updated Water Use Classification of Landscape Species (WUCOLS) chart to select low water use plantings that will thrive in your region. Good soil preparation and mulching also contribute to efficient water use. Soil with high organic content will retain moisture rather than repel it. Prepare and maintain soil with compost to raise organic content and condition the soil. Mulching helps retain moisture in the soil and has other benefits including weed control and soil consistency. Mulch liberally in areas of high solar exposure to keep moisture from evaporating away.

Low Waste Generation

Landscape professionals may be less familiar with waste issues, but they are no less important. "Green" waste, much of it coming from landscape maintenance, continues to be a large part of what our communities throw away. Most everyone understand the "ethic" of recycling and participates in recycling programs in their communities. This same concern for waste reduction should also extend into the yardscape by using low-waste plantings and practices that will reduce waste generation.

First, use low waste plantings in the landscape. Select drought-tolerant slow growth plantings appropriate for the region. Also consider placement and spacing. Don't crowd landscaping where minimal growth will require pruning. Proper spacing between plants allows more natural growth, minimizing the need for excessive pruning.

Make every attempt to prune conservatively. Pruning is a large contributor of waste when performed in an excessive and haphazard fashion. Pruning should be limited to maintain controlled, but natural growth patterns. "Topping" or "shearing" where large quantities of material is removed is wasteful and unhealthy.

Using shredded green waste as a mulch is a great reuse of waste materials. Mulching provide a variety of benefits, including weed prevention, moisture retention, mud abatement and erosion control. As an added benefit, when organic mulch decomposes, it will condition the soil and add important nutrients.

Finally, an important step in reducing waste generation is to reduce turf areas. Grass lawns are a heavy contributor of waste, especially during the warmer months. By reducing turf area, maintenance, waste disposal and irrigation requirements can be significantly reduced. Removal of small, irregular shaped turf areas removes difficult mowing transitions, which results in easier maintenance. Replace grass with slow-growth, drought-tolerant ground covers for attractive landscaping with significantly lower maintenance requirements and costs.

Marketing Resource Efficiency

Becoming a "green" (environmentally conscious) landscape professional carries more weight in the marketplace these days than in the past. Not only are more residents and businesses aware of the importance of saving water and recycling, but many have adopted "green" practices themselves. Landscape professionals can use this new awareness to position themselves as an environmentally friendly service. Begin to cultivate an "attitude" within your company that resource efficient landscaping is "good for business" environmentally, economically and competitively. Begin to integrate some or all of the practices discussed here into company practices. You will find that new and existing customers will respond positively to practices that help the environment and make economic sense. For additional information on Resource Efficient landscapes, contact the Landscape Management Outreach Partnership (LMOP) at (925) 906-1801.

HAROLD STODOLA
RESEARCH SCRAMBLE
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AUGUST 2001  HOLE NOTES 31
the turf samples were cooled to 10° F. At this temperature there was a complete loss of turf that were wintered under the wood fiber and wood fiber under plastic covers. Only the turf that was wintered under the closed cell with backing cover had appreciable survival. It is likely that the turf under this cover still maintained much of it's winter hardiness due to a delay in growth associated with the cooler soil temperatures under this cover.

Conclusions

This first year of the winter cover trial revealed some of the benefits of winter covers beyond protection from winter injury. Although we did not have conditions that promoted dessication or crown hydration, this trial demonstrated the role of covers in spring green-up and maintenance of winter hardiness. One of the areas of interest in this trial was the value of water barrier covers. On a turf quality basis, they performed well as a whole. Of these the closed cell foam with the light barrier backing gave the best overall quality. The other cover of note was the wood fiber which excelled in the exposed green and performed well otherwise. The data from this trial suggest that there is little concern for a decrease in effectiveness between new and 2 year old wood fiber covers. Even if you are on a budget and would like to use a cover, the generic green tarp was comparable to the other covers included in the study and yielded significantly better quality than the uncovered turf.

The freezing tolerance of turf coming out from winter covers is another important consideration when considering a winter cover. This spring proved to be quite mild once the snow had finally melted so we did not see freezing injury associated with winter hardiness. However, next year could be entirely different. The winter hardiness (or lack of) is also related to the decline in turf quality following cover removal. The reduction in turf quality was observed in this study but only to a limited extent. Had we suffered severe freezing temperatures following cover removal we would have seen a greater reduction in turf quality.

It is important to remember that the results presented here are on the basis of one years of research and was subjected to the weather of a single winter. Products that worked well under these conditions may not perform the same during a winter with little snow and extreme temperatures.

