



# Landscape Notes

Tulare and Kings Counties



**September 2002**

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## Environmental Horticulture in California

*Dave Burger (UCD), Vic Gibeault (UCR), Pam Geisel & Michelle Le Strange (UCCE)*

### Perspective

*Environmental horticulture* is defined as a segment of agriculture involving the production, utilization, management and maintenance of plants that enhance human activities. The environmental horticulture industry in CA provides jobs for hundreds of thousands and benefits for essentially all Californians.

Some other terms are also used to define this industry.

*Urban horticulture* is used when the focus is on activities related to home horticulture and includes home landscapes and gardens, home food production, and community and school gardening in and around populated areas.

*Ornamental horticulture* encompasses plant management and maintenance and *The Green Industry* is used to include all people, products and services that grow, build, maintain and sell plants that make up California's landscapes.

*Environmental horticulture* is an inclusive term that most accurately describes floriculture, landscape horticulture, nursery production, turfgrass management, urban forestry, and urban horticulture.

### Importance of Environmental Horticulture to California

Annually Californians spend more than \$8.5 billion on environmental horticulture and generate \$10 billion of sales. These sales support over 129,000 jobs and translate into \$7 billion in household income. Landscapes cover over 225,000 acres and with increasing urbanization of the state they continue to rise.

Production statistics from CDFA rank nursery, flower, and foliage crops in the top 10 of California's farm products. Combined this production segment of environmental horticulture has a total income of more than \$2.5 billion making it the largest plant commodity segment in CA agriculture. California's nursery and flower/foliage crops ranks #1 in the United States and accounts for 25% of U.S. production.

Besides the economic impacts, environmental horticulture products, services and activities enhance our physical, psychological, sociological and emotional well being. Environmental horticulture provides opportunities for recreational activities like golf, baseball, football, soccer, lawn tennis, croquet, etc. Parks enhance the beauty of our cities, provide picnic areas and places to walk and play which reduces stress. Gardens and plants provide therapeutic applications in quicker convalescence and higher workplace productivity.

### Challenges

One challenge facing environmental horticulture interests in California is the variety of target audiences looking for answers to their problems. Audiences range from the small cut flower producer to the research director at a major nursery to the horticulturist at CalTrans to the landscape contractor to the maintenance gardener to the individual homeowner. *The purpose of this newsletter is to provide science-based information and solutions to problems that affect all individuals who represent important aspects of Environmental Horticulture in California.*

# Mowing California Turfgrasses

*Ali Harivandi, Environmental Horticulture Advisor, UCCE & Vic Gibeault, Turf Specialist, UC Riverside*

Attractive lawns and sports fields depend on proper mowing as well as irrigation and fertilization. Mowing at a height and frequency that complement the growth habit of grass contributes to uniform, dense turf that discourages weeds and supports much traffic. Mowing too low weakens grass and causes a stand to thin out, which encourages weed invasion, susceptibility to traffic wear and pests, and eventual turfgrass death. Mowing too high produces a ragged, unattractive stand and may encourage buildup of thatch. Mowing frequency depends on the rate of grass growth, grass genetics, climate and lawn maintenance practices.

## Determining Height of Cut

Grass survival requires adequate leaf surface for food production through photosynthesis. Optimum cutting height is determined by the growth habit and leaf texture (i.e., width of leaves) of grass species. Mowing too low removes too much of the grass' food producing tissue, which are leaves and stems. Grass mowed too short and/or too frequently literally starves and causes the turfgrass stand to thin. Mowing too high, on the other hand, can negatively affect the appearance or usefulness of a lawn (especially on sports fields).

Due to genetic variation, different turfgrass species require different mowing heights for optimum quality. All lawns should not be mowed to the same height. Therefore, mowers must be set differently for each species. The ranges for optimum mowing height for common California turfgrasses appear in [Table 1](#).

Within the optimum mowing height range for each species, grass will produce a deeper root system and be healthier the higher it is mowed. Also within the recommended mowing height range for each grass, a higher cut grass is more drought, heat, traffic, shade, disease and pest resistant than a lower cut.

## Mowing Frequency

Turfgrass managers determine mowing frequency from turfgrass growth rate during each season and by the appearance desired for specific use. Cool-season turfgrasses require more frequent mowing in the spring and autumn when they grow most vigorously. Warm-season turfgrasses require more frequent mowing during summer months. Both cool- and warm-season turfgrasses are generally mowed more frequently in formal landscape settings than in informal areas.

