below 60°F, the trees can be cut to the ground and destroyed. Cooler weather also reduces the possibility of the adults flying to other areas.

The beetle seems to prefer the softer hardwood trees that are easier to bore into. Some species of trees that have been attacked include: black locust, pear, boxelder, plum, Chinese elm, silver maple, corkscrew willow, sugar maple, horsechestnut, sycamore maple, hybrid poplar, weeping willow, Lombardy poplar, white mulberry and Norway maple.

Although the Asian longhorned beetle prefers the softer hardwood trees, it may attack others. And in China, where poplars are grown commercially in plantations, sugar maple is used as a trap tree. The maples appear to be a preferred host and attract the beetles.

We don't need to be filled with horror and fear about this borer but be aware of this pest and its significance. If you see something really unusual get a sample and have it identified.

Here are a couple of websites for those of you who want to see more: http://willow.ncfes.umn.edu/pa_ceram/ceramb.htm; <http://www.chicagobotanic.org/Asianbeetle.html>; <http://freedom.cce.cornell.edu/clinton/ag/forestry/alhb.html>; <http://everest.ento.vt.edu/Facilities/OnCampus/IDLab/NewPests/ALB/ALB.html>; <http://www.chicagotribune.com/news/metro/chicago/article/0,1051,ART-17157,00.html>

If you think you have found this beetle, call your Animal and Plant Health Inspection Service (APHIS) Plant Protection and Quarantine (PPQ) State plant health director at the number listed below: CT 203/269-4277; DE 302/677-4093; IL 708/299-0024; IN 317/654-7792; ME 207/945-0479; MD 410/224-3452; MI 313/942-9005; MN 612/334-4194; NH 603/666-7445; NJ 609/259-8649; NY 518/438-3896; OH 216/552-4869; PA 717/782-3419; RI 401/828-9025; VT 802/828-4490; VA 804/771-2042; WV 304/372-8590; WI 608/264-5096. **LM**

Keep your eyes peeled



Nancy Stairs

NANCY STAIRS
Technical Editor

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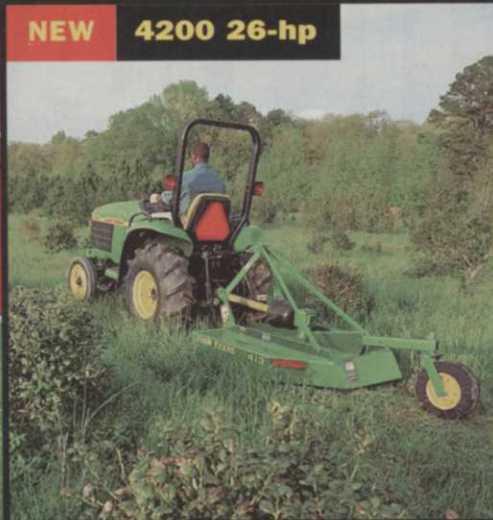
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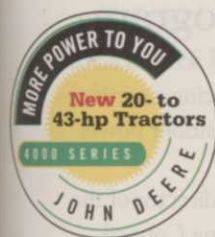
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NLA fights turf restrictions in Las Vegas

Las Vegas — The Nevada Landscape Association (NLA) has been busy successfully representing the green industry in an effort to affect a water conservation bill in Las Vegas. The bill sought to limit the amount of turf on commercial and residential properties. Water conservation is one of the NLA's biggest issues; in fact, the Reno chapter of the organization was successful in becoming a part of the strategic planning for water planning in Reno in the early '90s.

ter immediately swung into action. In spite of the late start, the NLA was instrumental in having the bill amended slightly in the green industry's favor. Initially, the bill stated that for new development, residential turf could not exceed 50% of the total landscapable area. This was amended to 50% of the "total front yard" which increased the amount of turf allowed, and which was more in keeping with the Coalition's original proposal. In addition, the bill banned turf completely on commercial projects. This was ultimately amended to allow 25% turf.

While the amendments were not as far-reaching as desired, Debra Drew, executive director of the NLA feels that the bill is liveable and that the involvement of the NLA is only the first step in representing the green industry in Las Vegas.

BILL 98-35

Commercial/Industrial Districts	Limited to a maximum of 25% of total landscapable area
Public Facilities Districts	Prohibited, except for schools, parks and cemeteries
Golf Course Use	Limited to 5 acres/hole, with a maximum 10 additional acres for driving range
Residential Districts (single family)	Limited to a maximum of 50% of total front yard area
Residential Districts (multifamily)	Limited to a maximum of 30% of total landscapable area

The newly organized Las Vegas chapter of the NLA had hardly been established when it learned that increased turf restrictions were being considered for the city. The Southern Nevada Coalition 2000, a group of private-sector activists, had recommended turf restrictions for new homes only. The goal of the Coalition was to be "restrictive without being oppressive," and it had the backing of the Southern Nevada Homebuilders Association, which represents the construction industry.

The initial proposal was expanded upon to be an even more restrictive ordinance by the mayor of Las Vegas, Jan Jones. The proposed bill would have tightened the city's restrictions by banning grass in front of businesses and public facilities as well as allowing at least 20% less turf in front yards than the Coalition's initial proposal.

The progress of the ordinance was well under way by the time the new branch of the NLA learned of it. The newly minted Las Vegas chap-

Schools like technician certification program

Austin, Texas — Vocational schools across the United States are embracing a certification program for teaching outdoor power equipment technicians.

Virgil Russell, executive director of the Equipment & Engine Training Council (EETC), based here, said, "the interest in schools to become certified is far better than our original projections."

These four schools have become EETC Certified to teach technical education for the outdoor power equipment industry: Lake County Area Vocational, Grayslake, IL; Ohio Technical College, Cleveland, Ohio; Madison Area Technical College, Madison, WI; and Anoka-Hennepin Technical College, Anoka, MN. EETC certification is pending for 14 other schools, said Russell.

Frontier a finalist for St. Andrews project

ST. ANDREWS, Scotland — Frontier Construction Co. is one of four finalists invited to bid on Phase I of a massive irrigation reconstruction project in the birthplace of golf. The St. Andrews Links Trust, which oversees administration of the world famous Old Course — in addition to the town-owned New, Jubilee, Eden, Strathtyrum and Balgove courses — has decided to replace the antiquated patchwork systems at all six layouts.

A centralized irrigation system has been custom designed by Robin Hume and Associates of Shrewsbury, England. Toro will provide the irrigation heads, and the Trust will soon choose an irrigation contractor to handle the system's complicated installation. Based in Jones Mills, PA, Frontier Construction is the only U.S. firm among the four finalists.

"We're honored to be named among the final four," said Frontier President Nick Scigliano, "and we're excited about the prospect of working in St. Andrews. What construction company wouldn't jump at the chance to work on such hallowed ground?"

Hume has designed a system whereby all six courses will be fed from a single centralized pump station. While the head greenkeeper at each layout will have a subcontrol unit, Links Manager Ian Forbes — who oversees maintenance of all six courses — will control the master unit.

"The conservation implications are significant," Scigliano explained. "With the new system, the links manager will be able to allocate only the water each individual course needs.

"Some have questioned whether St. Andrews is going overboard on the ir-

rigation issue," Scigliano continued. "But it's important to understand The Trust has only chosen to replace what's already there. And what's there is an antiquated, patchwork system."

The four finalists have been invited to bid only on Phase I, which encompasses renovation of the Balgove, Eden and Strathtyrum courses; work on the Old, New and Jubilee courses will follow next year. The contract stipulates that Phase I be completed by spring 1999, meaning the chosen contractor must install more than 1,500 irrigation heads on three separate courses while working through Scotland's bleak winter months.

"It's a very aggressive schedule," said Scigliano. "The timing presents a major challenge."

Frontier Construction is one of the golf industry's busiest irrigation contractors and course construction firms. During the past 12 months, the Frontier team has completed 18-hole irrigation installations at Duquesne (PA) Golf Club; Sugar Creek Golf Course in Lima, Ohio; St. Clair Country Club outside Pittsburgh; Windber (PA) Country Club; and Coamo Springs Golf and Tennis Club in Coamo, Puerto Rico.

No less active on the course construction side, Frontier also built Coamo Springs, an 18-hole Ferdinand Garbin design. Other recently completed new construction includes a fourth nine at Lindenwood Golf Club, McMurray, PA; nine holes at Red Oaks Golf Club, near Bloomingdale, Ohio; and a second nine (sub-contracted from The Bruce Co.) at Treesdale Golf & Country Club in Gibsonsia, PA.

AgriBioTech seeks to increase stock values

AgriBioTech Inc., a leading forage and turf grass seed company, has hired an investment bank to attract buying interest from major chemical and life sciences firms that want to gain a foothold in the biotech seed industry.

AgriBioTech has a 40% share of the US forage and turf grass seed market, strong germ plasm and biotechnology agreements with various companies that give AgriBioTech access to more technology.

Worldwide biotechnology research alliance formed

Dow AgroSciences LLC and Rhone-Polenc Agro signed a letter of intent to conduct research in the field of plant biotechnology to develop genetically modified plants and seed products containing multiple traits. This proposed research alliance supplements the proposed collaboration between Rhone-Polenc Agro and Mycogen Corporation, a majority-owned subsidiary of Dow AgroSciences, by adding non-Bt insect control proteins.

Heritage® fungicide approved for turfgrass use

Heritage fungicide from Zeneca has been granted approval for turfgrass disease control for lawn care and sports turf by EPA. Previously only registered for use on golf course turf and sod farms, Heritage can now be used for lawn and sports turf for more than 18 turfgrass diseases.

Corrections

In the LM 100 article (Sept. 1998, p. 18), we incorrectly stated the variety of bentgrass being used at Pinehurst Resort & CC's famed #2 course. The correct variety is in fact Penn G-2, which is also currently in use on Pinehurst's #1, #5 and #8 courses.

Also, in the LM 100 article, Environmental Industries, Inc., Calabasas, CA, reported 1997 revenues of \$351 million, 17% more than 1996. 1998 anticipated growth is about 21% with sales of about \$425 million.

We regret any confusion this may have caused.

[CLIPPINGS]



The sheer volume of free information available makes the Internet a resource that cannot be ignored.

By CURT HARLER and DAVID WEINSTOCK/ Contributing Editors

For fast answers, the Internet is the place to be. The Internet is a good place to start whether it is to solve an insect problem, order a mower part or check out recommended seed vari-

eties. Even more important than the Web sites listed below may be the many links from these sites to other key URLs.

A warning with using the Internet: don't fall into the "familiarity breeds contempt" trap. Local university and turfgrass experts still have the best handle on the local agronomic situation. The University of Florida's site is a good example of a great resource. It's a mistake to think that just because someone has an Internet site or is located far away, they know more than the local experts.

However, when the local dealer can't locate a part or where you want to find out "how the other guy does it," the Internet is a great vehicle. There are even some "fun" sites which will help eat up hours on rainy days or can be referenced in your customer newsletter.

The Internet is a solid-waste dump of information. Considered on the whole, there is precious little organization and fewer quality sites than poor ones. Yet the sheer volume of free information available makes it a resource that cannot be ignored. Search engines help. But all they really do is narrow the field by creating sometimes-giant lists of sites that contain words specified in initial search terms.

What follows is a listing of what we consider to be some of the better lawn care and turfgrass sites on the World Wide Web. How did we find them? We began by using search engines—primarily AltaVista, Hotbot, Infoseek and Excite. Later, we simply followed links from pages we'd already found in search of other promising material.

The sites we've listed here tend to be the most information-rich sites we could find. We also put a premium on pages that were easiest to navigate. A good example of this is floridaturf. This page features a very slick design that loads quickly. Cyberlawn is another page that is easy to navigate, though it does take a while to load.

If a design award were to accompany this article, the homepages of the now-defunct Lawn Institute (<http://www.lawninstitute.com>) would win it hands down. It is clean, elegant and very simple. Get there, if you can, before it is taken down.

Some sites really wowed us with content. Others had cool tools from which turfgrass and lawn care professionals could genuinely profit. We tended to bypass sites that simply listed abstracts or even full text publications.

Some sites really wowed us with content. Others had cool tools from which turfgrass and lawn care professionals could genuinely profit. We tended to bypass sites that simply listed abstracts or even full text publications.



A pro's guide to 'surfin' turf

Even with the find features most web browsers have, these sites can be very difficult to search. Others sites not included in this list were those that charged an access fee, such as the Turfgrass Information Center at Michigan State University. Though it is widely praised and was temporarily available, free-of-charge, while the MSU library tested its new interface, the connect fee was to be replaced well before press time.

Irrigation Association

<http://www.irri-gate.com/>

Everyone knows the way to find information on the Web is to use a search engine. But everyone who has used a search engine knows that even if you're a power user familiar with Boolean logic, field or phrase searching, the results you get are nine-tenths junk. David Zoldoske, director of the Center of Irrigation Technology at California State University, Fresno, has an answer for anyone interested in surfing up irrigation info. Irri-gate.com is a slick little search engine developed by the Irrigation Association.

Billed as an "irrigation-specific" engine, slick is the operant word here. It features a pretty good variety of search options ranging from standard keyword searching to field, title and URL searching and even relevancy ranking.

It also features a variety of non-standard search features, such as "What's New," "What's Popular," sounds-like and synonym searching. All this is available in a handy user template that allows visitors to pick search options from two pull-down menus.

Laura Dorsey, IA's Webmaster, said they use two bots to scan the Internet every 90 days and also collect Web sites via an automatic URL submit-site function. In operation for 1.5 years, Dorsey estimates the engine database has 60,000 pages.

USGA Green Section

<http://www.usga.org/green/>

Staying current in the golf course construction and maintenance game means keeping up with what's new with the U.S. Golf Association. The best place to do that, according to Charles Mancino, Penn State Extension turfgrass management specialist, is the Green Section of the USGA site.

This Web page could serve as a model for organization. It uses a file folder design metaphor to direct visitors to areas of interest. Some of the featured areas offer services like USGA's Turf Advisory Service and its Construction and Environmental Education Programs.

The site also lists all the research USGA is funding and has a download section containing a baker's dozen of articles on golf course construction and maintenance.

Lofts Seed Inc.

<http://www.turf.com/>

An outfit with a URL like this one either beats everybody in the turf industry to the Web, or paid top-dollar to one of those outfits that buys up all the good domain names and resells them to people who really want them.

Either way, they topped this great Web address with a well done, consistent design that includes a modest amount

of animation. This site proves, once again, you can project a conservative, professional image without looking stodgy.

It begins with a consistent background of (guess what!) grass with overlaid pictures used as links to pages deeper within the site. The design also incorporates a judicious use of frames for those less inclined toward visual navigation.

But what really sets this site apart from many others in the industry is that someone taught the Lofts people about the value of creating a virtual com-



munity around their product lines. Instead of just posting pictures about their products, Lofts created a virtual place to stop and learn about what they sell and, even more importantly, who they are.

Got a lawn care question? Click on "Ask the Experts" and email your question to one of their product specialists. Want to know at which trade show you can find them next? Click on their calendar. Want to know more about Lofts than what kind of seed they sell?

Check out their press releases. The company history is here, too, if you want to read it. But

perhaps one of the more interesting parts of this site is their testimonial area. You know the famous places that use our seed? Our favorite was the one about the Pentagon.

Cyberlawn

<http://opei.mow.org/>

Anyone who has ever had to crunch out a newsletter for customers knows how difficult it can be to find worthwhile material to include.

The Outdoor Power Equipment Institute's Cyberlawn site is packed with lots of easy-to-digest information on lawn-mower repair, maintenance

and safety topics. One of the neatest parts of this site is its Kids Section. It features a number of mower safety-related coloring pages that can be printed out easily. Of course, you'll need to get permission from OPEI to use these in your newsletters. There are also some interactive activities for children that are also safety-related.

Be sure to log in to the Mower Repair Shop section for information on engine tune-up, seasonal maintenance and fuel handling tips. There is also a collection of equipment service listings.

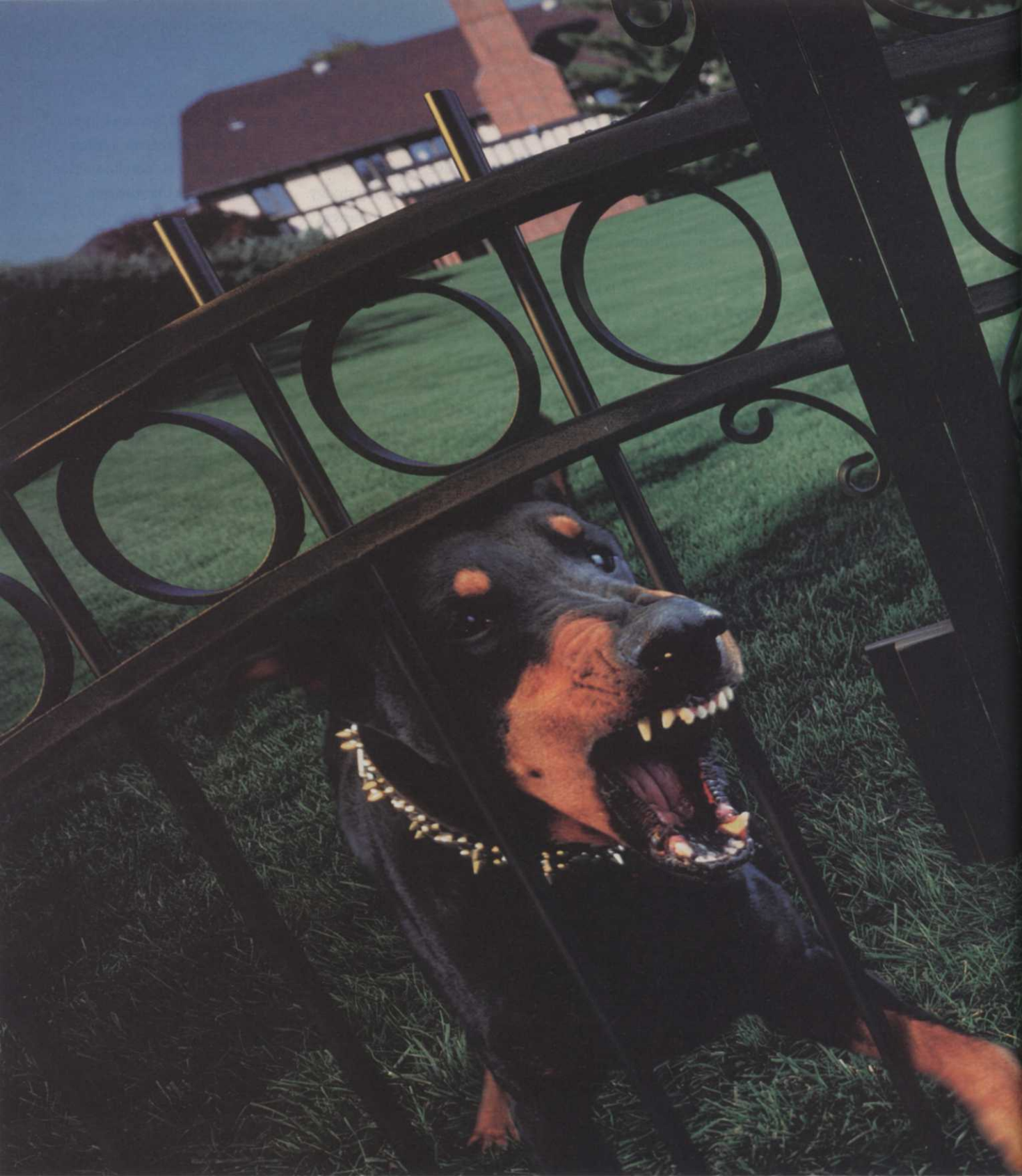
One other section worthy of note is a seasonal safety and maintenance calendar for a wide variety of outdoor power equipment.

EXTOXNET

<http://ace.orst.edu/info/extoxnet/>

EXTOXNET is an acronym for the Extension Toxicology

cont. on page 20



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Network. It's not pretty, but it works. This searchable database is designed to explain toxicological risk from pesticides in laymen's terms. The engine is being constructed by Extension toxicologists from the University of California at Davis, Cornell University, Oregon State University (it is housed on their servers), University of Idaho and Michigan State University.

You won't need a doctorate in soil science or toxicology to figure out the results of your searches on this engine. Plug in a simple brand name, such as Dyfonate, and EXTOTOXNET returns a page listing the active ingredient. Click on the ingredient (fonofos, in this example) and you get a page with brand names, labeled uses, chemical class, formulation, regulatory status, toxicological and ecological effects, environmental fate, physical properties, manufacturer's contact information—all in plain English.

Other useful information on this site includes pesticide information profiles and toxicology information in brief, written in simple language.