<table>
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<th>Cover Type</th>
<th>39° F</th>
<th>21° F</th>
<th>10° F</th>
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<tr>
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<td>7.0</td>
<td>3.8</td>
<td>0.0</td>
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<tr>
<td>Wood Fiber</td>
<td>6.7</td>
<td>1.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Wood Fiber (2 year)</td>
<td>7.7</td>
<td>3.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Wood Fiber (Black)</td>
<td>6.7</td>
<td>0.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Closed Cell</td>
<td>7.0</td>
<td>2.8</td>
<td>0.3</td>
</tr>
<tr>
<td>Closed Cell/Backing</td>
<td>7.7</td>
<td>4.3</td>
<td>1.8</td>
</tr>
<tr>
<td>Woven Plastic</td>
<td>6.3</td>
<td>3.3</td>
<td>0.5</td>
</tr>
<tr>
<td>White Blanket</td>
<td>7.0</td>
<td>2.5</td>
<td>0.0</td>
</tr>
<tr>
<td>Generic Green Tarp</td>
<td>7.3</td>
<td>4.3</td>
<td>0.3</td>
</tr>
<tr>
<td>Clear Plastic</td>
<td>7.0</td>
<td>4.5</td>
<td>0.5</td>
</tr>
<tr>
<td>Wood Fiber/Clear Plastic</td>
<td>7.3</td>
<td>3.3</td>
<td>0.0</td>
</tr>
</tbody>
</table>

Quality rating (0-9; 9 = best quality, 0 = all dead) of samples of creeping bentgrass wintered under different winter covers when subjected to freezing temperature.
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- Charles Swidnoll

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Six Principles for Landscape Waste Reduction

As our communities strive to find new ways to reduce waste, green industry professionals can play an important role by reducing the quantity of waste they generate at the job site. As many landscape professionals know, this can be accomplished through adopting one or more of the following "Principles" for landscape waste reduction.

Healthy Soil: Good soil supports healthy plant growth and diminishes the need for excessive irrigation and fertilization. A good soil consists of soil clusters (aggregates), air space, and organic matter holding a variety of important micro-nutrients. In combination, these factors produce a soil that retains moisture, soil air, and nutrients that will support healthy growth of the landscape. Healthy soil must be created and maintained. By adding compost (humus) or by mulching, poor soil can be transformed over time into a healthier growing medium for landscaping.

Use Waste Efficient/Low Maintenance Landscaping: Select slow growth plantings that require less maintenance. How do you find slow growth plants? Drought tolerant plants, by their nature, are also slow growth and produce less waste. Consult the "Water Use Classification of Landscape Species" (WUCOLS) list to determine which drought tolerant varieties will grow best in your region. In addition to selecting slow growth/drought tolerant plants, consider placement and spacing. Don't place plantings in tight spaces where minimal growth will require pruning. Proper spacing between plants allows more natural growth, minimizing the need for excessive pruning.

Irrigate Efficiently and Limit Fertilization: Excessive watering and fertilization results in faster growth, requiring more maintenance and disposal of waste. Use water-efficient irrigation equipment such as drip or low output sprinkler heads and water landscaping according to specific needs. Also use the needs of landscaping to determine how much and when to fertilize. Normally, moderate applications of fertilizers in spring and fall are all that is needed to support healthy and attractive growth.

Shred and Mulch! Using shredded green waste as a mulch makes a lot of sense, especially if you have a large quantity of green waste material with wood content. Mulching provides a variety of benefits, including weed prevention, moisture retention, mud abatement, and erosion control. As an added benefit, when the mulch decomposes, it will help condition the soil and add nutrients.

Prune Conservatively: A large contributor of waste is excessive and haphazard pruning of shrubs and trees. Pruning should be limited to maintain controlled but natural growth patterns. "Topping" or "shearing" where large quantities of material are removed is wasteful and unhealthy. It also will encourage new and excessive growth.

Limit Turf Areas: Grass lawns are heavy contributors of waste, especially during the warmer months. Lawns also require large amounts of water. By removing or reducing turf areas, maintenance, waste disposal, and irrigation requirements can be reduced. Removal of small, irregular shaped turf areas eliminates difficult mowing transitions which results in easier maintenance. Replace grass with slow-growth, drought tolerant ground covers for attractive landscaping with significantly lower maintenance requirements and costs.