Agronomically speaking, turfgrass mowing frequency follows the “1/3 rule”: mow often enough so that no more than 1/3 of the length of the turfgrass shoot (leaf blade and stem) is removed at any one time. For example, if you maintain a turf-type tall fescue lawn at 2 inches, mow it when the grass reaches 3 inches in height. This may mean mowing tall fescue once a week during the spring and fall when the grass is growing vigorously, but only once every two weeks during the summer.

Usually, a turfgrass stand mowed to a low height requires more frequent mowing than the same species mowed to a higher height. Depending on the mowing height chosen for a specific turfgrass species, [Table 1](#) also gives the height at which a mower must be set to maintain the desired mowing height.

## Dealing with Clippings

Grass clippings make up a large portion of California's green waste stream during the growing season. With few exceptions, it is better to leave clippings on lawns after mowing. This practice, termed “grasscycling”, is increasingly popular as California communities try to reduce the amount of waste going to landfills. Grass clippings (composed primarily of water) dry and decompose quickly, releasing nutrients (mainly nitrogen) back into the turf canopy.

Grasscycling can be practiced on healthy turfgrass stand as long as turf is properly managed. Unfortunately, in many cases lawns are managed like a “crop”: *over-watered* and *over-fertilized* to encourage maximum growth, then harvested by bagging and transporting grass clippings to a compost pile or landfill.

Proper mowing is required for successful grasscycling. Turfgrasses should be mowed when the surface is dry, mower blades kept sharp, and the “1/3 rule” followed. Frequent mowing produces short clippings, which readily filter into the turf canopy and do not cover the grass surface if left on the lawn.

There are times when grasscycling is not appropriate. Prolonged wet weather, mower breakdowns, or other circumstances, which reduce mowing frequency and thus lead to an excessive volume of clippings, probably dictate that grass clippings should be bagged. Grass clippings, however, are excellent additions to a compost pile, which are now commonly maintained by both commercial landscapers, and homeowners. Turfgrass

clippings can also be used as mulch to provide weed control and prevent moisture loss in flowerbeds, and around trees and shrubs. Mulching with clippings should be avoided, however, if the clippings are of an invasive species such as Bermuda grass, or herbicides were recently applied to the turf. Due to “matting” problems (which reduce water and air movement into the soil), using grass clippings to create a mulch layer thicker than an inch is not recommended.

### Additional Lawn Mowing Tips

- Mow grass mixtures to favor the predominant or most desirable grass.
- Do not mow wet grass. It sticks to blades and clogs the mower.
- Change the direction of the mowing often to prevent a washboard effect.

- Sharpen lawn mower blades regularly, as dull mowers leave a ragged appearance from crushed or uncut grass blades. Damaged grass may also be more susceptible to disease infection.
- Do not drastically or suddenly change cutting height. If grass has become too high, the recommended height should be regained by gradually lowering the mowing height of successive cuttings.
- Do not mow lawns suffering drought or other climate stresses. Lawns suffering from lack of water should be watered, allowed to dry, then mowed.
- Mow grasses in shade slightly higher and less frequently than normally recommended. Shade reduces photosynthesis and slightly higher mowing heights, which leave greater leaf surface, compensate for light reduction.

**Table 1. Proper mowing heights and mowers for California’s warm and cool season turfgrasses.**

Grass Type	Climate Adaption	Mower Setting (inch)	Mow when grass reaches this height (inch)	Mower Type
Bermudagrass (common)	warm	1 – 1 ½	1 ½ - 2 ¼	reel or rotary
Bermudagrass (hybrid)	warm	½ - 1	¾ - 1 ½	reel
Buffalograss	warm	1 – 2	1 ½ - 3	rotary
Kikuyugrass	warm	1 – 1 ½	1 ½ - 2 ¼	reel or rotary
St. Augustinegrass	warm	1 – 2	1 ½ - 3	rotary
Zoysiagrass	warm	½ - 1 ½	¾ - 2 ¼	reel or rotary
Bentgrass	cool	½ - 1	¾ - 1 ½	reel
Kentucky Bluegrass	cool	1 ½ - 2 ½	2 ¼ - 3 ¾	reel or rotary
Perennial Ryegrass	cool	1 ½ - 2 ½	2 ¼ - 3 ¾	reel or rotary
Tall Fescue	cool	1 ½ - 3	2 ¼ - 4 ½	reel or rotary

## Eucalyptus Red Gum Lerp Psyllid Update

According to UC Entomologist, Don Dahlsten, the natural enemy introduced into California to control the red gum lerp psyllid is now established in ten counties: San Mateo, Alameda, Los Angeles, San Diego, Santa Clara, Ventura, Monterey, Orange, Santa Barbara, San Luis Obispo, and Imperial. Releases have also been made in Fresno, Visalia and Hanford and we are waiting to see if the small parasitoid establishes. Releases of insectary reared natural enemies continues in CA.

