

A RIVER-FRIENDLY LANDSCAPING GUIDE TO

MULCH & GRASSCYCLING



SAVE MONEY, CONSERVE WATER, AND SUSTAIN HEALTHY LANDSCAPES



RiverFriendly.org

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Mulch — Strange name for food; we feed the soil organisms with mulch, they in turn feed our plants! A wondrous relationship.

– Christy Tveit, Landscape Architect,
CT Design Studio, Nevada City, CA



MULCH

is any material spread evenly over the surface of the soil to enhance the growth of plants and the appearance of the landscape.

You can create beautiful, healthy landscapes that control weeds, conserve water and reduce labor costs by using plant trimmings as mulch. Grass clippings, leaves and tree prunings that are chipped or shredded are called “recycled” or “greenwaste” mulch. We need to start thinking of these as a “green resource,” not waste.

In nature, leaves and needles fall to the ground, creating an organic layer that protects and builds the soil. Recycled mulch produced from local plant debris can offer the same advantage to the landscapes you maintain. Using recycled mulch recognizes the value of plant trimmings as a natural resource and an important tool for home gardeners and professional landscapers.

RIVER-FRIENDLY LANDSCAPING...

Means working in harmony with the natural ecosystem of the Sacramento region to foster soil health, reduce runoff and pollution, prevent and reuse plant waste, and conserve water and other natural resources.

Mulch is a very important practice in the design, construction and maintenance of landscapes and gardens. The benefits to you, the landscapes you care for and our natural resources are many...



SAVE TIME & MONEY

Using mulch can benefit your maintenance operations by:

- Reducing weeds, especially annuals, by as much as 90%, significantly reducing labor
- Decreasing the costs of buying and applying herbicides
- Reducing the need for trimming grass around trees and poles
- Conserving water and cutting the cost of irrigation
- Creating a system of natural nutrient cycling

Making your own mulch on site also saves time and cost of trucking plant debris to the landfill as well as the expense of buying and transporting commercial mulches. It also reduces your “carbon foot print.”

PROMOTE HEALTHY PLANTS

Mulch is an important integrated pest management (IPM) practice, nurturing healthy, pest-resistant plants by:

- Reducing competition from weeds
- Keeping soil moist
- Adding organic matter that feeds beneficial soil organisms
- Preventing soil compaction and improving soil structure
- Insulating plant roots against temperature extremes
- Holding seeds, fertilizers and topsoil in place and reducing splashing of water and soil that might contain disease causing agents

In summer, 2 inches of mulch cuts water loss by 20% and lowers temperature in the top 4 inches of soil by 10 degrees. Young trees also establish themselves better and grow stronger roots under mulch than under bare ground.

PROTECT THE ENVIRONMENT BY REDUCING WASTE

Plant debris accounts for approximately 7 percent of what is thrown away annually in California. By using plant trimmings as mulch, landfill space is conserved, local soils are improved and healthier landscapes are created, naturally.

MINIMIZE SOIL EROSION

Mulch is also a very important best management practice (BMP) for controlling soil erosion. Wind, rain,

and irrigation can carry away exposed soil particles, turning valuable resources into a pollutant. In fact, soil sediment is the single greatest pollutant in our waterways. Covering the soil with a layer of mulch helps keep soil in place when exposed to wind and rain. It can also reduce storm water runoff velocity, helping to reduce flooding and minimizing the potential for creek channel erosion. Mulching is a critical practice during construction where trees, shrubs, and other plants that hold the soil in place with their roots have been removed. The benefits of mulch continue over the long run even after construction has been completed.



LOOK GOOD WITH RECYCLED MULCH

Mulching adds value to a landscaped site, in the eyes of neighbors, real estate agents and homebuyers. Recycled mulch ranges from clean wood chips of a uniform size and color to mixed plant debris with particles of various size and colors. Many Sacramento area parks are currently using recycled mulch with success. It ages to a uniform silver color for a natural and attractive look. To get started, use recycled mulch to control weeds in less visible areas, such as behind buildings, or add a thin layer of commercial mulch over recycled mulch to create a more uniform appearance.