Texas Plant Disease Handbook
<http://cygnus.tamu.edu/Texlab/Lawns/lawq.html>

If you want to confirm that spot on the lawn you are working on is indeed brown patch, or if you just need a lawn and turfgrass disease refresher, look no further than the Texas Plant Disease Handbook. Part of a much larger index that also covers farm crops, ornamentals and trees, the Texas Plant Disease Handbook is the work of Texas A&M University.

Beginning on the left side of the page, users select the grass

(or host) species from a list of 10 warm- and cool-season grasses. They then select a causal agent, such as algal, fungal or nematodes, from a list of seven disease agents. There is also a keyword descriptor box for search terms, such as "root rot" or "wilt" on the far right.

The engine chugs a little bit and kicks out a page that has the name, a picture of what the disease looks like, a short text covering symptoms in both warm- and cool-season grasses and management/control techniques.

Weed Science Society of America

<http://ext.agn.uiuc.edu/wssa/>

We always knew there was a trade group for nearly everyone, right? Well, weed scientists have one now, and it is Weed Science Society of America.

"Members include academia and industry personnel from North America primarily and secondarily from around the world," said David Pike, WSSA's Webmaster. "We sponsor an annual meeting to promote research and scholarship in this area."

Maintained on the University of Illinois at Champaign-Urbana Extension Service Web server, WSSA's Web site is a virtual compendium of information about weeds and weed control.

WSSA's Web site has a photo database of more than 200 weeds, links to the federal noxious weed site, information about chemicals and various

search engines useful for identifying weeds.

One of the more interesting parts of this site is a genealogy chart for 18 weed control chemical



manufacturers. Even if you were never curious about who was merged and acquired to create such agri-industry giants as AgrEvo, this page will show you what happened to old vanished chemical giants like Mobay, Pennwalt and Ciba-Geigy.

Useful? Not really. Interesting maybe.

These folks have have pretty comprehensive links to pesticide safety pages, a list of herbicides and their chemical names and a page with links to federal agencies that regulate pesticide use. It also has a page listing Web sites for most of the herbicide manufacturers in the world.

floridaturf

<http://www.floridaturf.com/>

Here's a site that is essentially a huge library of information on warm-season turfgrasses. Designed, built and maintained by Dr. Philip Busey, an associate professor of

environmental horticulture at the University of Florida at Fort Lauderdale, it was originally put up as a classroom site.

Busey, who has more than 20 years experience as a turfgrass researcher, said he cre-

ated the site in late 1997. "After using two University servers to distribute class materials, I found it too difficult to post materials in a timely manner and (use a variety of Web tools)," he said.

He also never liked the length of the URLs he was assigned. So, he bought his distinctive domain name and pays \$20 a month to host it.

A small part of Busey's site is dedicated to showcasing Florida's turfgrass science program and projects at the Fort Lauderdale Research and Education Center. Students can find the curriculum, links to other classes, study guides at other universities and even old exams there.

The site features in-depth sections covering Bahia, St. Augustine, Bermuda and zoysia grasses. It also has a gigantic list of links, filed in intuitive, easy-to-follow categories.

Look for additional Web sites of interest to landscape and grounds professionals in future issues of Landscape Management. If you have one that you would like to see featured in LM's 'Surfin' Turf, please let us know at (440) 891-2636; fax, (440) 891-2683; e-mail, rhall@ad-vanstar.com

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Dimension ^b	■	●	■	●	■	●	●	●
Team ^c	■	●	●	●	●	●	NR	NR
Ronstar ^d	●	■	NR	●	●	NR	NR	NR
Surflan ^c	■	■	■	●	▲	●	■	■

Level of control

● Medium

▲ Medium-High

■ High

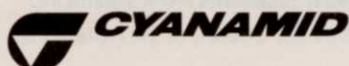
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Circle No. 106 on Reader Inquiry Card

LM's 1998:

People of the Year

Although they come from very different backgrounds, each of our 1998 People of the Year share a common characteristic: a focus on improving the industry around them through dedication and extra effort.

By the LM STAFF

Lawn Care Category

Lou Wierichs Jr., owner/president of Pro-X Systems Inc., Appleton, WI.

People who have worked with Lou Wierichs Jr. at various organizations agree on several things: he's generous with his time, finances and efforts; he's dedicated to achieving the organization's goals; and he believes these efforts should be enjoyable.

Wierichs joined the lawn care industry in 1988. After graduating from the University of Wisconsin-Stout with a B.S. in Hotel and Restaurant Management, Wierichs worked in several industries, including banking and printing. His eight years driving a semi-trailer gave him a sense of being on his own. "That was the closest thing to owning a business, without the headaches," he recalls.

In 1987, Wierichs became partners with two others in a Servicemaster lawn care franchise, which won the company's "Fast Start" award for quick growth in 1988. By 1990, the business had grown to include a second franchise in the Green Bay area.

After the Servicemaster purchase of Tru-Green and Chemlawn in 1991, Wierichs and partners established their own lawn care company — Pro-X Systems Inc. It offers lawn care, mowing and some landscape and tree care, as well as aeration and other additions. In 1995, Wierichs bought his partners

out and this fall, added a Christmas Decor franchise.

Jumping right in

Even when his company was new, Wierichs sought out others in the industry. At a trip to PLCAA's annual conference in Las Vegas, he attended a presentation by Bob Andrews, The Greenskeeper, Carmel, IN, on the benefits of belonging to local associations. This made a major impression on him. "I came back and made some calls to the state Department of Ag" about an finding or forming an association.

With other local green industry people, Wierichs helped get the Grounds Management Association of Wisconsin on its feet. "This really got me involved at the state level," he notes. Wierichs became active in the leadership of GMAW, as well as the Wisconsin Landscape Federation, a group coordinating the efforts of different green industry professions. Currently, Wierichs is WLF president.

He saw how critical organized efforts were to the industry. "In our industry, it seemed like there was always a fire pop-

ping up and we were always throwing water on it. I thought we should be united to battle those fires and also to take a more proactive stance in our communities."

Wierichs also became involved at the national level, joining the board of directors of the Professional Lawn Care Association of America in 1992, serving as its president in 1994 and stepping in to fill an empty directors' spot, in a term that expires this month. In fact, he proudly notes he joined PLCAA before he had ever treated a lawn.

Two other accomplishments

Wierichs views with pride are his service on the Green Industry Expo board (serving as president in 1996), and his work as president of the PLCAA Foundation, now called the Evergreen Foundation (currently, he is vice president).

Making it enjoyable

Terry Kurth, president of Lawn Care of Wisconsin Inc. and Badgerland Irrigation, Middleton, WI, has crossed paths often



Lou Wierichs Jr. career highlights

1987: Becomes partner in a Servicemaster lawn care franchise in Appleton, Wis.

1989: Grounds Management Association of Wisconsin representative to the Wisconsin Landscape Federation — a post held continuously since then.

1991: Establishes Pro-X Systems Inc.

1991-95: Director of the Professional

Grounds Care Category

George M. Gaumer,

national sales and operations manager, Commercial Services, The Davey Tree Expert Co., Kent, Ohio



Some of George Gaumer's earliest memories involve the green industry — he remembers playing in the yard of his father's landscape business in Warren, Ohio. In fact, the family lived on site. This early involvement extended during family vacations, when the Gaumers took time to attend annual conferences of the International Society of Arboriculture (ISA).

with Wierichs. He says Wierichs is "a consensus builder. He's looking for the things that benefit everyone in an organization."

According to Kurth, Wierichs tries to pay back an industry that has been good to him by "paying forward." And he does it in true Wierichs style, Kurth says: "Lou looks out for the best interests of the industry, but makes sure to build relationships and friendships along the way. He thoroughly enjoys people and wants to spread the fun through an organization that is getting things done." □

The business and management side of the green industry always fascinated Gaumer. "I noticed that a lot of people get into the field because they love horticulture and are good at working with plants, but some people are just not good with business. That's the side that always intrigued me," he notes.

After graduating with a B.S. in Business Administration (Marketing) from The Ohio State University, he joined a residential tree care firm in Columbus, Ohio. One of his first steps on the job was to become a member of ISA, where he held various positions, including Director of the Ohio chapter. He also became an ISA-certified arborist.

In supportive company

Gaumer joined The Davey Tree Expert Co. in 1977. With Davey's support, he continued his involvement with ISA and became a charter member of the Northeast Ohio Professional Grounds Management Society branch when it was started in the early 1980s. The experience of helping to develop the PGMS branch eventually led to activities at the national level, and by 1992, he became a PGMS director at large for a three-year term.

Coincidentally, changes in the industry and in Davey's business direction made this connection more valuable for Gaumer. "I started out going to some of the national meetings as a way to get business from in-house grounds managers," he notes. "But along the way, I got involved more with the organization at the same time Davey

diversified into grounds maintenance work. Soon the meetings became educational opportunities (for us)."

Finding consensus

Jeff Bourne, director of operations and education with Associated Landscape Contractors of America (ALCA), experienced Gaumer's team-building approach: "The phrase 'consummate professional' comes to mind because although he approaches things in a very businesslike fashion, it's well balanced with the human side, which creates an atmosphere of comfort that is productive."

David Luse, director of corporate development at LandCare USA, Houston, and founder of Arteka Corp., agrees: "George's leadership style is calm consensus building. He's a true leader and showed it by helping to pull the GIE partnership together." □

George M. Gaumer career highlights

1975: Joins Ohio Tree Surgery Co., Columbus, Ohio

1977: Joins ISA and becomes involved with industry organizations. Is appointed to Board of Governors and committee chair positions.

1977: Joins The Davey Tree Expert Co. as assistant advertising manager

1986: Becomes charter member of the Northeast Ohio Chapter, Professional Grounds Management Society.

1992-94: Board of Directors, Green Industry Expo

1994: President of Green Industry Expo

1996-98: PGMS Director at Large

1996-98: Board of Directors, Green Industry Expo

Lawn Care Association of America.

1991-96: Board of Directors, Green Industry Expo

1994: President of PLCAA

1995-97: President of PLCAA Foundation

1996: President of Green Industry Expo

1997-98: Director of PLCAA

1997-99: President of Wisconsin Landscape Federation

1998: Vice President of Evergreen Foundation

Golf Industry Category

Ron Dodson,

president of Audubon International, Selkirk, NY



The president of Audubon International may not seem an obvious candidate for a Person of the Year award in the Golf Industry category and yet Ron Dodson's impact, and the impact of the Audubon Cooperative Sanctuary System, the Signature Cooperative Sanctuary program and the Gold Signature Cooperative Sanctuary program, is having an effect on the golf industry.

The start

Ron Dodson started his career as a biology teacher in the midwest and in 1970 found himself in Henderson, KY, where the John James Audubon museum is located. From his initial contact, this self-described "fence-climbing radical" never looked back.

The idea of a "Community Conservation Network" began to develop around 1985 as a plan to have entire communities committed to conservation ideals. In 1988, with Dodson promoting the idea at conferences and to community leaders, he found that the interest level was extremely low. Dodson didn't give up on his idea, but decided, "Okay then let's go door to door. If we get enough citizens involved, maybe we'll end up with a community."

Golf gets involved

When this approach seemed to be working, Dodson turned his sights to businesses. Dodson did not have golf courses in his immediate plans, although as a golfer in college he realized that golf courses had a lot of potential. But it wasn't until a call from a course in upstate New York that things started moving. But from that modest beginning, there are now 2,000 golf courses in the Cooperative Sanctuary program.

The strategy

Dodson won't claim to having a business plan or a system for success. His philosophy is simple: "We're going to work with anyone, anywhere and everywhere and not discriminate who we work with... and we'll just take one door at a time, one step at a time."

There is no doubt that this approach has been successful in large part to his attitude and his gift for communication. Bob Swift, development manager of the Indian River Club, Vero Beach, FL, says that when he first read an interview with Dodson he was impressed, "I felt he was someone I wanted to meet and talk to."

Indian River became the third golf course to become a Signature Cooperative Sanctuary. Swift says that the entire experience has been rewarding both personally and professionally. Dodson's approach,

says Swift "has been to move the dialogue to a cooperative rather than antagonistic approach."

Prior to his work with golf course superintendents, Dodson acknowledges that he didn't really have a grasp on the responsibilities and range of knowledge required—"water quality protection, wildlife management, agronomics, horticulture"—as well as taking the time to "talk to golfers, work in the community, be involved in schools and be committed to outdoor management which includes a whole lot more than just how fast a green is."

Dodson finds great satisfaction in seeing his idea expand and grow, but has taken his knocks too. Early on, some environmental groups attacked the idea of working with golf courses. It was a shock for Dodson, who sees himself as an avid environmentalist. "I still go home sometimes and think, have I really gone over the edge here? I don't think I have, but some people think that I have sold my soul to the devil."

But Dodson is philosophical and believes that "when you cut through it, what is really most important is to care about people." □

Ron Dodson career highlights

- 1970:** Initial involvement with the National Audubon Society
- 1978-1982:** Executive Director of the Western Kentucky Environmental Planning Agency
- 1982-1987:** Regional Vice President of National Audubon Society
- 1985:** Awarded National Environmentalist of the Year
- 1985:** Idea for community-based conservation program takes shape
- 1987:** President of Audubon International
- 1988:** Pitches program to community leaders
- 1991:** First golf course registers in the Audubon Cooperative Sanctuary Program
- 1992:** First golf course project registers in the Audubon Signature Cooperative Sanctuary Program
- 1993:** Awarded the GCSAA President's Award for Environmental Leadership
- 1997:** First golf course project registers in the Audubon Gold Signature Cooperative Sanctuary Program
- 1997 to present:** Co-chairman of the USGA Wildlife Links Research Committee

Landscape Category

J. Landon Reeve, IV,

owner/president Chapel Valley Landscape Co., Woodbine, MD.



Landon Reeve and a buddy made themselves a small stack of fliers and passed them out in their Maryland neighborhood. The postcards proclaimed that the two were for hire. The asking wage: \$1 an hour—the going rate for school-boy help in 1955.

"I got a call from a local wholesale perennial grower," recalls J. Landon Reeve, IV, whose father was a mail carrier. That call was the start of a successful career in the green industry, a career that's earned him Landscape Management's Landscape 1998 Person of the Year.

From bottom up

For five years, Reeve worked summers and weekends for Bluemount Nursery, a perennial grower and wholesaler in Maryland. "That's basically how I got interested in horticulture," he recalls. In 1963 he earned a B.S. in Ornamental Horticulture from the University of Maryland.

While his interest and knowledge in horticulture grew, he was also determined to, someday, run his own show.

He had a dream

"I knew in high school that I wanted to have my own business," he says. "It was in my head. I can't pin-point why I felt that way except for maybe that part-time work at the nursery."

Reeve's first job with a local landscape company lasted about a year, before he and the company's garden center manager broke away and started their own garden center/landscape operation.

"It was just a little business, but it was a great experience," he says. The two men ran that business for four years before Reeve decided he wanted to go on his own.

"I couldn't see working seven days a week in definitely. I wanted to have a family and I wanted to have a life," he says. "While I enjoyed it, I was at the garden center all weekend, and all week I was doing landscaping."

Founds Chapel Valley

In 1968, Reeve started Chapel Valley Landscape. He was its sole employee. While he's still the president and sole owner of the business, the landscape company now has 250 employees. It offers a full range of exterior landscape services, mostly in Maryland and northern Virginia.

"I don't know how we got this size," he says. "We really didn't have a plan to get big. Our plan was do quality work and take care of our customers and our employees. Our company just kept growing."

This insistence on providing quality work and excellent service has characterized Chapel Valley from its inception. This excellence is a reflection of the company's founder and president, colleagues tell LM.

"I've probably known him as long as I've known anybody in ALCA (Associated Landscape Contractors of America)," says Rod Bailey, Evergreen Services Corp., Bellevue, WA. "He's been a mentor to me as well as being a good friend."

"Landon is a sharing and caring person, and that certainly applies to his strong sense of professionalism in the industry."

Adds Ron Kujawa, Kujawa Enterprises, Inc., Cudahy, WI: "Landon is a gentleman in every sense of the word. There is dignity and class about him."

A past ALCA president, Reeve has shared what he's learned about the industry through his long-time participation in ALCA, the American Association of Nurserymen, and in a host of state and regional industry organizations.

Landon Reeve is still much involved in the day-to-day operation of Chapel Valley, but he's begun the transition process to the next generation, including a daughter and a son in the business. **LM**

J. Landon Reeve, IV, career highlights

1955: Lands first green industry job, a summer job with a perennial grower/wholesale company

1963: Graduates from University of Maryland with a B.S. in Ornamental Horticulture

1964: He and a partner found a small garden center/landscape business

1968: Establishes Chapel Valley Landscape Co.

1977-79: President of Landscape Contractors Association MD-DC-VA

1980-81: President of Maryland Nurserymen's Association

1984: President of the Associated Landscape Contractors of America

1992-94: ALCA Certification Board of Governors

1994: American Association of Nurserymen Long-Range Planning Committee

NEMATODES where are we headed?

Nematodes can be a problem for turf and ornamentals in nearly any landscape, but they're tricky to control just about everywhere.

By ROBERT A. DUNN

Nematodes? Who cares? That's a southern problem and nothing to worry about away from the Southeast, right? Wrong! Nematodes become problems more often and are more apt to become severe problems in southern landscapes than in most other regions of the country, but you can be sure that there are some kinds of nematodes in nearly every tablespoonful of landscape soil.

And they occasionally can become serious pests in many parts of the United States. Nematodes visibly damage golf course turf in such states as Massachusetts and Michigan; they occasionally weaken lawns or other fine turf in most northern and middle states; and they can damage many species of ornamentals (with the risk increasing with more warm soil days per year and prolonged culture of the same ornamental species).

Could you recognize damage caused by nematodes if it occurred on a property in your care; would you know when it was serious enough to worry about and what to do about it? There is not enough space here to give a good short-course in nematode diagnostics, but most Land-Grant Universi-

ties' Cooperative Extension Services have people and labs that can help you.

Nematodes 101

Plant-parasitic nematodes are, as you may know, microscopic worms (not earthworms — different Phylum) that live in plant roots or the soil around them and feed on the living roots. There are tens of thousands of kinds of nematodes, but only about 10 percent feed on plants. Of these, a few cause almost all of the damage to plants.

In fact, one group, the root-knot nematodes (species in the genus *Meloidogyne* for the technically inclined) have been shown to cause about 75 percent of the economically important nematode damage to plants in the tropical and warm-temperate zones of the world. Root-knot nematodes are those most often detected as causing problems in landscape ornamentals in the central and southern U.S. and may infest interiorscapes anywhere in the country.

The picture in turfgrasses is much more complex — several genera of nematodes can damage grass roots and not all grasses are equally sensitive to each genera. Worse, they do not cause such easily recognized symptoms on grass roots as do the root-knot nematodes on most of their broad-

Lance nematodes protrude from a St. Augustinegrass root after soil was washed from the root.

leaved hosts, so their effects are more likely to accumulate for a long time before they are recognized.

Nematodes are stress-causing organisms. They rarely cause a directly lethal disease. Instead, nematodes weaken plants by diverting energy that should go into normal growth or flower production by altering the growth of roots, injuring roots so they lose some of their most necessary tissues or preventing normal root growth.

In many cases, the most practical way to treat a nematode infection is to strengthen the plant that is infected, with special attention to the needs of healthy roots. Fertilization, watering practices and drainage, mowing practices for turfgrasses and improvement of the physical characteristics of the soil may all help plants withstand some nematode infection.

Of course, every pest has circumstances in which it simply overwhelms normal plant health efforts and nematodes are no exception. However, today's landscape manager has few or no highly effective nematocides that can quickly correct a serious



nematode problem on established plant material in the landscape. Why? How did we get into this situation, and what are the prospects for improving it in the next few years?

Wanted: Effective nematode control

The problem stems from a few basic facts about nematode biology and grounds management, coupled with the modern concern about environmental contamination with potent pesticides:

1. Nematodes are *aquatic* animals — if active, they are wet! This means that any control agent, chemical or otherwise, must reach them in water. All chemical nematicides are quite water-soluble.

2. Nematodes are small and their normal movements are not as likely to bring them in contact with a thin zone of treated soil as is often the case with soil-borne insects. We have to get the nematicide to the target organism, because it is very unlikely to contact a thin layer of treated soil by its own movement. Some nematodes live inside roots, so they are even more difficult to reach with chemical treatments. If we apply enough of a pesticide to produce a lethal dose of chemical throughout the volume of soil in which we want to control nematodes, the nematode control rate is almost always the highest on the label for products that are registered for both insect and nematode control.