Dahlsten advises people to be patient as a successful biological control program to control the lerp psyllids is likely to take some time. Dahlsten is in charge of the program that is rearing and releasing the parasites (tiny

wasps) in various locations throughout the state. If the parasitoids are like others released over the years to control various pests, they will spread on their own throughout the remainder of the infested areas.

Soil drench applications of imidacloprid (Merit®) are effective in managing the red gum lerp psyllid. Applications can prove costly but worth it in many instances. Apply the systemic insecticide in January so that tree roots can absorb and translocate it throughout the tree canopy. This process takes several months, but is expedited by the natural tendency of the tree to push a flush of growth in spring.

## Weed Watch: Annual Bluegrass

*Dave Cudney, Clyde Elmore, and Vic Gibeault, Weed Science and Turf Specialists, UCR and UCD*

Annual bluegrass, *Poa annua*, is one of the most common weeds in lawns, ornamental plantings, and gardens in the United States. Commonly referred to as “Poa,” it is a particular problem in golf course greens, fairways and lawns throughout the world. The genus *Poa* consists of about 200 species worldwide. Their typical “boat-shaped” leaf tips, which curve up like the bow of a boat, are a distinguishing characteristic.

### IDENTIFICATION & LIFE CYCLE

Annual bluegrass is a misnomer because there are two plant types of annual bluegrass: a true annual (*P. annua* var. *annua*) and a perennial type (*P. annua* var. *reptans*). While they are not easy to distinguish from each other, the annual type is more upright in its growth habit and produces more seed than the lower-growing perennial.

Annual bluegrass starts to germinate in late summer or fall as soil temperatures fall below 70°F and continues to sprout throughout winter. This allows several flushes of the weed at one site all winter long. Annual bluegrass grows to a height of 6 to 8 inches when left unmowed. The flower structure (inflorescence) is a terminal panicle from 1 to 4 inches in length. Most seed heads are formed in spring.

Annual bluegrass has a fairly weak, shallow, root system and needs available moisture from rainfall or frequent irrigation to survive. Annual bluegrass can also grow in compacted soil conditions. It usually dies in summer.

### MANAGEMENT

Overwatering, especially in shady areas, will predispose lawns to annual bluegrass invasion. Use deep and infrequent irrigation to discourage the development of the shallow-rooted annual bluegrass populations.

Withhold water until the desirable lawn species are beginning to show drought stress. Avoid fertilization and don't aerate turf during the peak of annual bluegrass germination. Avoid cultural practices and use patterns that might tend to promote soil compaction.

No single control procedure has been successful in controlling annual bluegrass in turfgrass. The same preemergence herbicides that are used to control crabgrass also work on annual bluegrass. Balan (bentazone), Prefar (bensulide), Dacthal or Weed Preventer (DCPA), Dimension (dithiopyr), Ronstar (oxadiazon), Scott's Halts, Pre-M, Pendulum (pendimethalin) and Barricade (proflumicarb) have been successful in limiting germination of annual bluegrass, but they must be applied before weed seeds germinate to be effective. Kerb is only available for use in warm-season turf. These herbicides (with the exception of Kerb) will not control emerged plants.

To limit bluegrass germination during winter, apply preemergence herbicides in late summer or early fall (around Labor Day), when soil temperature drops below 70°F. Where the perennial type is a large component of the bluegrass population as is often the case in golf course greens, preemergence herbicides will be of little or no benefit.

Postemergence herbicides can limit growth of annual bluegrass but have been of little benefit when used as the sole method of control. Prograss (ethofumesate) has been used in perennial ryegrass, Kentucky bluegrass, and dormant bermudagrass to reduce annual bluegrass infestations. Kerb can be used in warm-season turfgrass for established annual bluegrass, but it is slow acting (15-21 days).

## Disease Watch: Spring Dead Spot & Fall Treatments

*Michelle Le Strange*

Spring Dead Spot (SDS) is the first disease affecting bermudagrass in California that kills plants. It first appears in spring after the breaking of winter dormancy, as circular patches of dead and dying bermudagrass plants. Affected areas vary from 2 to 12 inches in diameter. The fungus (*Ophiosphaerella korrae*) is active during the winter when bermuda is dormant. Diseased

areas are depressed because the root fungus lives off the carbohydrates that are stored in the rhizomes, stems, and roots, and it ends up killing the plants. When spring arrives there are not enough carbohydrates in the plant to resume growth. By summer the dead patches usually have filled in with new growth arising from surviving

plants within the patches. The disease can be severe in the valley because our dormancy period is long, however it is also a problem in golf courses in southern CA.