MULCH BASICS

- 1 **BEFORE APPLYING MULCH, REMOVE WEEDS, LIGHTLY SCRATCH THE SOIL SURFACE, AND WATER THOROUGHLY.** You'll get the best weed control when you weed first then spread the mulch. And it is often easier to wet the soil before applying fine textured mulches.
- 2 **REPLACE GRASS WITH MULCH UNDER TREES AND AROUND POLES.** Mulching under trees to the drip line minimizes competition for water and nutrients from grass and mimics the way trees grow in nature. It simplifies mowing and can reduce trimming operations and labor. In addition, mulching around poles, trees and trunks and over surface roots prevents damage from mowers and weed eaters.
- 3 **KEEP MULCH 6-12 INCHES AWAY FROM THE BASE OF TREES AND SHRUBS.** Tree trunks are not suited to wet conditions. Placing mulch so that you can see the root flare keeps the trunk dry and reduces the risk of damage from disease, insects, and rodents.
- 4 **CHOOSE THE APPLICATION RATE THAT WILL GIVE YOU THE BEST RESULTS.**
 - **Apply a layer that settles to 2-4 inches deep.** This is the best general application rate, especially for use in planting beds.
 - **Fine Mulch: Apply no more than 2 inches.** Don't allow fine mulch to become compacted as this may act as a barrier to air and water moving into the soil. Thin layers of fine mulch (particle size of half inch or less) are less likely to impede air and water. Fine mulch decomposes more quickly improving soil quality, but will need to be replenished more often than coarse textured woody mulches.
 - **Coarse Mulch: Use 4-6 inches or more to control weeds in open spaces.** Coarse mulch is best for weed control; it prevents annual weed seeds from germinating. Weeds that do sprout are easier to remove. For maximum weed control, replenish mulch once a year. Typically, coarse mulch also performs better for reducing water runoff than fine mulch.
 - **You can have too much of a good thing:** Use lesser amounts on poorly drained soils.
 - **Keep mulch on top of the soil to prevent tying up nitrogen.** Woody material that is incorporated into the soil will temporarily inhibit the soil's ability to supply nitrogen to the plants. However, according to research, mulch only uses nitrogen at the soil surface, and not from the root zone. If you do not turn mulch into the soil, you'll prevent nitrogen drag.
- 5 **KEEP MULCH AND VEGETATION 2-3 INCHES FROM BUILDING FOUNDATIONS.** This will reduce harboring ants and termites that may ultimately enter a building.

RECYCLED MULCH TYPES

AND HOW TO USE THEM SUCCESSFULLY

Mulches created from plant materials have the advantage of decomposing and adding organic matter to feed the beneficial organisms and improving the soil structure. There are many types of organic mulches that vary in cost, appearance and longevity.

Bark has long been sold commercially and is made from lumber and paper mill byproducts. Bark tends to have a uniform size and appearance, but does not readily supply nutrients. It also comes from distant forests and is relatively expensive.

Recycled mulch is becoming more readily available, is locally produced and is less expensive to purchase. It can be produced on site and can sometimes be obtained free from arborists, utility companies or parks. It tends to be less uniform in appearance, but supplies a broader array of nutrients to the soil.

When considering the use of colored or dyed mulch (for example, red, brown, black), avoid introducing toxic chemicals into the landscape by determining the composition of the dye used (for example, vegetable-based, organic pigments) and the type of material used for the mulch, since the source of most dyed mulches is recycled wood.

Here are some common recycled mulches and recommendations for using them with success. Consider that sometimes blending two or more products provides you and your clients with the benefits of each.



CHIPPED OR SHREDDED WOOD WASTE from used pallets or used lumber is an attractive mulch on paths and picnic areas. The nails and other metal are removed and the pieces can be colored to look like pine, hardwood or cypress. Waste wood breaks down very slowly and releases insignificant amounts of nutrients to the soil.

LONGEVITY: Long

RECOMMENDATIONS:

- Use on paths or at construction sites to reduce compaction from heavy foot traffic or heavy equipment.



WOOD CHIPS AND SHAVINGS can be made from many kinds of trees and make excellent mulch. They are attractive and stay in place, but may turn silver on the surface more quickly than bark. Wood chips are sometimes available for free, usually in large quantities, from utility or tree companies, but not always on a regular basis.