3. Most of the pesticides marketed for nematode control in the past 25 years have been moderately to highly toxic organophosphate or carbamate compounds, potent cholinesterase inhibitors that are dangerous to fish, birds and all other warm-blooded animals, including man.

4. The soils in which nematodes affect plant roots most are sandy soils with little organic matter or fine mineral particles that could retain soluble compounds or water — the very soils that require the most irri-

gation to keep plants vigorous. This is a serious "nematicide dilemma" — the soils in which nematicides can be leached most easily through the soil profile and into subsoil and groundwater are those in which we need to apply extra water. This increases the risk of leaching even further — and these are the soils in which plants are most dependent on intact healthy roots. They are most sensitive to the damage caused by nematodes.

Hence, the combination of these four characteristics means that when using nematicides to reduce nematode populations in landscape ornamentals and turfgrasses, we have been applying high rates of toxic and water-soluble pesticides to situations in which necessary cultural practices have most increased environmental risks from



Nematode affected turfgrass roots (top) show a lack of branching and feeder roots which are necessary to bind particles to the roots, when compared to unaffected turfgrass roots (bottom).

their use. These factors, and others, have led to the loss of products formerly used as nematicides for turf and ornamentals.

Testing new nematicides

This situation obviously gives rise to high demand for effective nematode control agents that:

Know your nematicide

Many "new" products are being offered to the public as nematicides, ranging from new uses of very well known "traditional" pesticides to products based on materials used as natural nematicides for centuries to new products based on modern technology. Unfortunately, we have few research data by which to evaluate most of these products.

If considering them, keep these facts in mind:

► EPA registration of a product as a nematicide is no proof that it works — only that the product is acceptably safe when used as prescribed on the label for the uses claimed. EPA rarely requires proof of efficacy before labeling a product.

► The basic rules of biology and chemistry that apply to traditional pesticides (above) apply to any kind of nematicide: They must be water-soluble to reach the target and they are most needed in soils in which the risk of leaching is greatest. That may be less important in terms of environmental contamination with the modern "soft" products, but it still

means that they will be lost more quickly from the root-zone where the nematodes live, so they will be where they are needed for a shorter period of time in the soils in which you most need their effects.

► A product or treatment that works for the claimed purpose in the cool, heavy soils of the upper Piedmont may be much less effective in the warm, heavily-leached sands of Florida.

- ▶ are environmentally benign;
- ▶ have low toxicity to humans and animals, both wild and domestic;
- ▶ are not phytotoxic so they can be used on a wide range of ornamentals and turf species; and
- ▶ if at all possible, can also claim to be "natural" — very attractive in today's market.

In 1998, we evaluated many "soft" (i.e., low in toxicity and environmental impact) products for turf nematode control under Florida conditions — exactly the set of circumstances most difficult for persistence of water-soluble compounds. The products tested included three whose "active ingredients" are living microbes: ACTINO-VATE PLUS® (*Streptomyces lydicus* WYEC108, an actinomycete; Natural Industries, Inc.); DENY® (0.6 percent *Burkholderia* (= *Pseudomonas*) *cepacia*, a bacterium; CCT Corp.); and PROSPERNEMA® (a proprietary formulation of spores of nematode-trapping fungi; Circle One International, Inc.).

Two others were comprised of compounds derived from living organisms: DITERA® (killed culture of a fungus, *Myrothecium verrucaria*; Abbott Laboratories) and an experimental product in early stages of research and development.

Two more were botanical materials based on plant products with histories of use as nematocides: NE-MAFERT® (mixture of rapeseed meal and neem cake; from Atlantic Australasia) and NEOTROL® (composed 100 percent of ground-up plants of a patented variety of sesame; Parkway Research Corp.).

The last of this year's "soft" candidates was a product originally developed as a sol-



Some of the new 'soft' candidate nematicides must be used at very high rates (approximately 1 ton/acre) giving the appearance of a very heavy topdressing on fine turfgrasses.

vent, but for which some nematicidal activity was discovered accidentally and demonstrated experimentally several years ago: SAFE-T GREEN® 18 (a proprietary blend of linear secondary alcohols reacted with ethylene oxide; SMI).

Unfortunately, none had an appreciable impact on nematode populations or their effects on warm-season turfgrasses in these trials (a total of over 10 field experiments), but the search continues. After all, there is a clear need for better nematode-control agents to protect landscape plantings in many

parts of America. With enough incentive, those products will be found.

Strive for root health

What can we do in the meantime? Do everything possible to favor root health and disfavor nematodes — improve soil organic matter content, attend to the nutritional

needs of roots, water for maximum root development and minimize other stresses that might inhibit root growth and function. If you decide to try some of the more environmentally friendly new products that claim some effect on nematodes:

- ▶ Manage soil and water to minimize leaching out of the root-zone once the material is applied correctly.

- ▶ Make objective comparisons with untreated plants, replicating all treatments three or more times to be sure that observed changes really result from treatment and not just chance.

- ▶ Sample all plots (including controls) before and after to be able to truly judge the merits of the new treatment.

The stakes may be high: Don't gamble too heavily on a product that is not proven to work in your conditions. A product that does not work in your situation costs money without giving you a return, may disenchant a good client and may lead to development of even more serious situations by delaying more positive action that could have been taken.

—The author is Professor of Nematology, University of Florida, Gainesville, FL.



Thin bermudagrass turf on a golf course fairly showing typical above-ground response to root stress caused by nematodes.



Yamahauler can be converted from a box application to a flatbed.



Kromer's Landscape Machine is a one-vehicle tool that can handle lots of landscape and grounds maintenance jobs because of a range of attachments.



Ground-Tek's GT Pro-Man has adjustable spray gun.

UTILITY VEHICLES:

They're small but turf-tested tough

By CURT HARLER / Contributing Editor

Our nominee for the most abused vehicle in the groundskeeper's garage is the utility vehicle. Grounds crews use the handy, motorized, miniature pickups the same way cowboys used to use horses: to carry loads, run errands and as basic transportation. Only today's cowboys don't treat the utility vehicle half as kindly as those of yesterday. Utility vehicles are subject to lots of stop-start driving, get overloaded with seed or fertilizer bags, are left in the rain and are victims of haphazard maintenance schedules.

Just as the perfect car would be designed with the lines of a Miata, the luxury of a Cadillac and carrying capacity of a Kenworth, the perfect utility vehicle would be able to zip around into tight spots, carry more than a pickup and glide over the turf-grass on those trips, leaving no marks behind.

As good as these utility vehicles are, each still has its special features. That requires some analysis before making the buying decision:

- Is the vehicle going to be used primarily to transport people and tools?
- Is it going to serve as the equivalent of a junior pickup truck?
- Is it expected to run all day without refueling, or will it be used for short hops?
- Should hydraulics or a PTO be attached so it can be used for other tasks?
- Is a tight turning radius required so the cart can maneuver between plant beds or shrubs?

The answers to most of those questions can be found in the handy utility vehicles and attachments found below.

AGRI-FAB
217-728-8388
www.agri-fab.com

Sullivan, IL-based Agri-Fab has a full line of lawn groomers, rollers, sprayers and carts. Their 4-wheel steerable axle cart is 16-gauge steel with

cont. on page 32



17 good reasons why a Bobcat long-wheelbase loader is the wise buy for landscapers.

1. The extended wheelbase on the Bobcat® 763, 773, 863, 873 and 963 skid-steer loaders not only makes for a significantly smoother ride, it also lets you lift heavier loads than a compact wheelbase machine. The operator works in smooth-riding comfort all day long.

2. Bobcat loaders are built to be dependable. Landscaper Roy Poirier of Barrie, Ontario, works each of his six Bobcat loaders up to 2,000 hours a year excavating, backfilling, grading, and loading and unloading topsoil and sod. "I can't say enough good about them," he explains.

3. Designed with muscle to spare, a Bobcat loader will dig all day — and can easily lift and carry sod, bricks, blocks and other heavy loads.

4. A hefty diesel engine with plenty of power makes every Bobcat loader a non-stop work-horse that quickly handles big jobs even in small spaces.

5. With brisk travel speeds, Bobcat loaders cover more ground in less time. "The loaders allow us to work faster and take on more and bigger jobs," says Eric Proffitt, co-owner of a landscaping firm in The Dalles, Oregon.



6. Besides being brawny and fast, Bobcat loaders have added reach and lift height to clear high-sided truck boxes and hoppers. Loading and unloading is a breeze.

7. Bobcat loaders come in sizes to match every job. The 773, for example, is our mid-size lift-and-carry champ. The somewhat larger 863 takes on heavy-duty work with added power and speed, and the extra muscle of the big 873 makes every landscaping job easier, faster and smoother.

8. The hydraulic pumps on Bobcat loaders are designed to generate plenty of hydraulic power to operate attachments like Bobcat® Augers, Landscape Rakes, Power Rakes, Trenchers, Tillers, Breakers and more. High-flow options are also available for some models.

9. Speaking of attachments, we design and build more than any other skid-steer loader manufacturer.



Depending on model, you can select from some three dozen attachments, each with full warranty and Melroe's unequaled parts and service support.

10. Our reliable Bob-Tach™ system makes attachment changes fast, secure and hassle-free. A Bobcat loader operator can easily replace a bucket with Bobcat® Pallet Forks, Landscape Rake, Stump Grinder, Combination Bucket, Backhoe, Auger, Grapple and others — all as quick as a snap.

THE bobcat ADVANTAGE

11. Bobcat loaders have drive chains that *never* need adjustment. We use endless loop, hardened steel drive chains configured in a "bow tie" pattern for longer life even in the most rugged conditions — with no periodic, time-consuming adjustments.

12. You can forget about axle grease. Bobcat axle bearings are self-lubricating — never need greasing. And our hub design offers great seal protection. Most other loaders require lots of grease — both axle and elbow.

13. Serviceability is unsurpassed. Simply open the swing-out tailgate for full access to the engine's checks and fills, filters and battery. And unlike other brands, the lift arms need not be raised to service the machine. Shop time is spent repairing, not gaining access.



14. The Bobcat belt drive design allows the engine to run slower, resulting in quieter operation, longer engine life and lower fuel consumption — another feature found only on Bobcat loaders.



15. Operator training course kits and safety videos, available from your Bobcat dealer, let you train new operators and bring current operators up-to-date with the latest safety and operation functions on Bobcat products. (Some also available in Spanish.)

16. Bobcat loaders maintain high resale value year after year because of the Melroe Company's long tradition of quality-built products and after-sale support.

17. When you buy Bobcat equipment, you get the advantage of a worldwide network of Bobcat dealers offering industry-leading parts and service support. In fact, there are more full-time, dedicated Bobcat dealers and factory-trained support staff working exclusively to serve your compact equipment needs than any competing manufacturer in the world.



Model	763	773	863	873	963
Wheelbase:	40.6 in	40.6 in	43.7 in	48.8 in	51.1 in
Rated operating capacity:	1500 lbs	1700 lbs	1900 lbs	2300 lbs	3000 lbs
Lift height:	114.5 in	115 in	121 in	124 in	128 in
Lift path:	Radius	Vertical	Radius	Vertical	Radius
Horsepower:	46 hp	46 hp	73.5 hp	73.5 hp	105 hp

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The very first. Still the very best!

> LM REPORTS

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reinforced guides. The steerable, three-quarter inch axle turns four 16x6.5-inch turf tread tires with zerks. This cart can handle up to a ton. Also available is the 2-axle Super ATV-17, with its 1-inch axle and capacity to haul up to 1,700 pounds at speeds to 20 mph. A 60-inch bedliner is available for either unit.

Circle No. 250

CLUB CAR, INC.

888-227-7925

www.clubcar.com

Both the Turf II and the Turf II XRT from Club Car, Augusta, GA, feature an 11-hp gas engine with pedal start. The Turf II has 1,200-pound rated capacity and comes standard with antisway torsion bar, synchromesh transmission, neutral lockout switch, fuel gauge, hour meter and headlights. The XRT is built to handle extra rough terrain, with 4-wheel brakes, 6.4-inch ground clearance under the differential, heavy duty stabilizer bar, brush guard and heavy duty all-terrain or turf tires. Optional 1,000-pound winch, electric lift or hydraulic dump, exhaust spark arrestor and pintle hitch are available.

Circle No. 251

JOHN DEERE

800-468-8517

www.deere.com

Two utility vehicles, the Gator 4x2 and the 6x4, are available at your local Deere dealership. The 2WD 4x2 has a 10-hp air-cooled single-cylinder engine and 900 pounds

towing capacity. The 4WD 6x4 is powered by an 18-hp liquid-cooled V-Twin engine and has 1,200 pounds towing ability. Both models have two front wheels and a low center of gravity for better stability, a relocated drive train, and maximum ground speed of 15.5 mph. They feature side-by-side seating with raised seat edges and hip restraints. Heavy duty, all-purpose tires offer improved puncture and wear resistance with deep-lug design.

Circle No. 252

E-Z-GO TEXTRON

706-798-4311

www.ezgo.com

The newest member of the utility vehicle family from E-Z-Go, Augusta, GA, is the Workhorse 800. With a 46x35x10-inch cargo bed and an 800 pound payload capacity, it is ideal for light duty applica-

and pinion steering for top handling.

Circle No. 253

GROUND-TEK

407-877-7473

www.groundtek.com

Utility landscape maintenance machine is perfect for large area coverage, spot spraying and fertilizing golf courses and other green areas. Rear utility tray, made of aluminum, carries five 50-pound bags. The GT ProMan from Ground-Tek, Ocoee, FL, has an adjustable spray gun, letting tech spray hard-to-reach areas without leaving the unit. Ornamental gun is ad-

pulley, and heavy duty belt continuously sustain power and speed. Optional features include a front carrier, snow blade, canopy, hydraulic front disc brakes, turn signals and a bed liner.

Circle No. 255



Haul Master's Huskie HD has 1,000 lb dump box.



E-Z-Go Workhorse 800 has an 800-lb payload capacity and a cargo bed equipped with a bedliner.

INGERSOLL EQUIPMENT CO.

920-582-5000

www.ingersoll-inc.com

The HC48 pull-behind rough-cut brush Hydracutter from Ingersoll Equipment Co., Winneconne, WI, has a working width of 48 inches. The deck frame is welded 10-gauge steel and the mower rotates at 1,082 rpm. Two steel hardened blades, each 19.25-inches long make quick work of any project. The unit has five adjustments, cutting height from 1.5 to 6 inches, and attaches with a hitch drawbar and pin.

Circle No. 256

JACOBSEN

800-727-JAKE

www.jacobsen.textron.com

The SV-series utility trucks from Jacobsen, Racine, WI, come in a variety of models for any use. These 4-wheel units come with either a 34-hp gas or 23.5-hp diesel engine. They are capable of handling loads to 2,800 pounds. A hydraulic PTO makes changing attachments easy, and the SV has a standard hydraulic lift. Also check out the 1110 Hauler, which carries up to 1,000 pounds and has rear and side cargo box panels which are removable for oversized loads. The 2315/2015 models are 3-wheel units with ei-



John Deere's Gator available in 2WD or 4WD.

tions on golf courses or other grounds environments. The cargo bed is equipped with a bed liner. Center console has a 4-position drink/2-way radio holder. It is available in two versions: the 800G, a gasoline-powered unit that features a 9-hp, 295-cc twin-cylinder overhead cam engine; and the electric 900E, powered by a quiet 36-volt, high efficiency motor. Both have rack

justable for wide or narrow patterns with pressure from 0 to 300 psi. With the shift of a lever, operator can switch back to boom spraying.

Circle No. 254

HAUL MASTER, INC.

800-848-4285

The Huskie HD from Haul Master, Mendota, IL, features a 1,000-pound dump box capacity — largest in its class — yet is small enough to fit in a standard pickup bed. This is the new, upgraded version of the original Huskie utility vehicle. It has a 4-cycle, air-cooled, 16-hp Briggs & Stratton engine. Auto torque converter with Salsbury clutch, driven

ther a 23.5-hp or 20-hp engine. Both are highly maneuverable and both can handle loads up to 1,500 pounds.

Circle No. 257

KAWASAKI
949-770-0400
www.kawasaki.com

Put the 1999 version of a mule to work with the Kawasaki Mule 2500 series. Designed to be

ments make it a versatile utility tool at any operation.

Circle No. 259

KOYKER
605-647-2811

Zip along in the Raptor Utility Vehicle from Koyker, Lennox, SD. With a top ground speed of 25 mph, three forward gear ranges, and a powerful engine, the Raptor is able to handle rock hauling, bags

cooled engine. There are 22- and 27-hp models available. All feature rugged hypoid differential with integrated 2-speed transmission and standard quick-connect hydraulic box make it easy to use this workhorse. Units come with two seats and can be hooked up with optional PTO (standard on the 22-hp 633 model) to work with sprayers, spreaders or other units.

The 4-wheel Turf-Trucksters fea-

TORO
612-888-8801
www.toro.com

The Toro Workman Utility Vehicle provides unparalleled versatility, reliability and durability. It offers 3-wheel maneuverability with 4-wheel safety and stability. It is available in 2-wheel drive or 4-wheel drive, with a gasoline or diesel engine. The Workman is designed for carrying heavy loads and performing unique



Kawasaki Mule 250 is lightweight, maneuverable, but carries over 800 lbs.

lightweight and highly maneuverable, the 2500 can handle up to 803 pounds of cargo in its 13.5 cubic-foot tilting bed. All have large, low-pressure, high-flotation balloon tires that are easy on the turf. Every unit has a dual-mode differential that can be unlocked to minimize disturbance to grass. Assembled in Lincoln, NE, all units come with continuously variable belt-drive automatic transmission. The smallest, the 550, will fit into the cargo bed of a pickup for long-distance transport. And, the 2520 Turf model can carry over 1,300 pounds and has a maximum speed of 16 mph.

Circle No. 258

KROMER
800-373-0337
www.kromer-afm.com

The Landscape Machine from Kromer, Mound, MN, is a one-vehicle tool for a multiplicity of jobs. Power options include an 8-hp Kohler Magnum M8S, 9-hp Briggs & Stratton, or 8-hp Honda. The unit's hydrostatic transmission, electric start and full fleet of attach-

of fertilizer or seed, and still make its way over hills without bogging down. Available with stake-sides for the bed area, it has all required operator protection features for safe handling.

Circle No. 260

RANSOMES CUSHMAN RYAN
800-228-4444
www.ransomes.com

The 3-wheel 536 Turf-Truckster from Cushman features a 20-hp Kawasaki 4-cycle, 2-cylinder, liquid

ture towing hitch, fuel gauge, hour meter, hand throttle, hydraulics with auxiliary outlets and available PTO (standard on the 634). These utility vehicles are rated at 2,600 pounds each for box, operator and passenger. Every model has live hydraulics and two models have power steering for ease of operation. All units have large self-adjusting rear brakes to deliver the most stopping power under load.

Circle No. 261



The Toro Workman available in 2WD or 4WD. More than 30 attachments, accessories available.

tasks. More than 30 attachments and accessories are available to customize the Workman for specific needs.

Circle No. 262

Yamaha Golf Car
800-843-3354
www.yamahagolfcar.com

The Yamahauler utility vehicle is designed to be two vehicles in one. By unbolting the sides and tailgate, the Yamahauler can be converted from a box application to a flatbed application. The bed is 4x4 feet, has 13.4 cu ft of space and 1,000 lb capacity. The Yamahauler's elongated steel frame is fortified with channel-over-tube design, and features a 5-mph front bumper that protects against impact damage. These features, combined with the vehicle's special suspension system enhance its reliability. Powered by Yamaha's 10-hp, four-stroke OHV engine, it is available through a nationwide dealer network.

Circle No. 263



4-wheel Turf-Truckster rated at 2,600 lbs.

Gettysburg grounds: a battle on many fronts

By JIM GUYETTE & TERRY
McIVER/Contributing Editors

The preservation, restoration and maintenance of Pennsylvania's Gettysburg National Military Park present an epic battle for groundskeeping foreman Danny Greever and his staff. In addition to more traditional landscape-oriented duties, they take care of more than 1,400 statues, plaques and other memorials at the historic 6,000-acre site.

"We have the premier collection of outdoor sculpture in the United States here at Gettysburg," says Greever, noting that the ensemble is valued at more than \$300 million.

Managing the Gettysburg grounds is a monumental task in other ways, too: They have to "get the lead out," dodge crowds and cope with the Virginia Worm—all the

while keeping a constant lookout for buried treasure. "We have problems here that other landscapers don't," Greever observes. "We have such a high visitation; a million and a half people walk through this area every year."

Cannons, old buttons and the "Worm"

As for the Virginia Worm, it's not an exotic new pest, but rather a type of historic split-rail fencing set in a zig-zag pattern that makes up a portion of the various old time fencing styles requiring constant repair: By the time the crews make a fence repair route through the park it's time to start over again.