Spring dead spot can affect young and old stands of both common and hybrid bermudagrass. There is much anecdotal information about SDS. Cultural recommendations include summer fertilization to main-

tain vigor, but avoid overfertilizing in late summer. Applications of Banner Maxx, Eagle, Heritage and Rubigan in the fall just before the bermuda goes dormant help alleviate the disease. Rubigan moves fast through the roots and may provide more control. Research work is being initiated in Fresno and Visalia to investigate this fungus and its management, but it will take several years before results are available.

## Upcoming Meetings – Mark your calendars

### September 27, 2002 – Pruning for the New Millennium Seminar

Sponsored by the Western Center of the International Society of Arboriculture at the Visalia Convention Center. Learn how and why to prune trees. Large tree pruning demonstration in the afternoon. See enclosed meeting announcement and registration form. *Register today as this meeting will be popular.*

### November 5, 14, 19, and 26, 2002 – Landscape Pest Management Seminars

Three Thursday and one Tuesday evening seminars will focus on turf and ornamental pest identification, monitoring and control with emphasis on proper cultural practices and environmental safety. Topics are relevant to various segments of the environmental horticulture industry. Continuing education hours will be requested from Department of Pesticide Regulation. Seminars will be held at the UCCE Ag Building auditorium in Tulare. *Meeting topics and speakers and registration forms will be mailed soon.*

## Training Young Trees for Structure and Form

### New Teaching Video Available from UC ANR

*A new video is now available from UC's Agriculture and Natural Resources publication catalog, titled "Training Young Trees for Structure and Form" (#V99A). Developed by UCCE Horticulture Advisor, Larry Costello, for professionals in the tree care industry, this training video will be a valuable learning tool as we approach the winter pruning season. The following synopsis and review of the video appeared in a recent issue of Western Arborist magazine.*

### SYNOPSIS

This instructional videotape was developed to teach the basics of pruning young trees. It documents a 5-step process for training young trees. The video, shot over a 4-year period, shows the annual pruning response of young Raywood ash (*Fraxinus oxycarpa*) 'Raywood', Norway maple (*Acer platanooides*), southern live oak (*Quercus virginiana*), and sweetgum (*Liquidamber styraciflua*). In addition, trees that were either not pruned or pruned incorrectly are shown. To illustrate how to prune trees for clearance the video takes you to trees along streets, in parking lots, and parks and yards. The video covers all the pertinent questions related to pruning young trees. It emphasizes three primary reasons to train young trees: improve structural strength,

reduce maintenance costs, and increase tree longevity. It provides guidelines on how much to prune and when to prune. Pruning conifers requires some modifications to the 5-step process and these are presented. A 4-page supplement summarizes key points, contains a glossary and references, and lists 30 review questions.

The 38-minute video is available from the UCCE Office in Tulare and is well worth the \$50.00 price (#V99A). Order by calling (559) 685-3303.

- By Greg McPherson, Western Center for Urban Forest Research and Education

# Horticulture Vocabulary

**Accent plant** – Plant used in a bed or border to emphasize contrasts of height, color, and/or texture.

**Annuals** - Plants that live only one growing season. They germinate from seed, grow foliage, flower, set seed, and die within one year. Winter annuals such as pansies and snapdragons grow in cooler weather, while summer annuals such as marigolds and zinnias prefer the heat.

**Biennials** - Plants that normally require two growing seasons to complete their lifecycle. Vegetative growth occurs the first year; flowering and fruiting (seeding) occur in the second season. Foxgloves are biennials.

**Bolt** - Herbs or vegetables that flower prematurely. A stress such as sudden hot weather usually triggers this growth rush. Cilantro, lettuce, and spinach commonly bolt.

**Chlorosis** - Leaves that yellow because they lose chlorophyll from low light levels, disease, or mineral deficiency. Iron induced chlorosis (yellow leaves with green veins) is very common.

**Dormancy** – Period of inactivity or physiological rest, especially in bulbs, buds, seeds, and spores.

**Herbaceous plants** – Non-woody plants that die back (lose top-growth and become dormant) at

the end of the growing season (usually autumn), overwinter by means of underground rootstocks, and resume growth in spring.

**Perennials** - These are plants that live for more than two years. Usually refers to herbaceous plants and not woody trees or shrubs.

**Phloem** - Vascular tissue that transports synthesized carbohydrates from leaf veins to the rest of the plant.

**Prostrate or procumbens** – Describes a plant with spreading or trailing stems lying flat on the ground. It's a clue that the plant is a groundcover or would work in a hanging basket.