Local government and waste management agencies are working hard to find solutions for cutting waste. Landscape generated waste continues to be a significant part of waste sent to the landfill. Contra Costa, Napa, and Solano Counties have joined with the California Integrated Waste Management Board (CIWMB) to form the Landscape Management Outreach Partnership (LMOP). The partnership's goal is to promote the practices described here to assist professional landscapers and other large generators to reduce waste. If you would like additional information on green waste reduction, please contact the Partnership at (925) 906-1801. For additional information about green waste reduction, visit the CIWMB website.
In St. Andrews, Scotland, the "22 Noblemen and Gentlemen of the Kingdom of Fife" formed the Society of St Andrews Golfers. (1754).

The founders motives were twofold. They were creating a private golf society to enjoy the sport and the conviviality that always followed. But they also planned to stage an annual contest for a significant trophy which they hoped would restore the reputation of St Andrews as the home of golf, and stimulate a return to the glory days when royalty and religious leaders were regular visitors.

In elegant script, beneath the names of the 22 original members, the first written record of the society which was to become the Royal and Ancient Golf Club of St. Andrews, reads:

"...the Noblemen and Gentlemen above named being admired of the Ancient and healthful exercise of the Golf, and at the same time having the interest and prosperity of the ancient city of St Andrews at heart, being the Alma Mater of the Golf, did in the year of our Lord 1754 contribute for a Silver club having a St Andrew engraved on the head thereof to be played for on the Links of St Andrews upon the fourteenth day of May said year, and yearly in time coming ..."

By the end of the 19th century golf, clubs throughout Britain looked to St. Andrews for guidance and the members of the R&A somewhat reluctantly agreed to take command of the rules of the game.

Their annual challenge followed an example established 10 years earlier by the Gentlemen Golfers at Leith—now known as the Honourable Company of Edinburgh Golfers and universally recognized as the world's oldest golf club.

St. Andrews' reputation was later enhanced by the granting of royal patronage to the R&A by King William IV in 1834 and the building of an imposing clubhouse 20 years later.

By the end of the 19th century golf, clubs throughout Britain looked to St. Andrews for guidance and the members of the R&A somewhat reluctantly agreed to take command of the rules of the game.
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While the Golf Course Superintendents Association of America (GCSAA) bears little semblance to its formative years, the basic tenets that provided the impetus for organizing in 1926 are still alive today. GCSAA is the professional association for the men and women who manage and maintain the game's most valuable resource — the golf course.

GCSAA came into being because golf course superintendents saw a need to network and share their experiences on the maintenance and upkeep of golf courses. The association would be called upon to provide information to its members, represent their interests and conduct education on their behalf. The Depression and World War II were obstacles to the growth of GCSAA, but its members persevered in extraordinary ways to keep it alive. Personal financial support, publishing a magazine from a member's home and loans from local chapters kept this tight-knit association together. Prosperity and the growth of golf put the association on strong footing. Today, GCSAA and its members are recognized by the golf industry as one of the key contributors in elevating the game and business to its current state.

GCSAA's 21,000 members are comprised of superintendent, assistant superintendent, student, educator, affiliate and retired classifications. The association has 102 affiliated chapters, with 65 countries having a GCSAA member in residence. Day-to-day affairs are directed by the chief executive officer that reports to a nine-person board of directors elected by the membership. Elected officers include a president, vice-president and secretary/treasurer, all of which are one-year terms. The association's strength lies in its participatory form of governance where committees and resource groups comprised of members bring forward recommendations for programs and services to the board of directors.

Three different companies comprise GCSAA, however all share the same executive management and support staff. The parent company (GCSAA) is a tax-exempt 501(c) 6 organization responsible for core association activities. The GCSAA Foundation is a tax-exempt 501 (c) 3 charitable organization devoted to education, research and historical preservation initiatives. Founded in 1956, the foundation has supported nearly 200 research studies with a combined value of more than $1 million. It has also provided more than $2 million in scholarships to 1,200 students. GCSAA Communications Inc., is a for-profit corporation designed to advance core association activities through programs and services such as Golf Course Management magazine. The association is funded primarily through its Conference and Show (education fees and exhibitor fees), sponsorships, donations, advertising and member dues.

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Paul Eckholm, CGCS, Heritage Links Golf Club. epeckholm@msn.com

<table>
<thead>
<tr>
<th>Company/Person</th>
<th>Commitment</th>
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<td>Vacuum</td>
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<td>Rob Panuska</td>
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<td>Three Mowing Units</td>
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