The lead to be removed involves the cannons. "We have 385 pieces of artillery on the field, and unfortunately, all 385 pieces have lead paint on them, and we have to remediate that," Greever explains. This ongoing restoration process has run up bills of \$1,050 for each of the 43 weapons done so far, and the efforts can

require welding and other individual touches to keep these artifacts in 1863 battle condition.

Bullets, buttons and other bits of battlefield remnants still lie just beneath the ground's surface. Thus, every task ranging from stump grinding to trimming, pruning and mowing must be plotted and planned with the primary aim of archaeological preservation. Bruce Craig, a preservation officer, has recently been brought on board to assist in these efforts.

Over the years, much work has been done to preserve the general look of the battlefield areas, but a massive plan is being developed by the park to further restore the site to its actual 1863 appearance:

- Modern day museum buildings and latter-day farm structures are to be moved or demolished, 576 acres of woodlands will be cut down and 115 acres of new woods are to be added.

- Some 40 miles of new old-style fencing are being installed, and 65 acres of planted thickets will be maintained at their 1863 height. The thickets were in the thick of the battle. "This was difficult for the soldiers to move through," notes the park's Katie Lawhon, who adds that 278 acres of woodlands are now to be managed as woodlots. Farmers back then had grazing animals that kept these wooded parcels picked clean of undergrowth—thus giving this element a role in the battle's outcome. "The soldiers were able to move through the woodlots, and they were able to see through them," Lawhon reports.

- Farm forage fields and peach production efforts were also involved in the historic onslaught, as throughout the three-

Danny Greever, groundskeeping foreman says the lead-based paint on the cannons is being removed, one cannon at a time.





◀ The monuments, walkways, roads, skirmish sites and trails all require high maintenance caused by thousands of visitors each year.

▼ Many trees and shrubs on Little Round Top were devastated during the battle.

day battle, soldiers ran all over the place. Today, 160 acres of orchards are to be planted—in addition to the many crop fields currently maintained on a permit basis by local farmers adhering to 1863 agricultural specifications. The farmers pay the government a fee to farm the land and they get to keep the harvests. “That helps us because we don’t have to go in there and mow them,” says Greever.

The Gettysburg park is an American institution in a number of ways, both in regard to the event itself and within a greater context: The Civil War has always held a great attraction to many Americans. In addition to magnifying the political issues of the day, the conflict was a turning point in the conduct of warfare worldwide.

Located 50 miles northwest of Baltimore, the small town of Gettysburg was the site of the largest battle ever waged in the Western Hemisphere, by its end involving 160,000 Americans. The Battle of Gettysburg commenced on a beastly hot July 1, and ceased two days later with the climactic “Pickett’s Charge.” It resulted in a Union victory for the Army of the Potomac, which turned back an invasion of the North by Gen. Robert E. Lee’s Army of Northern Virginia.

During the famed “Pickett’s Charge” at Gettysburg, the troops in gray lined up in a mile-wide formation to silently march across a wheat field towards an entrenched Union force. As the Southerners got within range, Union cannons using grapeshot (a



shell containing iron balls that blew apart when fired) opened fire, as deadly accurate rifle volleys blasted into the line.

They went no further north

“The high-water mark of the Confederacy occurred right here,” Greever points out. “That’s as far North as they got: Pickett’s Charge.” Confederate casualties in dead, wounded, captured or missing were 28,000 out of 75,000 troops on the scene, while Union casualties were 23,000 out of 88,000 soldiers, making it the bloodiest battle of the Civil War.

Volumes thicker than big-city telephone books have been written about the ensuing three days of high-caliber combat, but perhaps the battle is best known for what occurred in its aftermath on a brisk sunny day that following November:

The President of the United States was invited to make “a few appropriate remarks” to commemorate the official dedi-

cation of the 17-acre “Soldier’s Cemetery,” which had earlier been hurriedly designed by landscape architect William Saunders. (It had to be done quickly because rainfall immediately following the battle created a sea of bloated bodies; however, Saunders’ master plan is still adhered to by Greever and other park personnel.) Abraham Lincoln spoke for just over two minutes in a speech that became honored as among the most extraordinary ever uttered in American history.

Maintaining a national shrine

Danny Greever has spent his entire 30-year career tending to the Soldier’s Cemetery and the surrounding battlefields. “I started here five days after I graduated from high school,” he recalls, musing that in those days few young people were attracted to working for the National Park Service — unlike today where these positions are in high demand.

At Gettysburg it's very much a team effort in making sure that the grounds are properly cared for. Duties intertwine as the staff steps up to maintain battle-related areas such as hills, ridges, fences, roads, lanes, open fields, forests, buildings, high points, stone walls, earthworks, battle artifacts, monuments, vegetation and other aspects of the park.

Greever must keep 26 miles of park roads clear of snow in the winter, along with keeping the many walkways passable. Cabs and plows are attached to John Deere tractors, and snowblowers are put to work. "For the roads, we use road salt mixed with antiskid material—which is stone from a quarry. For the walks, we use calcium chloride," he notes.

During the Great Blizzard of 1993, front end loaders from Valley Quarries were brought in for \$1,000 a day and spot-terers were used to avoid hitting hidden monuments.

Each year, nearly 5,000 horse and rider teams travel over the park's bridle trails, and Greever quips that "that's an area that has its own problems with the amount of horses that go through." Aside from the sweeping tasks that follow horses wherever they go, the maintenance team fights compaction and hoof-induced erosion with geotextile materials and a trail mix brought in from Thomasville, PA, which creates a horse-friendly surface.

Mowing assignments for the bluegrass and fescue grasses throughout the park are carried out on a pattern basis, with a specific crew assigned exclusively to the Soldier's Cemetery. "We mow the cemetery twice a week and we trim it once a week," Greever explains. Three Hustler zero-turn radius mowers are on the job here. "The Hustlers go between all the stones," Greever says.

Smaller mowers are used for severe slopes and other hard-to-reach spots.

"In the rest of the park we have two guys using John Deere tractors with Woods rotary mowers, and we have a four-man trimmer crew that follows them."

Greever points out that "it takes 10 days to make one complete lap of the park, and at the end of those 10 days it's time to start over."

Stihl backpack trimmers are the weapon of choice at Gettysburg. "They're just great," Greever opines, lamenting that the company is discontinuing this model. Ever proactive, Greever recalls that when the Stihl news hit, "I spent two days on the phone" trying to track down more.

We found out that there are 11 of them left in the country—and I had some money, so I bought six of the 11."

Battle site problems

Certain areas of the park have specialized programs, such as the breastworks that continually fascinate the visitors. Using limbs, logs and dirt, these were snaking mounds frantically constructed by troops seeking cover from the flying lead.

Nowadays, Greever tries to discourage tourists from climbing on the unique artifacts. "These are historic—they were part of the battle—so we just let the grass grow on them, and once a year we go in and trim them. We try to trim the grass a foot high just to keep people off them."

Erosion brought about by the tremendous foot traffic is always a struggle, particularly on the turf areas surrounding monuments. "They (tourists) walk up to read the monument," says Greever, and as a result, blotches of dirt are created in the landscape. The team tried a sheeted bio-ring product in an effort to promote turf growth, but the pressure of all those shoes is just too much for any shoots to take hold.

Not surprisingly, the many species of trees at the park receive top priority treatment. A grove known as "the clump of trees" was a major strategic element of the battle, and arborists are still debating whether these standing specimens are off-spring or actual elderly survivors from the conflict. Other trees are those specified by landscape architect William Saunders in his November 1863 plan. Diseases and



▲ The huge number of people walking up to the monuments wears down the turf.

► The monument for the 86th New York Infantry gets a good cleaning with water.

pests such as the Gypsy moth have wreaked havoc (they took down 1,000 trees 12 years ago), and "right now we're having a real problem with the ash trees in the park," says Greever. "There's an anthracnose that's killing them off."

Keeping the trees properly trimmed is an ongoing program, especially in the "Class A" areas most frequented by tourists. It is important that protect visitors from an errant limb or branch. "We do pruning on a regular basis because we have

so much foot traffic in here." Some of the park's tree care is done on a contract-bid basis by Pennington Tree Service of Gettysburg.

Lightning rods are an electric issue at the park. "Being up on a hill here, we have a lot of lightening strikes when we have thunder storms," Greever reveals. The tree-based lightning rod system was re-

Much work has been done to preserve the look of battlefield areas, but a massive plan is being developed to restore the site to its 1863 appearance.

cently upgraded with assistance from Pennington and the Massachusetts-based Olmsted Center for Landscape Preservation.

Monumental upkeep

Greever has long been involved in keeping the many monuments in top gazing shape, although recently, Vic Gavin has been brought on board to oversee this aspect of the groundskeeping.

The bronze figures are sandblasted to keep the finish in acceptable form. "I use the word sandblasting, but it's not actually sandblasting," Greever notes. "We actually blast them with ground walnut shells." The walnut-spitting equipment is designed for cleaning the insides of jet engines, yet it performs a monumental job in removing corrosion, dirt and traces of a previous wax coating. The bronze is then heated and a beeswax-based material is applied to the metal before it cools. The team takes care not to overheat the bronze or apply too much wax. Once the wax is applied, the excess is removed and the finish hand rubbed. The protective coating will protect the bronze and help repel acids which are prevalent in rain and vehicle exhaust fumes.

The preservation and restoration of the entire Gettysburg National Military Park is an effort that is continually under review. Some of the latest fronts being planned are a comprehensive inventory of all the plant materials and a mapping program based on satellite technology. And Danny Greever continues to apply his considerable skills toward keeping the wide-ranging living memorial in tip-top shape on behalf of the American people: "This is a *special* place," he explains. **LM**



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Century Rain Aid now offers repair and upgrade service for golf course irrigation control systems with a 48-hour turnaround through an agreement with BoardTronics Inc. Available for all Rain Bird and Toro golf control systems call (888) 855-9132 for more information.

E-Z-GO Textron has become the first golf car and utility vehicle company to receive International Standardization Organization (ISO) 9001 registration. The final audit, conducted in August, subjected the company's operations to a rigorous 20-element inspection.

Fiberstars, manufacturer of fiber optic lighting systems, has four new sales representative organizations for territories in southeastern U.S.: CK Lighting in northeastern Fla. and southeastern Ga.; Elder and Associates Inc. in central and southeastern S.C.; Palmetto Lighting in northwestern S.C.; and TEAM which has four divisions throughout N.C. www.fiberstars.com

The Gold Ink awards nominating committee has announced the honoring of **Lofts Seed's** Palmer's Pride line as among the best printing in North America for 1998. The award is open to all producers and creators of printed materials such as: advertising agencies, catalog publishers and public relations firms.

Lumiere Design and Manufacturing of CA was a winner at the 1998 Lightfair. The Hollywood 1701 metal halide imaging projector won the Design Excellence Award and the

Outdoor Lighting Innovator award as well as the Design Journal Adex Award for outdoor lighting. www.lumiere-design.com

Nature Safe Natural & Organic Fertilizers continues to expand its distributor network with Agri-Business technologies in Ga. and S.C.; Atech in N.C.; Benham/Turf Partners in Mich.; Harrell's Fertilizer in Ala. and Fla.; Nivek in NC; Tee Shot Marketing in northern Minn.; and Wilbur Ellis Co. in southern Minn. www.naturesafe.com

Rain Bird sponsored a leadership program for 40 high school students from across the country this past summer. The students, who were nominated by their school principals, were part of the 'Step Up To Leadership' program which teaches creative ways to improve leadership, communication and goal-setting skills.

Vince Newendorp has been named **Vermeer's** General

Manager of the Environmental Division where he will oversee all business functions including engineering, manufacturing and parts. www.vermeer.com

Weather-Matic Landscape and Turf Irrigation has hired Kevin Colesworthy as Southwest Regional Sales Manager, to work with distributors to develop and maintain beneficial relationships with professional irrigation contractors and designers. John Garrison and Chris Lallier are additions to the Purely Professional Source sales team. Garrison's territory will be the Great Lakes region. Lallier's territory covers the south central region which includes south Texas and La. www.weathermatic.com

West Ag Irrigation, Calif., has made two recent changes. The name of the company is now Storm Irrigation, a change that coincides with its recent acquisition of certain assets of Imperial Underground Sprinkler Company, Kan. The manufacturing of electromechanical controllers, brass and plastic control valves and sprinklers will be moved to Calif.

Norm Whitworth, president of **Whitworth Turf Products, Ltd.**, was honored for 25 years as a distributor of **Turf-Seed, Inc.** Whitworth Turf Products was one of the first distributors for Turf-Seed, when it was founded in 1970. Whitworth is a member of the Northwest Turfgrass Association, Western Washington Golf Course Superintendents Association and the Oregon Golf Course Superintendents Association.

Info center

VIDEOS AND LITERATURE FOR THE GREEN INDUSTRY

Instant turf answers on the web... Turfgrass Producers International (TPI) and the Turf Resource Center offer professionals and consumers information of turfgrass. The site is divided into two components, one offering information about turfgrass selection, establishment, maintenance and environmental concerns and the other featuring information about TPI as a world-wide, not-for-profit association for turfgrass producers. Check out the site at www.TurfgrassSod.com

Turfgrass Research Report... from the Ohio Agricultural Research and Development Center and Ohio State University Extension is a 164-page book with the results of 50 research projects on landscape, golf and sports turf. Topics include disease, insect and weed control, fertility, species, culture and management. The report is free from SCT, OARDC, 1680 Madison Ave., Wooster, Ohio 44691 or call (330) 263-3775 or email ct-oardc@osu.edu

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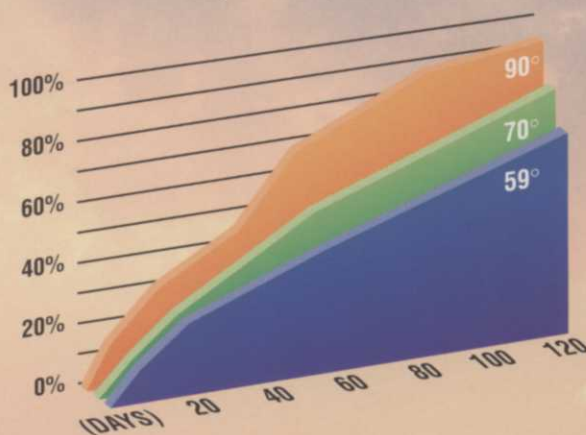
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GOLF

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Pasatiempo's glory restore

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Precision turf management is here

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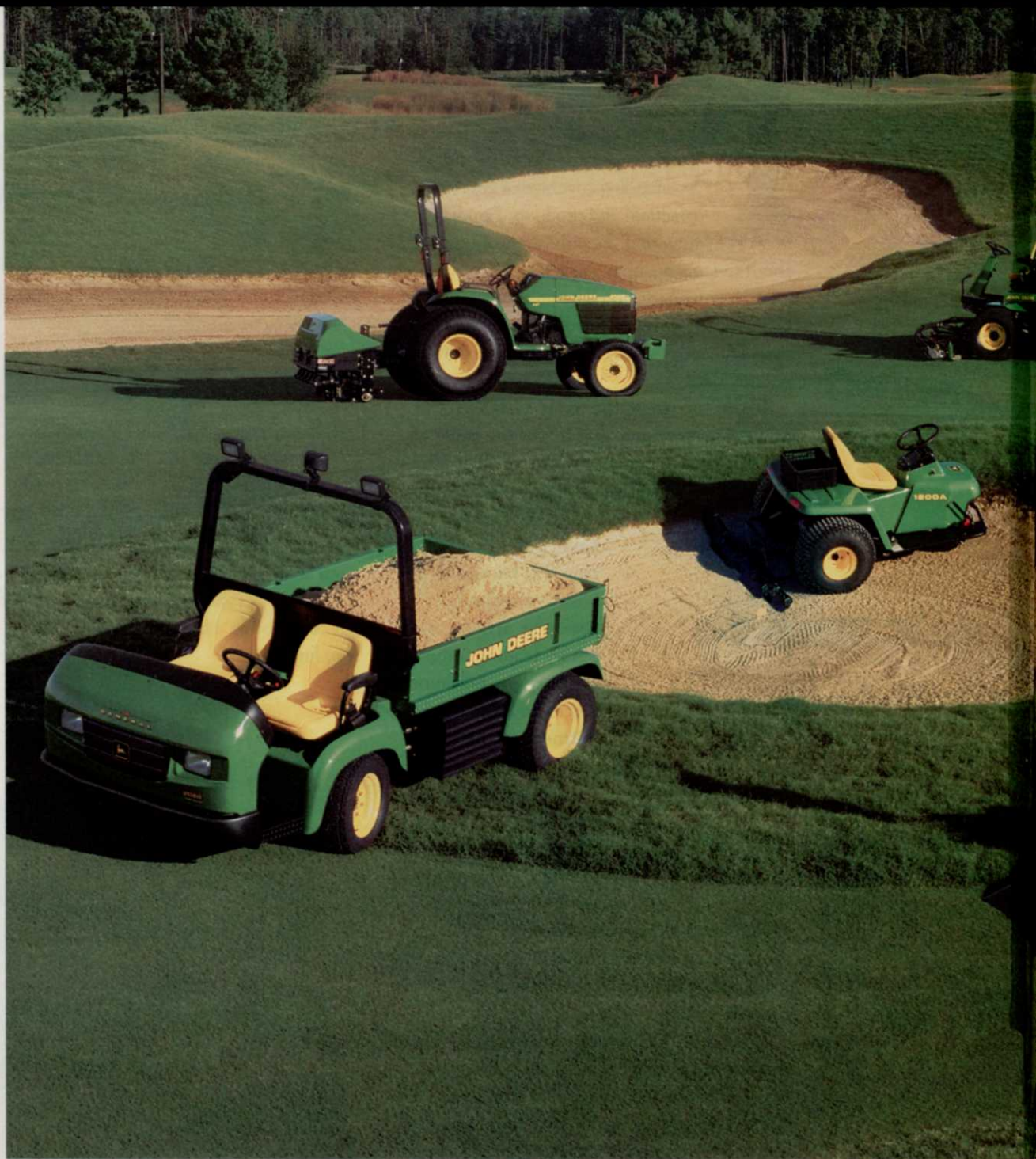
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Restoring Pasatiempo's glory

Superintendent Dean Gump is working on a plan to restore the rich heritage of this MacKenzie-designed golf course on Monterey Bay.

By BRIDGET FALBO



Superintendent Dean Gump must schedule restorative work as well as maintenance for Pasatiempo that, if conditions allow, can be open 365 days a year.

The legendary Alister MacKenzie designed a golf course in the Santa Cruz Mountains on Monterey Bay in California. Golf greats Bobby Jones, Ben Hogan and Babe Didrickson played here. So did celebrities like Ty Cobb, Jack Dempsey and Bing Crosby. Built in 1929, Pasatiempo has hosted its share of prestigious tournaments too, like the 1986 U. S. Women's Amateur Championship.

With that kind of heritage, no wonder Superintendent Dean Gump feels like he's got his work cut out for him. Not only must he maintain the course

in excellent playing condition in spite of about 55,000 rounds annually, but he's committed to preserving and, in some cases, restoring its rich history.

He's restoring the bunkers on certain holes to their original design. He and architect Tom Doak are looking back over old photographs to reference their efforts. Luckily, many pictures exist of the early years of the course.

Pasatiempo is a long, narrow course built on 90 acres of rolling hills with eye-catching views of the Monterey Bay. Because it's so heavily bunkered, players must approach each hole with a plan. Oak and Monterey pine separate the undulating fairways with the 395-yard 16th hole recognized as designer MacKenzie's favorite par four hole in spite (or maybe because of) its blind drive from the tee.

In describing the narrowness of the fairways, Gump says a course would never be built like this these days because of safety issues. Although not envisioned in the original design, the tree placement helps protect players from errant golf balls crossing into the next fairway. Gump must meet a fine line of trimming, thinning and planting so the trees do not overshadow and block the fairways, but offer protection and beauty for the golfers.

The goal of the renovation project is to restore the course as closely as possible to Alister MacKenzie's original design. But that's not going to be easy. While the polite description of Pasatiempo would be "old, classic course," it's in constant need of lots of tender loving maintenance.

"With a course of this age we're to the point of the whole infrastructure starting to break down," says Gump. "With an older golf course, you've got a lot of deterioration going on. For instance, the cart paths are deteriorating and old drains that have been there for years are failing."

Some major improvements have helped the course cope. For instance, 1989 saw the installation of an irrigation system. More recently, it has been computerized. This was a big step in improving the course, says Gump. It greatly improved the course's

water management and substantially cut the course's water bill.