**Rosette** – A dense whorl of leaves arising from a plant's central point usually near ground level.

**Suckers** – *I could have fun here.* Shoots that arise below soil level usually from roots or shoots that arise from rootstock of a grafted plant.

**Specimen plant** - Ornamental tree or shrub grown in a prominent position in the landscape, where it can be viewed from many angles.

**Venation** – Vein patterns in leaves, such as parallel or netted venation.

**Xylem** – Vascular tissue that transports water and mineral nutrients from roots to shoots; the primary component of wood in trees.

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## Useful Websites

<http://www.ipm.ucdavis.edu>

UC Integrated Pest Management website provides information on a variety of topics useful to the landscape industry and it is easy to use.

<http://www.wcisa.net>

Western Chapter for the International Society of Arboriculture offers information about trees and specifically the pruning of trees. Learn about membership and certification.

<http://homeorchard.ucdavis.edu>

The California Backyard Orchard is a UC resource for fruit and nut crops.

<http://cetulare.ucdavis.edu/mg/mg.htm>

The Master Gardener webpage is designed to help home gardeners in Tulare and Kings counties get information. Weekly newspaper articles on a wide variety of landscape topics can be accessed through this website.

# Pruning for the New Millennium Seminar

Visalia Convention Center • 303 E. Acequia Avenue, Visalia, CA 93291

Sponsored by: WCISA - Western Chapter of International Society of Arboriculture and STIHL®

Pruning is the most practiced aspect of Arboriculture. Unfortunately, pruning practices among arborists are quite variable and there is little awareness or adherence to current industry standards. This workshop will address the theoretical and practical aspect of pruning for structural development, hazard reduction, and aesthetics. Emphasis will be placed on minimizing damage to the tree.

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## Friday, September 27, 2002

7:30-8:00am	<b>Registration</b>	
8:00-8:15	<b>Welcoming Remarks</b>	
	<i>Michelle Le Strange</i>	
	University of California Cooperative Extension, Farm Advisor	
	Tulare & Kings Counties	
8:15-9:20	<b>Pruning Your Trees for Structure and Form</b>	
	<i>Larry Costello</i>	
	University of California Cooperative Extension, Horticulture Advisor	
	San Mateo-San Francisco Counties	
9:20-9:35	<b>Break</b>	
9:35-10:45	<b>Tree Pruning: Impacts on Health and Safety, Current Standards, and Legal Aspects</b>	
	<i>Bruce Hagan</i>	
	California Department of Forestry, Urban Forester	
10:45-12pm	<b>Pruning: The How and What</b>	
	<i>Robert Phillips</i>	
	Climbing Consultant and President Elect WCISA	
12:00-1:00	<b>Lunch at the Convention Center - Sponsored by Stihl</b>	
1:00-3:30	<b>Field Training: Low Impact Climbing</b>	
	<i>Robert Phillips</i>	
	Climbing Consultant and President Elect WCISA	
3:30pm	<b>CEU Sign-in</b>	Certified Tree Workers = 6 CEUs Certified Arborist = 6 CEUs Certified Utility Specialist = 3 CEUs

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## REGISTRATION FORM: Pruning for the New Millennium 9/27/02

Name: _____	Chapter Membership Number: (CH- _____)
Organization: _____	
Address: _____	{Work} {Home} circle one
City: _____	State: _____ Zip: _____ Phone: _____
Credit Card or Check #: _____	
Circle type: MC VC AMX	Expiration date: _____ Amount Paid: _____
Signature: _____	

We Accept Visa, MasterCard and American Express

Maximum capacity for this meeting is 150 attendees

Registration fee **on or before** 9/20/2002

Registration fee **after** 9/20/2002

\$ 45 Western Chapter Members

\$ 55 Non-Western Chapter Members

\$ 55 Western Chapter Members

\$ 65 Non-Western Chapter

**No refunds**

**Confirmations will not be sent unless specifically requested**

**Make checks payable to:**

**WCISA**

235 Hollow Oak Drive  
Cohasset, CA 95973

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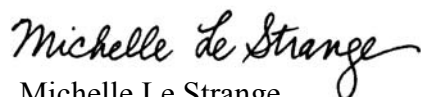
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# **Landscape Notes**

## **A Newsletter for Professionals of Environmental Horticulture**

*September 27<sup>th</sup> – Tree Pruning Seminar*



Michelle Le Strange  
Farm Advisor  
Tulare & Kings Counties

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U.S. Department of Agriculture, University of California, and Tulare County Cooperating