Gump is working with architect Doak on a master restoration that will include cart path improvements, more tree removal to open up fairways and greens, and bunkering improvements.

Because the bunkers have changed dramatically in the last 60 years, both in size and shape, renovating them is an ongoing project. Gump recently finished restoring bunkers on the 12th and 13th greens. The next challenge is to rebuild the first tee and restore the bunkers on Holes 1 and 9.

"It takes a lot of hand work," says Gump. The restoration requires ripping up and then relaying sod after the shaper is done, upgrading the drainage and filling the newly positioned bunker with sand.

Too much water

Since it is an old course, Gump says one of the main challenges is drainage. The climate of this coastal region provides a long, dry summer, but a very rainy winter season. On average, the course receives 40 inches of rain per year, but in this past year of the El Niño it received 70 inches.

To improve drainage, for the past nine years Gump has been constructing sand channel drainage systems on tees and greens, and is now turning to the fairways. The system consists of a series of nine-inch deep, one-inch wide sand columns in a grid system 24 inches apart. Placed under the sand columns is a high-flow, one-inch drain pipe with slits which captures the water from the sand grid system and carry it away. After a winter deluge, the drainage system pulls the extra water out of the soil and helps the course dry faster.

To handle surface and subsurface water, Gump has installed long curtain drains in low-lying fairways. These drains reach five feet below the surface to intercept the ground water that runs off the hillsides and otherwise would surface on the fairways.

Keeping turf fit

The alternating dry summers and rainy winters stress turf grasses and superintendents who are trying to keep a course open 365 days a year, including Christmas. To keep the greens in top performance, Gump says they've changed their philosophy of fertilizing. Instead of spraying all soluble fertilizer, they now incorporate fertilizer with more of an organic



base with a diminished soluble spray schedule. Once a month the crew applies Nature Safe, an organic fertilizer with 1/2 lb of N per 1,000 sq. ft., supplementing with light applications of Griggs Brothers soluble spray-on fertilizer.

Since the greens are basically 100 percent annual blue grass, which is susceptible to fungus problems, Gump applies preventive broad-spectrum fungicides throughout the summer for summer patch and other diseases, rotating Heritage, Banner Maxx and Rubigan, with applications every 30 days. He also treats the turf with two applications of Scotts FF2 during the winter to prevent pink snow mold.

Return of the native

The past five years have seen another change in philosophy of managing this course in regards to plantings on hillsides and landscape borders. Taking a cue from California landscape designers and environmentalists, Gump and course landscape manager Francine Moody have replaced high maintenance annuals with California native plants in borders, on slopes and around creek beds.

"Annuals are high maintenance, expensive and water-loving," says Moody. "We plant more perennials and evergreens and find we actually have more diversity which lasts year round." When choosing plants, Moody pays attention to plants that would be good for wildlife, something that would produce shelter, nectar or berries.

If treated right the first two years (for example,

Overlooking the undulating first hole, Monterey Bay can be seen in the background.



not giving them too much water) the plants establish themselves very well, says Moody. As she plants a perennial plant like coffee berry, manzanita or ceanothus, she inserts a fertilizer tab in the ground beside the plant to help get it started in its new home. Care after that consists of fertilizing once or twice a year. Native plants are drought tolerant, and require less watering.

On hillsides which have erosion prob-

lems, Moody has been replacing introduced species with ornamental grasses and evergreens. "We try to get away from one solid ground cover," says Moody. "When everything is rooted at the same depth like ice plant, it gets wet in hard rains and pulls and caves- in the slope."

People are a plus

Moody shares a long employment history (over 20 years) at the course with

The bunkered green for the acclaimed 16th hole, which cannot be seen from the tee, was considered by designer Alister MacKenzie to be one of his favorite holes

many other employees. The golf course employs 18 people, with over a third of them working there longer than Superintendent Gump, who joined the course in 1981. Both the mechanic, Ramone Artegea, and Gump's assistant, Juan Artegea, have been at the course for 27 years. "There's a lot of benefits working with a great crew that has a good working background knowledge of the golf course," says Gump. Since the course is open all year, he lays off only one or two people when play slows a bit in the winter season. The course is open to the public 90% of the time and is owned by a corporation made up of 377 stockholders. □

Bridget Falbo is a freelance writer in Minneapolis who covers the green industry.

MacKenzie, a remarkable 'doctor'

Dr. Alister MacKenzie was born in 1870 in Yorkshire, England, and died in 1934 in Santa Cruz, Calif., not far from Pasatiempo Golf Course, one of the last courses he designed. Measured by any standard, he was a remarkable man. MacKenzie studied chemistry, medicine and natural science at Cambridge University and built a promising medical career in England but abandoned it in 1918 to design golf courses. This he did with great success all over the world. Among his greatest achievements are Cypress Point, Royal Melbourne and, of course, Augusta National. His "13 general principles of architecture" are still used by top golf course architects.



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Precision turf management is here!

Researchers at Michigan State University say new diagnostic and monitoring tools will help turfgrass managers match programs to specific sites.

By RON HALL/ Managing Editor

The concept of "precision turf management" has been around for many years, but technology has not been in place to make it a widespread reality. New monitoring and diagnostic tools being embraced by agriculturists but adaptable to turf promise to make precision turf management a growing part of the vocabulary of turfgrass managers.

This is significant to turfgrass managers at large sites such as campuses or golf courses because conditions are not the same at each particular area within that site. Conditions, in fact, can vary greatly across a site.

Localized problems

Problems such as drought stress, pests, disease, fertility, compaction and drainage are often site-specific rather than uniformly expressed over a management area. While current practices often treat such problems "wall to

wall," the spotty nature of management problems raises questions as to how these varying conditions can or should affect turf management practices.

Surprising variability

To illustrate this point at the Michigan Turfgrass Field Day in late August, Dr. Paul Rieke pulled soil/turf plugs from several different sections of the Robert W. Hancock Turfgrass Research Center at Michigan State University. The plugs, even from sites relatively close together, varied dramatically from a high organic soil (almost a muck)

to a compacted subsoil.

These wide differences probably aren't unusual. MSU turf students earlier this year visited a golf course near their campus and took soil samples of a single golf hole.

What they discovered was pretty dramatic. They charted clay contents ranging from 5 to 30 percent, organic matter ranges from 2 to 9 percent, and water content and field capacity ranges from 12 to 26 percent. Tests for potassium revealed ranges from 137 to 380 lbs.

K per acre, and phosphorus from 27 to 260-plus lbs. P per acre—all on a single hole!



Turf and soil conditions often vary widely, even on a single golf course, explained Dr. Paul Rieke.



Dr. Fran Pierce said technology is available for turfgrass pros "to manage anything, anywhere."

"Is there variability out there?" Rieke asked rhetorically. "Of course there is. The question is, when we have variability what do we do with it?"

Tools will help

Traditionally, said Rieke, turfgrass managers rely on visual inspections and their memory of conditions to manage widely varying conditions under their care. However, this will change as turfgrass managers learn about and begin using more precise diagnostic tools.

"With the technology that we're using in agriculture today we can manage anything anywhere," added Dr. Fran Pierce, also at the Michigan Field Day. "The integration of a number of technologies is making this possible. We can assess and manage variability at levels of detail never before attainable and, if done correctly, at levels of quality never before achieved."

Pierce is a national authority on site-specific precision management in agriculture. He's working with Rieke and Dr. James H. Baird at MSU, to bring some of this knowledge to turf. □

New management technologies

► **Computers.** "The hardware is way ahead of us, but the software is a little bit behind right now," said Dr. Fran Pierce. Several companies are working on developing hardware and software to help turf managers adapt precision turf management, he added.

► **Global positioning systems (GPS)** to measure location. "If I'm going to measure variability I have to know where I am all the time and where I took the sample or found the problem," he explained. Using GPS technology, turfgrass managers can pinpoint a location within one meter very inexpensively, and down to a millimeter if they can afford it.

► **Geographic information systems (GIS),** which Pierce described as "powerful spatial data analyzers.

► **Ground-based sensors.**

► **Aerial infrared imaging.** Pierce showed infrared images of the sprawling MSU turf research site. Some of the areas showed up green (healthy, growing), some yellow (turf under stress) and some blue (bare). "We can tell a lot about the condition of the turfgrass remotely," said Pierce.

Does an entire fairway need the same aeration or fertilization? Or does the entire green need the same topdressing or grooming program? Oftentimes the answer is no.

Precision turf management involves the precise application of turf management practices to localized soil and turf conditions. While many superintendents practice this now, they'll get increasing help from the growing number of tools that will allow them to assess and manage site specific areas.

Deere buys Player Systems; boosts 'precision' turf idea

John Deere boosted the concept of "Precision Turf Care" by acquiring Player Systems, the manufacturer of SkyLinks, a golf course management technology that uses the Global Positioning System (GPS). Deere made the announcement in late September.

Player System's technology was created four years ago and relies on GPS, a government network of satellites orbiting the earth. Player Systems is composed of two major components: Precision Turf Care and SkyLinks.

By combining its recently acquired GPS capability with personal computers, Deere is developing sprayer systems that apply precise amounts of control products at specific, preprogrammed sites.

Pin-pointing treatments where they're needed

"The accuracy of GPS can be leveraged into precision turf management," Shawn Phillips, Player Systems general manager, tells LANDSCAPE MANAGEMENT. "The great application of that would be precision spraying where a superintendent would go in and write a prescription for the course, or a certain area of the course.

"The superintendent knows where the traditional trouble areas have been, or where he has had troubles and where they show up first; for instance grubs,"

Phillips adds. "So, when the superintendent sees signs of grubs, instead of having to communicate this to everyone who operates a sprayer, he tells his computer to 'talk' to the sprayer, the very next time it goes out, to spray for grubs at those sites. The equipment does it on location."

Phillips says the technology will give superintendents more control and responsibility over their spraying programs. It will also allow them to more accurately track and record chemical product use.

Deere taking one step at a time

Phillips tells LM that Deere is carefully approaching precision turf technology. "We're taking a look at the existing machine population and adapting it

to the new technology," he explains. Most of this new technology centers around the sprayer control modules.

In addition to precision turf care, the Players Systems' SkyLinks should benefit golfers and, also, golf course managers. For instance, a SkyLinks mounted on a golf cart acts as an electronic caddy, conveying information about specific holes, including yardage and playing tips. It can also be used to send messages from clubhouse to cart and vice versa.

SkyLinks will retain its brand name but will fall under the umbrella of the John Deere Commercial and Consumer Equipment Division.

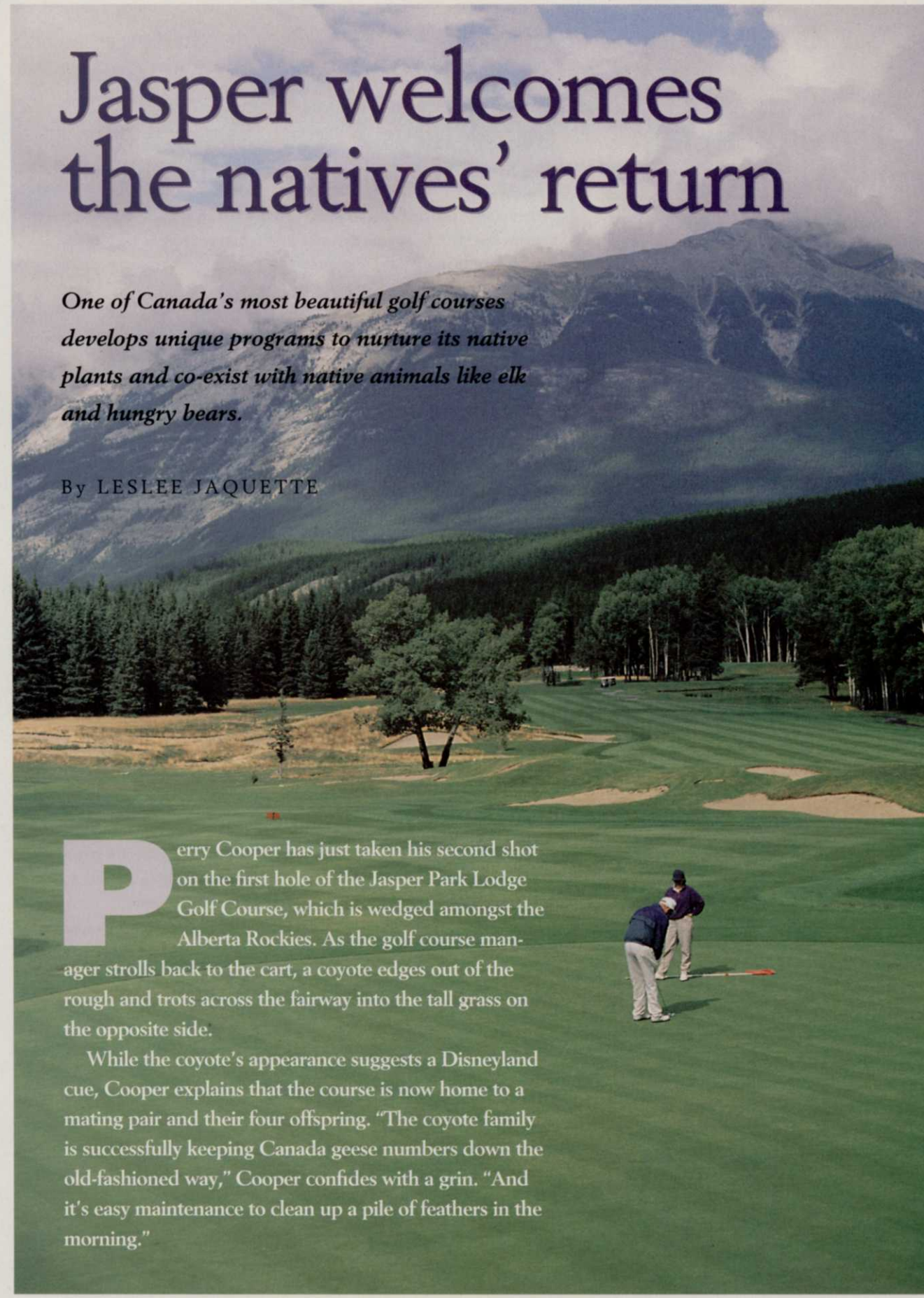
Precision turf management steps

1. Assess variability. Sample grid or zone. Use sensors.
2. Manage variability. Make site-specific recommendations. Control application.
3. Evaluate control. Map performance. Do site-specific research.

Jasper welcomes the natives' return

One of Canada's most beautiful golf courses develops unique programs to nurture its native plants and co-exist with native animals like elk and hungry bears.

By LESLEE JAQUETTE



Perry Cooper has just taken his second shot on the first hole of the Jasper Park Lodge Golf Course, which is wedged amongst the Alberta Rockies. As the golf course manager strolls back to the cart, a coyote edges out of the rough and trots across the fairway into the tall grass on the opposite side.

While the coyote's appearance suggests a Disneyland cue, Cooper explains that the course is now home to a mating pair and their four offspring. "The coyote family is successfully keeping Canada geese numbers down the old-fashioned way," Cooper confides with a grin. "And it's easy maintenance to clean up a pile of feathers in the morning."

Given that the 903-acre Canadian Pacific heritage property rests amidst Canada's Jasper National Park, Cooper says maintenance of the 18-hole, 1925-built course revolves around the restoration of both native plants and animals. Throughout the last decade, the 40-person crew has made tremendous efforts to meet Parks Canada's mandate to maintain an ecological integrity that calls for a reintroduction of native plants as well as minimal animal control.

The Canadian golf publication, *Score*, recently rewarded Cooper and crew's efforts by naming the Jasper Park Lodge Golf Course Canada's top golf resort. It was designed by Stanley Thompson. Accolades aside, Cooper says since taking over the manager's position in 1987, the most dramatic changes on the course focus on eliminating nonnative plants. For example, a decade ago the landscapers grew 110 varieties of nonindigenous plants and flowers in greenhouses to populate some 30 gardens.

Not so tasty natives

After years of watching the moose and elk learn to eat every variety, they were reduced to only marigolds and geraniums. "Now snapdragons are the only plant they won't yank out of the earth and spit back out, leaving big, ugly holes," says Cooper.



The coyote: a natural method for controlling the Canada geese population on the course.

Throughout the restoration of 20 tee boxes since 1993, the JPL crew has replanted using only natural materials such as wild roses and a native shrub, golddrop potentilla, in combination with snapdragons. Most of these planters use a maintenance-free ground cover of beautiful, black, lodgepole pine cones. Cooper buys the pine cones from Smoky

Lake Tree Nursery near Edmonton, Alberta.

Along a similar vein, Cooper says his biggest headache is keeping colorful planters high enough to keep away from the dozens of elk that roam freely about the property. Again, trial and error has taught the crew that superpetunias are the only flowers that thrive under the semi-arid conditions (16 inches of rain annually), producing perpetual color with little fuss. Cooper says the superpetunias are worth the extra cost due to their "low" maintenance. "Blossoms last longer than regular petunias, they are thick and lush and the old blooms blow off clean."

Get rid of the pit

Another long-term "back to nature" project Cooper has been working on entails filling in an ancient borrow pit that has been an eyesore since the course opened. The pit serves as a terrible scar and as a breeding ground for all sorts of nonnative plants such as toad flax. Cooper regrets that due to a development freeze in Jasper, it will take at least three years to back fill with clean material, grade and plant. Fortunately, Forestry Canada staff contributed 400 native tree plugs for the site, including buffalo berry, poplar, aspen, fir, spruce and lodgepole pine.

While several areas of restored native grasses have encroached too far onto the fairway, slowed down play and have since been pushed back, Cooper supports a return to plants that belong in the region: "We are constantly evaluating what works and what looks good."

One of the biggest improvements to the dramatic course in the past decade, says Cooper, re-



Perry Cooper, golf course manager, contends with multiple users—golfers, coyotes, elk, Canada geese and ground squirrels. It can get rather busy.



Canada geese make themselves at home.

mains promoting the *Poa annua* on the greens. After decades of watching from 50 to 100 percent of the greens die after every harsh Alberta winter, Cooper and colleagues put solid tarps over the greens. These tarps act as greenhouses heating to 90° F. temperatures that force the *Poa* to germinate.

The "back to nature" mandate creates even more demanding challenges when applied to critters. Cooper, who is obviously very fond of his family of coyotes, says he welcomes their hunting of elk and smaller mammals.

The crew keeps an eye on both an old black bear and an all-too-friendly moose. The bear thrives on buffalo berries and roams the perimeter of the course. Formerly, the crew used milorganite to fer-

tilize greens until it became apparent that the application appealed to the bears' sensitive noses; the scent of sewage sludge causing the bears to dig holes.

Protecting the animals

A major problem is protecting the bear from visitors. Recently, the bear wandered out on hole number 12 to be greeted by awestruck Korean and Japanese golfers. Soon four parties were waiting for the bear to amble on. The problem escalated, Cooper reports, when just two holes later, the same golfers followed the bear into the woods to take pictures. He laments that folks fail to understand that a black bear weighs 500 pounds and runs up to 45 mph. The moose is also a problem because he lets people get close for photos.

Another critter issue revolves around fir beetles. Cooper notes that these, too, are protected by park mandate and cannot simply be eradicated. While the fir beetles represent a big threat to some of the fairways' 300-year-old trees, the beetles are food for several species of birds. "Our only option is to keep the trees as healthy as possible so they can survive an infestation," says Cooper, who notes that some of the big firs survived a fire 100 years ago. "We do that by injecting a slow-release liquid fertilizer into the ground and minimizing foot traffic around tree roots."

Finally, the crew at JPL is proud of how they relocated a growing colony of Richardson's ground squirrels. Cooper notes that the rodents had increased to a critical mass, drilling holes everywhere and creating nasty ankle-turners. Outside national parks, products such as strychnine-laced Gopher Cop would be used to eradicate the hole diggers. In a national park, using poison is illegal.

Cooper's crew baited live traps with little individual peanut butter containers--the kind found in restaurants. This method worked so well that the crew trapped 57 squirrels in one week. The rodents were relocated to the site of an abandoned colony about 12 miles distant. "Fortunately," says Cooper with a laugh, "it will be pretty tough for them to return from across the Athabasca River." □

Leslee Jaquette is a freelance writer in Washington State who frequently covers the green industry.

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Fumigation **A****B****C**s

Soil prep and conditions within the soil will determine how successfully you get rid of undesirable weeds, grasses, nematodes and insect pests with fumigation.

BY T. J. SWAFORD

Fumigation is one of the tools in a superintendent's arsenal to eliminate competition in the turfgrass from weeds, weed seed, nematodes, disease, pests and any undesirable grasses.

Fumigation is generally labor-intensive but, in some cases, it may be the only way to control some weeds such as torpedo-grass or bermudagrass, or to be certain that contaminants have been cleared from a renovation location.



The ideal fumigant should provide effective control of the problem, have rapid toxic action, be low cost and easy to apply, and be effective to a depth of six to eight inches. With all of these attributes, it

Tractor-applied methyl bromide will prepare this fairway for sprigging of bermudagrass.

should also dissipate relatively quickly so the fumigated area can be regrassed.

Methyl bromide is a commonly used fumigant. Because it's a restricted use pesticide, it must be applied by experienced and licensed personnel. It will kill almost all organisms it contacts, although dosage varies according to target organisms.

When to fumigate

Fumigation is most effective when the soil temperature at the 2- to 4-inch depth is above 60°F. Soil temperatures must be within the range specified on the fumigant label as fumigants vaporize poorly and move slowly in cold soils, while evaporating too quickly from hot soils.

Soil texture can affect how well a fumigant can spread. The fumigant diffuses more rapidly in a loose, open-pored soil than a heavy or compacted soil. Soil moisture is also important. Fumigants will not diffuse

Methyl bromide faces phaseout

A year-old U.S. House proposal to delay the phaseout of methyl bromide has, so far, attracted 75 legislative cosponsors.

Methyl bromide is scheduled to be banned from use in the United States in less than three years. Reps. Dan Miller (R-Fla.) and Gary Condit (D-Calif.) in Oct. 1997 introduced H.R. 2609. If passed, it would delay the phaseout of the fumigant widely used in agriculture, structural pest control and turf.

In 1992, the Montreal Protocol listed methyl bromide as an ozone-depleting substance, causing Congress to apply provisions of the Clean Air Act to the chemical and forcing its early phaseout in the U.S. While use of the chemical in the United States is scheduled to end in 2001, other developed nations are not due for a full ban until 2005, and developing nations not until 2015.

H.R. 2609 would delay the phaseout of methyl bromide until all parties of the Montreal Protocol have agreed to and enacted a phaseout. Should a reasonable alternative to the chemical be found before the ban is implemented, then the U.S. EPA may begin again to phase out the chemical, regardless of the Montreal Protocol schedule.

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Alternatives seeking niches

Several chemistries developed decades ago are gaining renewed interest as turf fumigants.

Basamid® Granular Soil Fumigant, manufactured by BASF, is one such product. BASF describes it as an "alternative to liquid and gas fumigants." Basamid (active ingredient, dazomet) is applied with a drop spreader, but like other fumigants it must be applied under certain conditions to be effective.

For instance, the soil must be in seedbed condition and free of clods to a depth of 6 inches. The soil must also be above 50° F for seven days, the duration of the treatment. During this time the soil must be watered (follow specific label directions) daily to activate the product. Rolling and watering will also "seal" the treatment.

BASF claims that Basamid can streamline greens building when it's properly incorporated into the soil blending process prior to greens construction.

Telone II is a product that was used on thousands of acres of golf courses in South Carolina in the early 1980s, withdrawn from the market for additional testing and is returning to the marketplace. It's now registered for use on sod farms and agricultural areas in Florida and may become available to golf courses. The product is manufactured by Dow AgroSciences.

John Russell, president of Soil Fumigants Co., Inc., Sanford, Fla., says that Telone II is injected into the soil by certified professionals with precision equipment that cuts slits into existing turf and deposits the product below the turf's root-zone.

"It does an excellent job against any subterranean insects, and a superb job on mole crickets and nematodes," he said.

well in very wet soils and may escape too quickly in very dry soils. For best results, soil should be moist to a depth of 6 inches at least one week before treatment. Maintain that moisture level until treatment. Fumigants should not be applied to dry soil.

Fumigation, the process

A mechanical application injects methyl bromide into the soil at a depth of 6 to 8 inches. The gas rate is determined by tractor speed and flow meter settings. Immediately behind the gas knives is a roll of 1-mil clear plastic fumigation tarp which is secured to the ground by channeling soil around a series of shovels, which actually 'tuck' the edges of the plastic into the soil. Each panel of plastic is joined together using an industrial adhesive.

The tarp is not actually impervious to the gases but it does reduce the dissipation rate of gases into the air, which both decreases hazards to workers and increases efficacy of the treatment.

The hot gas method is considered useful when treating smaller areas, areas with limited access and golf course renovation and construction where tractor damage would be considered unacceptable. This method requires the installation of a series of tubes and irrigation drip tape, approximately three feet apart, secured with sodding staple. A clear plastic 1.5-mil fumigation tarp is hand-rolled across the area to be treated.

The thicker plastic is easier to handle for instal-



This spot-fumigation, using the hot-gas method, was labor intensive, but targeted patches of off-type turf.

lation and seam sealing. The seams are hand-glued, using an industrial adhesive and the edges of the tarp are sealed by piling sod or soils around the entire perimeter. Use a leaf blower to inflate the plastic just prior to fumigant application. The methyl bromide is circulated through a heating system similar to a radiator coil and is released through the drip tape. The desirable rate is determined by weighing the cylinder of gas prior to use, based on the square footage to be treated. The plastic must remain on the site for a minimum of 48 hours or until the gas concentrations are below 5 ppm before it is removed and disposed of properly.

Fumigation rates vary from 0.75 to 1.8 lbs. per 100 ft². Renovations and problem areas of fairways are typically treated at slightly higher rates.

Follow the label carefully before attempting to reestablish turf. Don't attempt it before the label says so. But wait too long either. Otherwise, competitive contaminants have time to re-enter the area.

Once the tarps have been removed and the area allowed to breathe for the recommended time, it's time to seed, sprig, or sod. **LM**

T. J. SWAFORD is vice president of Fumatec in Venus, Fla.



John Russell uses Telone II on existing turf against nematodes, mole crickets, white grubs.

[LANDSCAPE]

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Sales strategies that work

PAGE 12 L ▶

Disney's grand green experiment

PAGE 22 L ▶

Bozzuto gives back; has fun

We at LANDSCAPE MANAGEMENT and sister publication LAWN CARE INDUSTRY (later incorporated into LM) hosted a reception to kick off the first Green Industry Expo (GIE) in Nashville in 1990.

We passed out several hundred printed invitations to industry friends, but word got around and more than a thousand "friends" showed up. It turned out to be a great party. Thankfully we had enough food for everybody.

Where did the eight years go?

Do you remember mid-November 1990?

Iraq's Saddam Hussein threatened the world with the "Mother of All Wars" weeks after invading and annexing neighboring Kuwait.

In 1990, a Republican was in the White

House, a little-known Democrat (outside of his home state of Arkansas, anyway) was dreaming of leading the United States, and Monica wasn't even old enough to have a driver's license yet.

The internet was more of a dream than a reality. E-mail, you say? What's that?

Eight years ago the first-ever GIE took place in downtown Nashville. It wasn't one of America's beauty spots. Today's Nashville is a much different city, particularly the renovated downtown where cowboy boots and rhinestone-studded jackets are eveningwear.

The GIE this year is not downtown, but at the sprawling Opryland Hotel, a 15 minute drive from downtown. For the first time, members of all three sponsoring associations of the GIE will be staying in a single hotel.

Nashville is a good location for the GIE. It's within driving distance of thousands of lawn/landscape/grounds pros. There's plenty to do there too, both at the Opryland and in the city.

Returning to Nashville is going to bring back a lot of memories for me and for the others that attended that first GIE.

Glad to return to Nashville



Ron Hall

RON HALL
Managing Editor

[PEOPLE & PROJECTS]

Environmental Care promotes Hanson

David L. Hanson was promoted to Senior Vice President of Environmental Care Inc. this past September. He will continue to serve as manager for West Coast Operations for the huge landscape contracting firm which has headquarters in Calabasas, CA. Hanson works out of Environmental Care's service center in San Jose, CA. Formerly with ChemLawn, he specializes in issues concerning chemical technology and turfgrass science.

Stronger in Pacific Northwest

Aalbu Landscape & Maintenance, Inc., Everett, WA., merged with Evergreen Services Corp., Bellevue, WA, on Oct. 1. "It makes us a strong landscape management contractor throughout the Puget Sound region," Evergreen's Rod Bailey told LM. "There are a lot of mutual benefits and advantages to this." With the merger, Tim Aalbu became vice president and manager of sales and marketing for Evergreen.

Plan your sales strategies for success

Successful sales don't happen by accident. They start when you form a strategy based on knowing why you sell and why your customers buy.

By JUDITH M. GUIDO

Like most things that succeed in life, successful sales strategies begin with planning (the work you never seem to make time for). You can avoid unnecessary disasters and missed opportunities by taking a few moments to organize your thoughts and make a clear, decisive plan.

Don't overcomplicate it, but keep it simple. Remember, the KISS principle never fails!

Plan your planning session

The first step of planning is the interrogative phase. By asking yourself these questions; you'll form a good idea of what you want to accomplish and how you will do it. Begin by asking:

► *When is the best time of the year to schedule a*

planning session? In many organizations, planning comes before budgeting. In others, this type of session has no time frame.

► *Who should be involved in the planning process?*

You already know those people who bring the most to the table in terms of participation. Some people try to avoid getting a room full of "yes-men" by purposely inviting employees representing various responsibilities, operating styles and viewpoints. This can foster real creativity and insight, if the sessions are handled properly.

► *Where will the planning session be held?* It is always best to get away from the office because employees feel free to concentrate on the matter at hand, rather than their day-to-day responsibilities.

► *How long should the planning session last?* If you are organized, you can accomplish a lot in one day. Go into the meeting with a clear agenda and time limits for various discussion points. This gives everyone the framework to keep their discussions focused.

► *Should we seek outside help to facilitate and coach our planning session?* If you feel unskilled at running a planning session like this, you might consider using an expert.

Get to the point

Once you have set the framework for the sales planning session, narrow in on your major points of discussion. By defining these early, you can provide a better structure and focus to the session:

► *What are the most painful problems that need solutions?* What elements consistently keep your organization from achieving more success?

► *Where and how can we leverage our greatest strengths?* Defining your key strengths is a major step; it allows you to understand how to use them to your competitive advantage.

► *Do we have a company vision?* If so, what have

Keep your eye on competitors

While planning a sales strategy is an exercise in internal analysis, don't forget to keep a sharp eye on your competitors. Employees, customers, networking and other sources of information can be invaluable in this. Key areas to watch include:

► Movement of competitors in your market. Did they add new products or services? Did they open a new branch?

► Did they "borrow" some of your customers?

► Are they buying or selling certain materials, franchises, types of equipment?

Your best defense to their movements are to make competitive research and intelligence a regular part of your sales planning strategies.

we done in the last year to get us closer to or further from realizing that vision? Is it time to reconsider or restate your vision?

Build a healthy dialog

That wasn't so difficult was it? You're more than halfway to enjoying the sweet taste of success. Once you've set your planning session date and assembled your team, be prepared to have some healthy dialog on the following subjects. These are key questions that will help you formulate a clear and successful strategy:

► *Who sells in your organization?* It might seem like a simple question but you'd be surprised at the responses you'll get. Is your telephone receptionist or crew leader the best sales person in your organization? Is it time to rethink your sales methods?

► *How, exactly, do you sell?* Once you've determined who sells, analyze how you sell (formally and informally). All the mailers, advertisements and sales calls in the world won't help you if your best method of selling is something else. You need to track how various types of sales are made in your organization to determine a future strategy.

► *What type of sales tools are you using?* Do you use collateral material like leave-behinds, brochures or direct mail pieces? Do reports, face-to-face sales presentations or simple cover letters convince your customers best? Review these materials, how they're used and how persuasive they are in your session.

► *Are you conveying the right message and image?* Are your sales methods and tools consistent with that image? For instance, if you are projecting an image of professionalism yet make very unprofessional sales presentations, you're not consistent. If you are going after "folksy," yet show up for a client meeting in a designer dress suit, you're not consistent. You're confusing to the customer or potential customer.

► *Are your materials professionally done?* That doesn't mean you have to use an outside advertising or marketing agency. With today's software packages (Microsoft Office, Microsoft Publisher, Lotus Suites and Power Point, for example), you can create impressive marketing tools in-house. Professional means that it is a piece you can be proud of, and it is gram-

matically correct. You'd be surprised by how many misspelled words and the amount of poor grammar you'll find in sales and marketing pieces. Don't accept any materials that are second class — if you're not happy with what you see, fix it!

► *To whom are you selling?* Do you really know who is buying your services? Are your materials and presentations appropriate?

Get your employees involved

Few organizations rise and fall because of one per-

Getting focused; from top left: Hal Cranston, Aaron Eubank, Scott Wilson, Kevin Block, Darryl Orr, Scott Annan, and Dan Jensen.



son. Rather, most succeed because of the combined efforts of many employees. If you're not bringing your employees "into the loop" on what your sales goals are, you may be missing out on a tremendous resource of knowledge, ideas and connections.

Once you've defined your selling style, your market and your methods, get more employees involved in the process. One way to do that is to ask the following questions either during a sales planning session or at another time during the planning process:

► Do you have a "wish list" of dollar amounts, numbers of customers, percentage increases, specific market segments or target clients? Have you written

Involve all levels of management in planning.

Left to right: Darryl Orr, Scott Annan, Steve Champ, Judy Guido, Dan Jensen and Ray Velasco.

it down and discussed it with key employees?

► Do others in the company know who is on the list? Never underestimate the power of your employees. They may have a friend, neighbor or relative who works at or is well connected to a



Know what your desired market is so that you can target it. When you know why your customer buys from you, it is easier to make that sale again in the future.

targeted company.

► Post your wish list and ask for comments. By offering some type of reward or incentive for comments, you may discover a wealth of new contacts and leads!

Compensation ABCs

If your sales strategy calls for hiring more people or making your sales more professional, you should investigate ways to attract and keep the best salespeople available. Start by answering these questions:

► How do you compensate your sales people? Do you use salary, commission, bonus, referral fees? Ask other landscape contractors or sales people from inside or outside the industry how they are compensated. National organizations like the Associated Landscape Contractors of America, the Professional Grounds Management Society, the Professional Lawn Care Association of America and other national and regional groups are wonderful sources for this type of information.

► How do you monitor and measure a salesperson's performance? This is known as sales metrics. I have found that it is always best to have the salesperson plan out his or her path, then sit down with them and jointly view the plan to see if the goals are realistic and attainable. Are they "pie in the sky" goals or are they not aggressive enough? Make sure you are both in agreement with the final plan. This is a productive exercise, as it is cooperative, instead of being "top-down."

► Do you have simple reporting systems to track:

- ☐ Customers contacted
- ☐ Customer retention
- ☐ Closing ratio (number of sales you've closed compared to the number of sales calls made).
- ☐ Contract termination date
- ☐ Current lawn care firm, landscape contractor or grounds manager
- ☐ Most profitable customers and why?

This information is important for a number of reasons. It analyzes sales productivity, competition and customer operations.

Know your options

You'll make better decisions if you have a good understanding of

your customers and your budget. Good communication goes both ways and your customers can really help you formulate a better strategy. Ask these questions:

► What have your customers communicated to you in the last year (both the positives, negatives and in-between comments, through formal and informal surveys or means)?

☐ Are they looking for new services?

☐ Are they being approached by your competition?

☐ Are they going through downsizing or experiencing budget cutbacks?

If you've answered "yes" to any of these questions, what sales strategies do you have to address these issues?

A golden rule is not to assume that you know your customers' needs, wants or desires. Save time, money and your mind by *asking them*. For years, I've been preaching that one of the most effective sales strategies is to become an "Askaholic;" it's a socially acceptable disease.

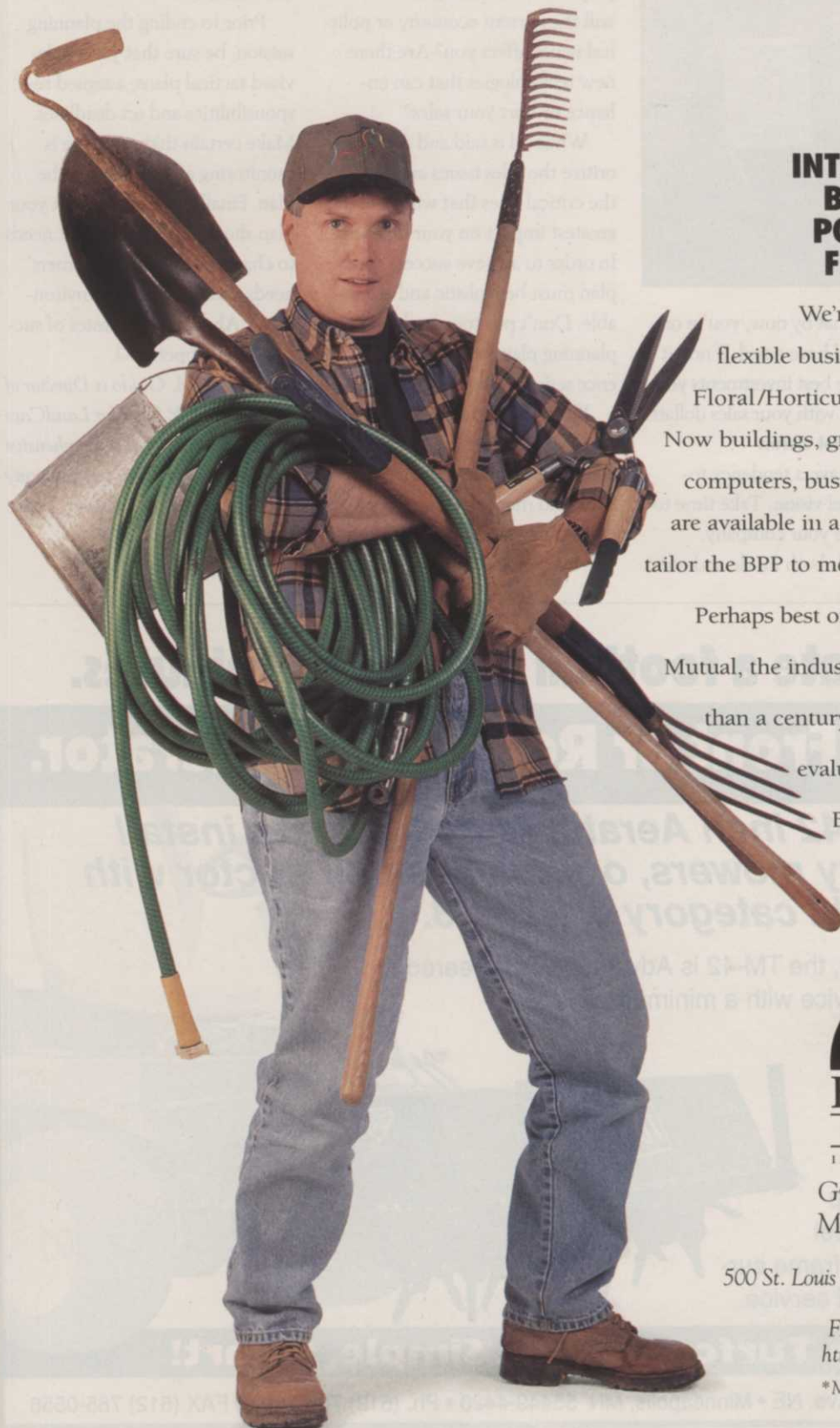
► Consider your budget. How much money will you need to spend on sales tools? Commonly used tools include:

- ☐ SFA (sales force automation) software
- ☐ Sales training
- ☐ Mailers
- ☐ Brochures
- ☐ Advertising.

Perhaps this is the year to purchase a laptop and find out why they are so popular for the business on the grow (I won't leave home without it!). Or you may want to try a PDA (Personal Digital Assistant) like the Palm Pilot, which is a complete organizer, database and scheduler.

cont. on page 6L

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If your employees know your key customers and sales goals, they may be able to contribute to the effort through their own work and contacts.

I hope that by now, you're on the web and have email. If not, it is one of the best investments you could make with your sales dollars.

Avoid tunnel vision

We all have a tendency towards tunnel vision. Take time to look outside your company. Study trends both inside and out-

side the industry. Consolidation is a major factor affecting the landscape industry and how are you prepared to deal with it? How will the current economy or political issues affect you? Are there new technologies that can enhance or hurt your sales?

When all is said and done, prioritize the sales issues and select the critical ones that will have the greatest impact on your business. In order to achieve success, your plan must be realistic and attainable. Don't put too much on your planning plate or you'll experience serious sales indigestion.

If this process seems overwhelming, sit back and take a deep breath, grab your calendar book and mark the date for your sales strategies planning session. The hardest part is getting started.

You'll be pleasantly surprised by the amount of camaraderie and enthusiasm that planning sessions can create.

Prior to ending the planning session, be sure that you've devised tactical plans, assigned responsibilities and set deadlines. Make certain that someone is monitoring and measuring the plan. Finally, remember that your plan should be flexible, as it needs to change with your customers' needs and the business environment. Ah, the sweet tastes of success. Bon Appetit! □

Judith M. Guido is Director of Marketing & Sales for LandCare USA, a national comprehensive landscaping and tree company headquartered in Houston, Texas.

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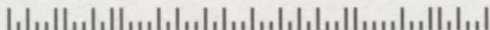
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Nine years in the planning, three years in construction, Walt Disney World's new 500-acre Animal Kingdom theme park stretches the meaning of landscape and the boundaries of landscape design.

By RON HALL/
Managing Editor

"Nature takes millions of years to produce a landscape; it takes Disney three years."—Michael Eisner, President and CEO of Disney during Animal Kingdom's grand opening.

Several dozen of us, excited and wide-eyed, are traveling on a narrow winding trail through the heat and this exotic landscape. We're bumping and swaying along in an open-sided, 32-passenger safari vehicle. The landscape surrounding the trail is unlike anything most of us have ever experienced. Palms. Trees of implausible, non-Midwestern shapes. Savanna grasses. Termite mounds.

Except for some of the grasses, all are newcomers to this landscape. A few years ago it was pasture and scrub. But, from appearances we couldn't have known this.

Nor could we have known that the vegetation surrounding the tire-rutted road was laid out in beds by an energetic and voluble landscape architect with a penchant for wearing turquoise jewelry, colorful Hawaiian-style shirts, and khaki bush

shorts. Paul Comstock, architect and the lead creative designer, motorcycled over this very trail, and marked the future beds with spray paint as he went.

Africa reborn

This is "Africa" in Disney's Animal Kingdom, the newest theme park at massive Walt Disney World near Orlando. While this landscape seems ageless, it's both recent and, using Disney language "engineered."

The termite mounds in Africa are man-made. So is the road on which we're jolting along. Craftsmen purposely "aged" the trail by pressing tire treads and twigs and bits of vegetation into the still-wet concrete. The huge time-worn boulders, where lions lazily stare back at our lurching vehicle, are also themed concrete. The tree stumps along the trail? We learn that they're really

Disney's **GRAND, GREEN** experiment

cleverly disguised animal watering stations. So skillfully is this landscape executed that it allows us visitors to believe (if only for 25 minutes) that this is East African plains land. This experience, known as the Kilimanjaro Safaris, is unlike anything in our neighborhoods.

A massive job

Planning for the 500-acre Disney Animal Kingdom (of which "Africa" is about 110 acres) began in 1990. The first of 4.4 million cubic yards of earth were moved here about five years later in August 1995. The theme park opened this past April. Disney Animal Kingdom is the fourth and by far the largest theme park at Walt Disney World.

It's also, by far, the most audaciously landscaped. Landscapes here aren't secondary to attractions; they are the attractions.

Disney Animal Kingdom has three main landscaped areas: the tropical Oasis at the entry; the Cretaceous Forest and magnolia grove in DinoLand U.S.A.; and "Africa" with its the riverine environments, grasslands and Gorilla Falls. "Asia," the final large section of the park, will open in



▲ Small grass plugs, individually planted to create a savanna as habitat for the African animals. Shown here is Chilean Cortideria Pumila.

► The presence of exotic animals challenges the theme park's landscape experts.



This huge oak was saved from a cattle pasture and replanted in Disney's Animal Kingdom. It's now one of the favorite locations for a family of gorillas.

spring 1999. It will feature a rain forest populated with Asian animals.

'We loaded up'

"This is a big Darwinian-type experiment. It's 2.3 million plants, 260 species—a huge open-air experiment," says Paul Comstock, about the park's diverse landscapes.

As he strides beside a small, murmuring stream that's shaded by a profusion of ferns and fronds, he's gesticulating and talking about what he helped create. And pointing out plants like a collection of magnolias ("the world's first angiosperms"), or a monkey puzzle tree. If Comstock is anything, he's animated; he's enthused.

"Much of what we're trying has never been tried before, so we've loaded up with the plants. The fittest will survive. I'm sure we'll end up seeing certain plants dominating in certain areas," says Comstock, who seems to revel in the profusion of plants and exotic animals.

Comstock, who grew up in a family that operates a large plant nursery in California and, for a while, was a rock musician, joined Walt Disney Imagineering (WDI) in 1989. WDI is the design and development company that conceives and creates all Disney resorts, theme parks, and attractions. Comstock is one of nine WDI landscape architects for the Disney Animal Kingdom project.

WDI team members traveled the world for ideas, inspiration and plant material. Comstock himself traveled to 28 countries. Animal Kingdom has about 100 species of trees and shrubs foreign to North America, including the first tree planted at the site in December 1995, an *Acacia xanthophloea*, grown from a seed that Comstock acquired in Africa.

Close to home

But like Dorothy in Oz, the WDI team found that what they needed most was close at hand: imagination and lots of plant material.

The landscaping team, in fact, conserved hundreds of native oak trees and much of the natural native planting, says Comstock. Not that you would recognize much of it at a glance. "We like to use uncommon plants in common ways, and common plants in uncommon ways," he says on more than one occasion to make a point.

For instance, the Disney "Imagineers" planted St. Augustinegrass, a common lawn grass in the South, along the top of river banks, and it sent long, hanging tendrils over the banks. They learned they could make live oaks appear to be acacias.

Each tree selected

"We cast trees as characters into the landscape, taking into consideration size, shade and accent. Then if you can't use your ideal tree, you look around for somebody who can play that part," explains Bill Evans, the landscape architect that Walt Disney hired to landscape his Holmby Hills (CA) in 1951, and who subsequently became director of Landscape Design at WDI. "It's sort of like an 'understudy'. You keep a large cast of characters at hand."

(Now more than 80 years old, Evans has been involved with developing the landscapes at virtually all Disney locations, including serving as a mentor to Comstock at Animal Kingdom. He "officially" retired in 1975.)

The Disney Imagineering team also bought plant material from nurseries in California, Maryland, Oregon, Texas, Arizona and Florida. In some cases it even re-discovered "foreign" plants in its own backyard, like a forest of giant bamboo that had been growing for decades in the back of a cotton field on a Georgia farm. Years

cont. on page 18L

Disney's Animal Kingdom landscape at a glance

Location: On southwest portion of Walt Disney World property near Orlando, FL.

Size: 500 acres including 110-acre African forest and grasslands

Description: Combines close encounters with live, wild animals of all kinds plus prehistoric dinosaurs and animated stars of Disney classic films.

Animals: About 1,000, representing 200 species, most acquired from zoos accredited by the American Zoo and Aquarium Association.

Plants: About 4 million, representing 3,000 species, including 40,000 mature trees (16,000 grown at the Walt Disney Tree Farm), 850 species of trees; and 2.5 million shrubs representing 2,000 species; 3,000 cycads (third largest collection in North America); and 260 different types of grasses.

Landscape maintenance staff: 45 "crafts" workers and horticultural specialists in the field, supported by 7 managers.



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Taming the 'wild' landscape

A lone gray elephant, silhouetted on a small rise about 200 yards away, uses its trunk to grasp a palm tree. The tree is about 20 feet tall. The elephant shakes the palm back and forth until the palm topples.

Rhinos are trampling the vegetation several hundreds yards away; antelope are feeding on the plants in another area.



Dennis Higbie says maintaining Disney's Animal Kingdom requires horticultural specialists.

"All of the other landscapes that I have been involved with are paint by numbers by comparison," says Dennis Higbie of Disney Animal Kingdom. "This landscape is more like an Oriental carpet. There is order to it, but the order may not be immediately perceived by the general public."

"You almost have to get yourself inside a different body to figure out how you're going to take care of this landscape."

Higbie is General Curator of Botanical Programs for Disney Animal Kingdom. He and his office staff of seven and field staff of 45 maintain the incredibly diverse landscapes at the new theme park. Not only are the trees, shrubs, flowers and grasses within the theme park meant to be viewed and enjoyed by thousands of visitors daily; the largest landscapes (like 110 acres of recreated Africa) provide habitat for exotic animals and, in some cases, food for them too.

"There is such a variety of plants. The diversity is mind boggling," says Higbie.

Contrary to the "natural" appearance of the landscapes, they are in fact intensively maintained

Not even the rainfall is left to chance. Over seven miles of irrigation main lines and 20 to 30 miles of laterals traverse the landscapes in the theme park. There are moisture sensors in practically every bed. The computerized irrigation system uses Disney World's own recycled water.

Equal care was taken in putting together the horticultural staff at Disney Animal Kingdom. It contains an individual specializing in plants like cycads, and another in orchids along with trained general horticulturists.

Often the horticulturists work evenings under portable lights. In some areas of the theme park it's the only time they can work. This is the case in "Africa" where the large animals are removed from the landscape, fed and bedded down in their own special buildings each evening.

"We have to garden in such a way that the public shouldn't look at the landscape and say, 'Wow!' It shouldn't look like it's been tinkered with," says Higbie.

That's admittedly a tall order, he admits.

"These are not static systems. They are dynamic systems, and these landscapes will not stay the same. We have to be prepared to learn something new every day."

As for the presence of the large animals in the landscapes, and specifically the elephant ripping out the palm?

"Maybe we won't put the palm tree back there. Maybe we'll have to realize that if that's what the elephants are going to do, we'll give them that," says Higbie.

"If that's OK for Africa, that's OK with us."

cont. from page 14L

ago the USDA experimented with using the bamboo to protect cotton fields from cold winds.

After buying the bamboo from the farmer, WDI hired contractors to literally jack hammer out the root systems. The plants were then transported by truck and installed in the theme park.



The Kilimanjaro Safaris ride vehicle splashes through this section of the manmade Hippo River before continuing through Disney World's recreated African landscape.

Other specimen trees they found in other not-so-exotic sites, perhaps at a construction site or in a yard.

While it's predictable that Disney's Animal Kingdom will be a big hit with vacationing guests, the theme park's landscape is another matter.

"An unpredictability will take center stage," admits Disney President and CEO Michael Eisner. □

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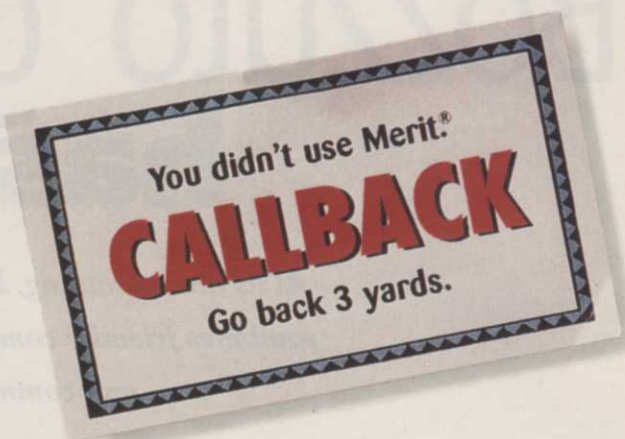
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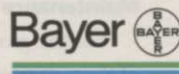
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Bozzuto 'gives back,' has fun

*At its annual outing, Bozzuto Landscaping Co.
combines friendly competition with camaraderie
and community service*

This past September — as it has two years previously — the Bozzuto Landscaping Co., Upper Marlboro, Md., served the community around Prince George's County with a pro bono project to spruce up a local community center.

And while they worked, Bozzuto's 85 crew people also went head-to-head in a team competition to make the work more enjoyable and entertaining for visitors.

This year, the company gave landscaping materials and free labor to the Kettering/Largo Community Center in Prince George's County.

"This is the third year we've done it," says company President Tom Davis. Bozzuto is a \$4.5-million commercial landscape contracting and maintenance company with 85 employees. The entire Bozzuto Group employs 420.

Davis hit upon the event a few years ago while brainstorming over where to hold a company picnic. "This is a great opportunity to show our community and service area who we are, what we do and why we do it," he says.

Each year, Bozzuto solicits up to 20 community centers to see which is the most deserving or most interested in the landscape facelift. Ease of access for visitors is also a deciding factor.

Some work, some play

The competition includes nine events. Some are serious, some are silly. But all make for an entertaining and worthwhile



Over \$10,000 in services and landscaping materials are donated for the event, which are used in the landscaping competitions.

day. The serious events are plant installation, plant identification, tire and blade replacement, grounds management and truck/trailer handling.

Silly events include blowing a ball along a track with a leaf blower and a mower obstacle course.

Teams are identified by different colored wrist bands. Davis says the event boosts morale and fosters teamwork.

Equipment is supplied by Kohler Equipment, a local distributor. Pete Basso is the Kohler sales manager who served as a judge at this year's event.

Maintenance & safety test

For the grounds management segment of the competition, contestants improve a portion of the community center.

"We design the new landscaping areas at the community center and break it up into sections," explains Davis. "Each team competes in a section. They mow it, put a signature cut on it (a diamond cut design in the turf), edge the grounds and mulch around trees."

"They also have to connect a trailer to a truck properly and do a pre-trip inspection on the truck and trailer, which is what they must do every morning. This also reinforces our safety policy. Then they have to load their equipment safely," says Davis.

"Then they do a tire change. Many times our guys will blow a tire and change them in the field. This event is for bragging rights."

All Bozzuto field personnel compete in the event, which begins at 10 a.m. and

Man and Machine



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competitive advantage, whether your business is large or small or just a dream that is starting to become a reality.

MEET KEN SILVERS from Findlay, Ohio, "Flag City USA." Five years ago, he started his own lawn care business after five years of experience in the industry.

- ▼ **His BUSINESS FOCUS:** "specializing in high quality residential lawn care."
- ▼ **His COMPETITIVE ADVANTAGE:** "outperforming larger crew-driven companies who have lost the personal touch and attention to detail."

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ends at 2:30 p.m. A barbeque is included in the day's activities.

The event is a high publicity item and is attended by many community leaders, as well as the citizenry. "County executives, council people, political leaders, some of our customers, some of our suppliers come to the competition," says Davis.

"We try to operate our company and employees in a professional manner. We've got community leaders, our clients and our suppliers seeing how a professional landscaping company operates.



Teamwork is necessary for team success, whether it is a practical skill or a silly event.

"At the same time, we get exposure from the event in newspapers, television and magazines. Every time somebody hears of a landscaping company doing something like this, it has to promote the industry," he adds.

Among the judges were Wayne Curry, county executive; Tom Bozzuto, President of The Bozzuto Group; Bonnie Van Fleet public relations manager of ALCA; E.J. Martinez, commercial account representative, TruGreen/ChemLawn; and Bob Voegtlin, acting deputy director, parks and recreation. **LM**

Recruiting and training pay off

Bozzuto's safety record is good, thanks to effective training in every aspect of the job. As of Sept. 1, the company's landscape crew had worked 20 days without a lost time accident.

"We do a ton of safety training, including in-house Spanish training for the company's Hispanic workers," says Tom Davis.

"Our workers comp rates have dropped more than 25 percent in last five

"We like to promote managers from within whenever possible. We've done that for the last four years," he explains.

A cash incentive program motivates employees to bring in crewmen and assistant supervisors. "We pay bonuses to line-level guys to bring in other line-level guys," says Davis. "They bring in solid candidates. They're not going to bring in people who are lazy. It's a very good program — we've run it two or three years now."

Davis says the ongoing industry consolidation is exciting, but says it's too early to tell how the Landcare and TruGreen/ChemLawn ventures will pan out.

"I think time will answer that question. Some of the things I imagine will happen are based on the synergies within the companies. Landcare and TruGreen/ChemLawn — to name two — are industry leaders. There are synergies there that will make them all improve," he notes.

Can giant landscaping conglomerates maintain quality equal to each of its members?

"I think they will have to," says Davis. "Everybody's going to be looking at them under the microscope expecting them *not* to [maintain quality]. I would think that the caliber of companies they acquire would not settle for anything less. It's going to be a real challenge. But I would expect them to figure out how to overcome that."

The battle, says Davis, will be fought on the pricing and service fronts. "My guess is that these larger consolidations can operate on smaller margins. It will be a challenge to compete on a head-to-head level on price. Where we will beat them is on customer service and customer loyalty. We have to be creative; we have to move quickly. A smaller company can make decisions, offer new services and improve customer service a lot quicker than the big guys. And that's where you beat them."

years," says Davis. "We attribute that to our training and the tracking. That's why we started the lost day program."

BLC training goes beyond safety, of course. It employs 15 trained horticulturists. "We designed the 'BLC Short Course in Hort' for our guys that don't go the college route," he explains.

When it recruits workers, the company relies on a fruitful college base for many good employees. "We do a lot of college recruiting for supervisory level positions," says Davis. "From management up, we try to establish that we are not interested in people coming here for only a month or two. That's why we recruit out of colleges. It's a good resource for us to fill our vacancies."

Those management-oriented students enter the company as crew supervisors.

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PGMS announces award winners

The 27th Annual Professional Grounds Maintenance Awards contest produced 21 winners from 12 states. Six are Grand Awards. The contest focuses on the level of the grounds maintenance for the sites, and not primarily the landscape design or other visual aspects of the site.

Primary judges for the contest are select members of the Professional Grounds Management; final judges are individuals with significant credentials in grounds-related areas, but who are purposefully not PGMS members.



The Grand and Honor winners will be given their award plaques at the annual PGMS Awards Banquet, this year on Sunday evening, Nov. 15, at the Belle Meade Country Club, in Nashville, TN.

The 1998 winners are:

- **Small Site:** Grand, Twitty Residence, Fairview, TN; Honor, 411 East Wisconsin, Milwaukee, WI
- **Residential Landscape:** Grand, Twitty Residence, Fairview, TN
- **Public Work Site:** Honor, City of Chicago, IL
- **Shopping Area:** Honor,

Southridge Mall, Greendale, WI

- **Hospital or Institution:** Honor, Alexian Village of Milwaukee, WI
- **Government Building or Complex:** Grand, Idaho Statehouse & Capitol Mall, Boise
- **Cemetery:** Honor, Houston National Cemetery, Houston, Texas; Honor, Greenwood Cemetery, Knoxville, TN
- **Industrial or Office Park:** Grand, Westfield Companies, Westfield Center, Ohio; Honor, Abbott Park, Abbott Park, IL; Honor, Park Avenue Office Campus, Florham Park, NJ
- **Option-Multiple Sites under Same Management:** Honor, The Patterson Club,

Fairfield, CT

- **School or University Grounds:** Grand, Illinois State University, Normal, IL; Honor, Multnomah Bible College & Biblical Seminary, Portland, OR; Honor, Dwight-Englewood School, Englewood, NJ
- **Condominium, Apartment Complex or Planned Community:** Grand, Post Dunwood Apartment Homes, Atlanta; Honor, Leisure World, Silver Spring, MD; Honor, Normandy Village, Wauwatosa, WI; Honor Spruce Edge Town Homes, Mountain Lake, NJ; Honor, Stonegates, Greenville, DE. **LM**

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LANDSCAPE management

November 1998

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- 01 ☐ 250 GOLF COURSES (Also fill in questions #3 & #4)
 02 ☐ 255 Landscape Contractors (installation and maintenance)
 03 ☐ 260 Lawn Care Service Companies
 04 ☐ 265 Custom Chemical Applicators (ground and air)

- 05 ☐ 270 Tree Service Companies/Arborists
 06 ☐ 275 Landscape Architects
 07 ☐ 280 Land Reclamation and Erosion Control
 08 ☐ 285 Irrigation Contractors
☐ Other (please specify) _____

- 09 ☐ 290 Sports Complexes
 10 ☐ 295 Parks
 11 ☐ 300 Right-of-Way Maintenance for Highways, Railroads or Utilities
 12 ☐ 305 Schools, Colleges, Universities
 13 ☐ 310 Industrial or Office Parks/Plants
 14 ☐ 315 Shopping Centers, Plazas or Malls
 15 ☐ 320 Private/Public Estates or Museums
 16 ☐ 325 Condos/Apartments/Housing Developments/Hotels/Resorts
 17 ☐ 330 Cemeteries/Memorial Gardens
 18 ☐ 335 Hospitals/Health Care Institutions
 19 ☐ 340 Military Installations or Prisons
 20 ☐ 345 Airports
 21 ☐ 350 Multiple Government Municipal Facilities
☐ Other (please specify) _____

- 22 ☐ 355 Extension Agents/Consultants for Horticulture
 23 ☐ 360 Sod Growers/Turf Seed Growers/Nurseries
 24 ☐ 365 Dealers/Distributors/Formulators/Brokers
 25 ☐ 370 Manufacturers
☐ Other (please specify) _____

2. Which of the following best describes your title? (fill in ONE only)

- 26 ☐ 10 Executive/Administrator- President, Owner, Partner, Director, General Manager, Chairman of the Board, Purchasing Agent, Director of Physical Plant
 27 ☐ 20 Manager/Superintendent- Arborist, Architect, Landscape/Grounds Manager, Superintendent, Foreman, Supervisor
 28 ☐ 30 Government Official- Government Commissioner, Agent, Other Government Official
 29 ☐ 40 Specialist- Forester, Consultant, Agronomist, Pilot, Instructor, Researcher, Horticulturist, Certified Specialist
 30 ☐ 50 Other Titled and Non-Titled Personnel (please specify) _____

3. Is your golf course:

- 31 ☐ A Public 32 ☐ B Semi Private 33 ☐ C Private 34 ☐ D Hotel/Resort 35 ☐ E Municipal

4. If you work for a golf course, how many holes are on your grounds?

- 36 ☐ 1 9 37 ☐ 2 18 38 ☐ 3 27 39 ☐ 4 36+

5. How many acres are maintained at your facility?

6. SERVICES PERFORMED (fill in ALL that apply)

- 40 ☐ A Mowing 45 ☐ F Turf Fertilization 50 ☐ K Paving, Deck & Patio Installation
 41 ☐ B Turf Insect Control 46 ☐ G Turf Disease Control 51 ☐ L Pond/Lake Care
 42 ☐ C Tree Care 47 ☐ H Ornamental Care 52 ☐ M Landscape Installation
 43 ☐ D Turf Aeration 48 ☐ I Landscape/Golf Design 53 ☐ N Snow Removal
 44 ☐ E Irrigation Services 49 ☐ J Turf Weed Control 54 ☐ O Other (please specify) _____

7a. Do you specify, purchase or influence the selection of landscape products?

- ☐ Yes ☐ No

7b. If yes, check which products you buy or specify: (fill in ALL that apply)

- 55 ☐ 1 Aerators 62 ☐ 8 Herbicides 69 ☐ 15 Sweepers
 56 ☐ 2 Blowers 63 ☐ 9 Insecticides 70 ☐ 16 Tractors
 57 ☐ 3 Chain Saws 64 ☐ 10 Line Trimmers 71 ☐ 17 Truck Trailers/Attachments
 58 ☐ 4 Chipper-Shredders 65 ☐ 11 Mowers (reel/rotary) 72 ☐ 18 Trucks
 59 ☐ 5 De-icers 66 ☐ 12 Snow Removal Equipment 73 ☐ 19 Turfseed
 60 ☐ 6 Fertilizers 67 ☐ 13 Sprayers 74 ☐ 20 Utility Vehicles
 61 ☐ 7 Fungicides 68 ☐ 14 Spreaders

8. Do you have a modem? ☐ Yes ☐ No

101 113 125 137 149 161 173 185 197 209 221 233 245 257 269 281 293 305
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 106 118 130 142 154 166 178 190 202 214 226 238 250 262 274 286 298 310
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29 ☐ 40 Specialist- Forester, Consultant, Agronomist, Pilot, Instructor, Researcher,
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- 36 ☐ 1 9 37 ☐ 2 18 38 ☐ 3 27 39 ☐ 4 36+

5. How many acres are maintained at your facility? _____

6. SERVICES PERFORMED (fill in ALL that apply)

- | | | |
|--|--|--|
| 40 <input type="radio"/> A Mowing | 45 <input type="radio"/> F Turf Fertilization | 50 <input type="radio"/> K Paving, Deck & Patio Installation |
| 41 <input type="radio"/> B Turf Insect Control | 46 <input type="radio"/> G Turf Disease Control | 51 <input type="radio"/> L Pond/Lake Care |
| 42 <input type="radio"/> C Tree Care | 47 <input type="radio"/> H Ornamental Care | 52 <input type="radio"/> M Landscape Installation |
| 43 <input type="radio"/> D Turf Aeration | 48 <input type="radio"/> I Landscape/Golf Design | 53 <input type="radio"/> N Snow Removal |
| 44 <input type="radio"/> E Irrigation Services | 49 <input type="radio"/> J Turf Weed Control | 54 <input type="radio"/> O Other (please specify) _____ |

7a. Do you specify, purchase or influence the selection of landscape products?

- ☐ Yes ☐ No

7b. If yes, check which products you buy or specify: (fill in ALL that apply)

- | | | |
|--|--|--|
| 55 <input type="radio"/> 1 Aerators | 62 <input type="radio"/> 8 Herbicides | 69 <input type="radio"/> 15 Sweepers |
| 56 <input type="radio"/> 2 Blowers | 63 <input type="radio"/> 9 Insecticides | 70 <input type="radio"/> 16 Tractors |
| 57 <input type="radio"/> 3 Chain Saws | 64 <input type="radio"/> 10 Line Trimmers | 71 <input type="radio"/> 17 Truck Trailers/Attachments |
| 58 <input type="radio"/> 4 Chipper-Shredders | 65 <input type="radio"/> 11 Mowers (ree/rotary) | 72 <input type="radio"/> 18 Trucks |
| 59 <input type="radio"/> 5 De-icers | 66 <input type="radio"/> 12 Snow Removal Equipment | 73 <input type="radio"/> 19 Turfseed |
| 60 <input type="radio"/> 6 Fertilizers | 67 <input type="radio"/> 13 Sprayers | 74 <input type="radio"/> 20 Utility Vehicles |
| 61 <input type="radio"/> 7 Fungicides | 68 <input type="radio"/> 14 Spreaders | |

8. Do you have a modem? ☐ Yes ☐ No

101	113	125	137	149	161	173	185	197	209	221	233	245	257	269	281	293	305
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103	115	127	139	151	163	175	187	199	211	223	235	247	259	271	283	295	307
104	116	128	140	152	164	176	188	200	212	224	236	248	260	272	284	296	308
105	117	129	141	153	165	177	189	201	213	225	237	249	261	273	285	297	309
106	118	130	142	154	166	178	190	202	214	226	238	250	262	274	286	298	310
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108	120	132	144	156	168	180	192	204	216	228	240	252	264	276	288	300	312
109	121	133	145	157	169	181	193	205	217	229	241	253	265	277	289	301	313
110	122	134	146	158	170	182	194	206	218	230	242	254	266	278	290	302	314
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112	124	136	148	160	172	184	196	208	220	232	244	256	268	280	292	304	316



Lava rock for landscapes

Lava rock occurs naturally in three shades, earthy red, black or gold from Mountain West Colorado Aggregate (MWCA) of Rexburg, ID. Reds blend into any garden, black is appealing with lush greenery, and gold, mined exclusively by MWCA, is now available. One-third the weight of regular rock, lava rock withstands the elements and won't blow or wash away. For more information contact MWCA at 800/727-9959, or www.mountainwest-ca.com or

Circle No. 264

Batteries Plus catalog

Batteries Plus, a national business-to-business and retail battery chain, introduces its newest catalog, Land Mobile Batteries, which offers a broad selection of batteries for a variety of items including two-way radios, pagers, laptop computers and cell phones. Automotive, lawn equipment and heavy duty truck batteries are also available, as are UPS/backup system batteries for computers, security alarms and emergency lights.

For more information contact 800/67-START, website www.batteriesplus.com or

Circle No. 265

Attachments move trees, other materials

The Nursery Jaws line of attachments from Diversified Products Marketing (DPM) allows any type of loader or forklift to manipulate trees and shrubs in B&B, wooden boxes and plastic containers, as well as boulders, landscape materials and palletized products. Mounting in seconds to a front-end loader with a Quick-Tach system, Nursery Jaws can be run using auxiliary hydraulics. A two-man job can be turned into a one-man operation, increasing productivity, reducing injuries, liability and product damage. For complete information and video, contact DPM, Inc., Box 36, Davenport, NE, 68335, call 800/669-4408, fax 402/364-2194, email: nurseryjaws@navix.net, or www.nurseryjaws.com, or



Circle No. 266



Soil renovator for skid-steer loaders

The RotaDairon RDH-60, from Dairon S.A. of France, is specifically designed for skid-steer loader application with a quick attachment system presently made to fit newer models of Bobcat™, New Holland™ and John Deere™ loaders. The

RDH-60 has a working width of 60 inches, tills to a depth of 5.5 inches and uses an oil-bath chain drive system and hydraulic motor. It also features the patented 'Self Safety System', designed to protect operators from flying rocks, wood and debris as the machine renovates the turf and soil in its path. Available for other loaders in the future, the basic requirement for the RDH-60 is a front lift capacity minimum of 1,550 lbs.

For more information contact the North American distributors, Emrex, Inc., Box 1349, Kingston, Pa. 18704 at 717/288-9360 or

Circle No. 267

5000-PSI cold-water pressure washer

Landa introduces a new cold-water pressure washer that surpasses the traditional pressure threshold of 3,000 PSI. The gasoline-driven MPG5-50921E delivers 5,000 PSI, enough power to strip concrete from steel forms.

The model combines the extra high pressure with a flow of five gallons per minute and is driven by a 25-hp Kohler OHV engine. The two six-gallon fuel tanks provide nearly 6.5 hours of continuous operation. As with all Landa pressure washers, the MPG has a five-year warranty on manufactured parts.

For more information contact Crismon Lewis, Landa at 800/547-8672, ext. 175 or

Circle No. 268



> PRODUCT REVIEW

For your draining and funneling needs

The new Ultra-Drainmate Superfunnel from UltraTech International, Inc., adds safety and efficiency to draining and



funneling tasks. A steel drain grid elevates oil filters, pails, etc., during the draining process for complete drainage of residues. Steel construction of the large 25x25x8.5 in. funnel will not support combustion, allowing safe usage with petrochemicals. Ultra-Drainmate II features a lockable, hinged cover with UL listed fusible link for automatic fire closure. Options include a steel rack designed to hold multiple plastic oil jugs in an inverted position, and 'Punch-n-Drain', a tool which punctures oil filters to allow complete drainage.

For more information contact UltraTech International, Inc., at 800/353-1611 or 904/292-1611, fax 904/292-1325, website <http://spillcontainment.com>, email ultratech@spillcontainment.com or

Circle No. 269



have a direct drive, heavy duty 12-volt DC motor in a weather-tight enclosure, and a capacity of 10.75 ft³/700 lbs. and 5.75 ft³/350 lbs., respectively.

For more information contact TrynEx, 322 East Lincoln, Box 69, Royal Oak, MI, 48068-0069, call 800/725-8377, fax 248/546-5101, or

Circle No. 270

SnowEx from TrynEx

The SnowEx tailgate spreader is ideal for parking lots, driveways and roads. The SP-1075 has a unique pivot mount option which provides full tailgate access and requires no drill holes in the truck bed and variable fingertip key touch with digital system status. The SP-575 can be mounted with a Class 3, utility or three-point mount. Both the SP-1075 and the SP-575

Convenient pole pruner

Stihl introduces the new HT 70, a fixed length pole pruner which reaches branches 10 to 11 feet off the ground. The HT 70 is part of the 4137 series family engine, whose major components are interchangeable within the series.

With a unit weight of 11.8 lbs, the pruner can be used to trim branches, tall hedges and small tree limbs that don't require a telescoping shaft. Other features in-



clude the Easy Start system and an automatic gear-driven oiler.

For more information contact your nearest Stihl dealer, call 800/GO STIHL or website www.stihlusa.com, or

Circle No. 271



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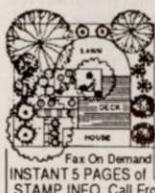


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The Equipment & Engine Training Council (EETC) is offering \$50 dues reduction for dealers through November for new members. The regular membership is \$175.

The EETC is a professional organization focused on ensuring that there will be a continuous and highly trained pool of service technicians available in the future to meet the needs of the outdoor power equipment industry. It is made up of manufacturers, dealers and distributors' service and training personnel, vocational and technical schools, national educational associations and other industry and educational leaders.

For more information—or to take advantage of the dues special—contact the EETC at 1946 So. IH-35, Suite 100-A, Austin, TX 78704-3693. phone: 512/442-1789; fax: 512/442-1789; e-mail: opecertJ@io.com.

Move over, Len Berman

The Stihl Timbersports Series competition can be seen on ESPN starting in November. The competition consists of three different wood chopping events: spring board, underhand and standing chop; and three sawing events: stock saw, modified hot saw and single buck cross cut sawing. The five taped shows premier on ESPN Nov. 21 and 28 at 6 and 2 PM EST, respectively and on Dec. 5, 20 and 27 at 6, 5 and 1 PM EST.



'artsy' turf is on the move

A remarkable exhibit concluded a five-month run November at the Canadian Centre for Architecture in Montreal. It's entitled *The American Lawn: Surface of Everyday Life*. It's described as an "interpretative three-dimensional installation." Some of the objects in the multi-media exhibit: space age lawnmowers; lovingly fetishized lawn ornaments; photographs (including this one taken by David Mellor of the Milwaukee Brewers grounds crew), excerpts from movies and television, and... surprise, plugs of actual grass. The exhibition was designed by experimental New York architects Diller + Scofidio. If you missed it in Montreal, don't despair. It will be coming to Cincinnati this spring as part of a three-year tour of North America.

Texas A&M honors alumnus Dr. Jim Watson

The Texas A&M University College of Agriculture and Life Sciences recently honored Dr. James R. Watson as an "Outstanding Alumnus."

Watson is best known as the vice president of customer relations and agronomy for the Toro Company, his employer since 1952. Before that, he was an assistant professor of agronomy at Texas A&M, where he selected the first turf-type bermudagrasses for use in Texas. He later developed and released a bentgrass that is used in golf courses in the Northern Plains and Central Canada.

Watson is founder of the International Turfgrass Society and has served as president one year and director since 1979. He received his bachelor's degree in agronomy from Texas

A&M University in 1947 and his doctorate from Pennsylvania State University in 1950, the first doctorate ever earned in the turfgrass field.

Woods Equipment builds new plant

Woods Equipment Co., recently broke ground on a 68,000-square-foot manufacturing plant in Gardner, MA. The new facility will manufacture Wain Roy quick coupler systems currently manufactured in Hubbardston, ten miles away. In addition, the Gardner facility will also manufacture other construction equipment.

Woods recently acquired Wain Roy to broaden its product offering in the construction equipment market, a release from the company said.

Our new BP 6200 lets you move along at an amazing clip.



Feel the difference.

You're cutting through thick, dense wood like it's butter and this pruner is a weightless extension of your hand. You're aware of its keen edge and smooth cutting performance. Its extra strength and stability on larger cuts. Superb fit and balance. And comfort like you've never felt before.



Every Corona BP 6200 Series pruner is more comfortable because of its ergonomic design with 45° angle cutting head. Cushioning shock absorbing bumper. And strong, broad-shouldered, co-molded Corobond handles that provide a secure grip with less pressure, greatly relieving hand and wrist fatigue.

A larger bearing surface and self-aligning pivot bolt with patented, hi-torque all-steel locking nut provide superior stability and greatly reduced force-to-cut.



And, as with all our top-of-the-line professional pruners, the BP 6200 Series features a forged hook for extra strength and Coronium™ steel forged alloy blades that are fully heat treated to hold a precision edge after resharping.

The **BP 6200 Series** professional bypass hand pruner by Corona. Take it for a test drive and feel the difference for yourself. Available in 1/2", 3/4" and 1" cutting diameters.



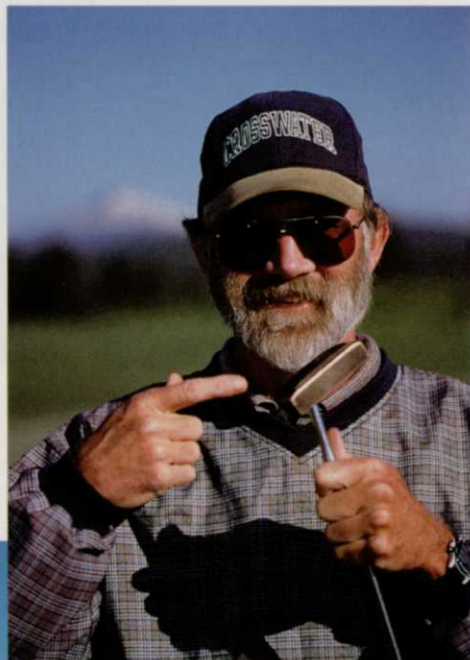
The BP 6200 Series Bypass Pruners are covered under the Corona two-week, money-back Test Drive guarantee. Circle No. 145 on Reader Inquiry Card

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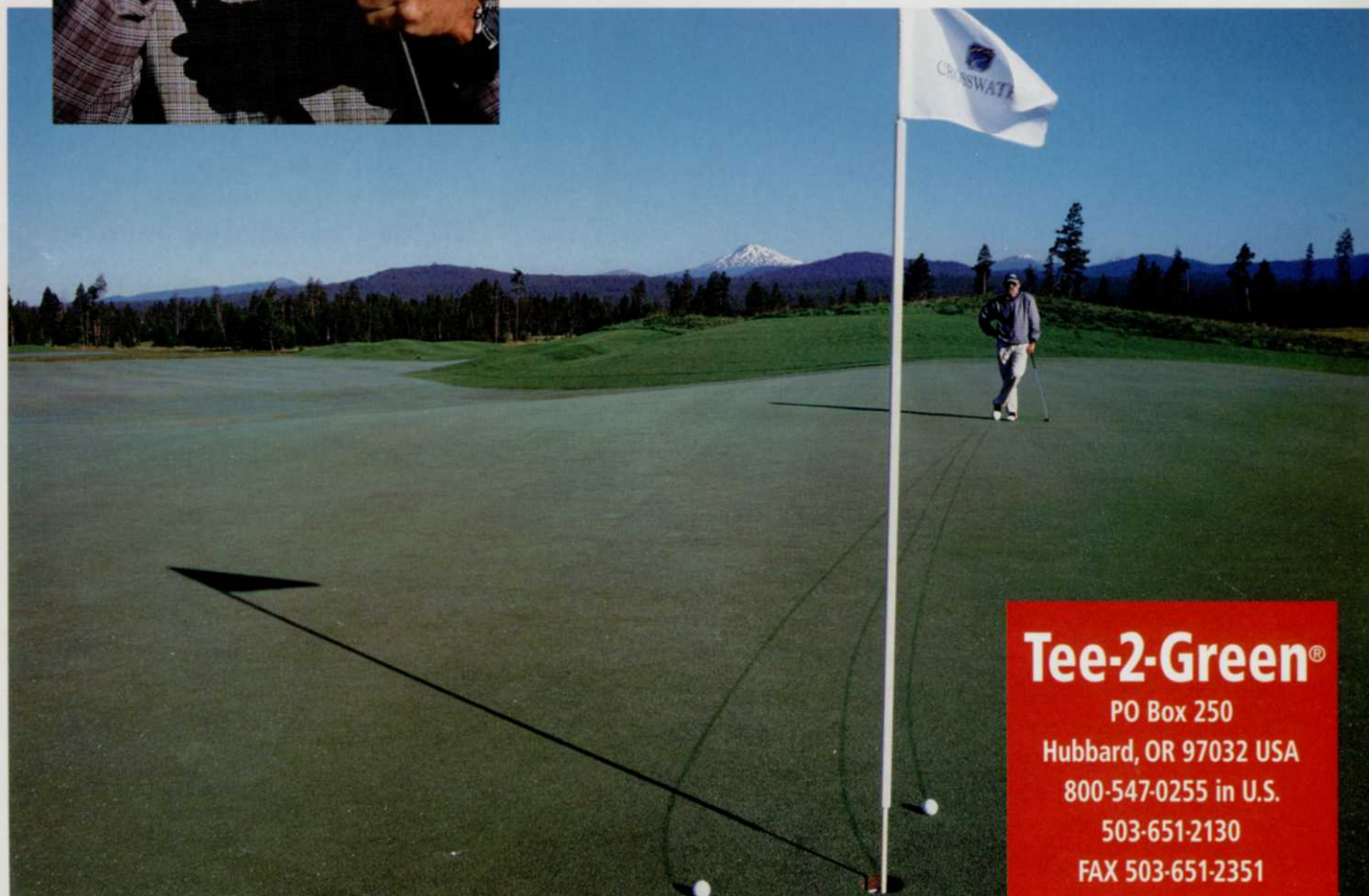
"I think the only way you can really know how your greens are performing is by putting them. I putt my greens daily, and schedule maintenance accordingly.

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We cut our PennLinks tees at 1/4" and our Penneagle fairways at 3/8" with excellent results.

Our greens were flawlessly designed, properly constructed and seeded with the ideal grass for this climate. They perform beautifully throughout the seasons —the proof is in the putting."

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