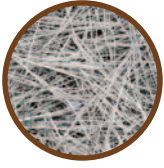
LONGEVITY: Medium Long

RECOMMENDATIONS:

- To keep wood chips looking best, rake every year and add a new layer every 2-3 years. Before you buy, determine how the chips have been stored and check for a sour smell that signals chips haven't been stored properly.

RECYCLED MULCH TYPES

AND HOW TO USE THEM SUCCESSFULLY



PINE NEEDLES don't pack down to form mats and they resist decomposing. Pine needles are light and usually weed-free. Although pine needles don't absorb water, they do let it trickle through to reach the soil surface. Pine needles have a low pH and are traditionally used around acid loving plants even though they don't tend to significantly impact the soil's pH. Use with caution around structures since dry needles can be flammable under certain conditions.

LONGEVITY: Medium Long

RECOMMENDATIONS:

- Spread 3 inches deep around evergreens, strawberries, azaleas, and other acid-loving plants



COMPOST is plant and other organic matter that has gone through a controlled decomposition process. It provides many valuable nutrients and improves soil structure. Used as mulch, it may not control weeds, because seeds can germinate and grow in the compost. This is especially true in windy areas, where seeds can blow on to compost and grow. Recent research indicates, however, that compost used as a mulch is very effective for controlling erosion.

LONGEVITY: Medium

RECOMMENDATIONS:

- Apply a layer of coarse, woody mulch on top of the compost for better weed control
- Select a particle size for aesthetics
- Replenish annually
- Routinely apply compost over coarse mulch to improve soil quality



MIXED GREENWASTE MULCH provides a broad range of nutrients and trace elements essential to build healthy soil. It can be any combination of the materials listed above plus chipped brush, and other plant trimmings. You can produce it on site with a chipper/shredder. It settles more quickly than pure bark or wood because the leafy material breaks down rapidly. This decomposition allows nutrients to be recycled back into the soil.

LONGEVITY: Medium

RECOMMENDATIONS:

- Ask your source if the mulch has been composted and for how long. Composting the mixed plant debris at high temperatures destroys weed seeds and disease-causing organisms.
- For best color and maximum weed control, replenish every year.
- Sift out fines for better weed control and air movement to the root zone or leave them in for nutrient and organic matter additions to the soil.
- Use for erosion control with or without seeding. Roughen slopes before applying. Distribute evenly to a depth of not more than 2 inches.

Applying compost (green mulch) is a proven way of retaining moisture around the trees and other plants, minimizing weeds and returning nutrients to the soil. This offers the homeowner a groomed look and more time to enjoy their yard.

—John Inglett, Western Tree Nursery

RECYCLED MULCH TYPES

AND HOW TO USE THEM SUCCESSFULLY



LEAVES are plentiful, and readily break down creating natural mulch that contains valuable trace elements. Leaf drop is nature's way of returning nutrients and organic matter to the soil. However, leaves can be carried away by heavy rain or wind and dry leaves can be flammable under certain conditions.

LONGEVITY: Short

RECOMMENDATIONS:

- Let leaves lie where they fall, returning nutrients and organic matter to the soil. Select sites under tree and shrub canopies and at least 10 feet away from hard surfaces and storm drains, to be used as a leaf repository.
- Chop leaves that are resistant to decomposition, such as magnolia, with a mower. Distribute chopped leaves 2-3 inches deep, mixed with grass clippings and other trimmings if you have them, under a tree's dripline.
- If using whole dry leaves, apply about 6 inches deep.
- Replace every year.



Fallen leaves decompose, adding nutrients to the soil. The photo on the left was taken 6 months before the photo on the right.

Photos by Dave Roberts



GRASS CLIPPINGS are a good source of nutrients, including nitrogen, because they decompose rapidly. Leaving the clippings on the lawn is the best use. They can be used as mulch when they are too long to leave on the lawn, but they are not considered as attractive as other mulches and, if applied too thick, they can form a mat. **For detailed information on grasscycling, see the section beginning on page 11.**

LONGEVITY: Very Short

RECOMMENDATIONS:

- Hide clippings under a broadleaf ground cover. Evenly disperse clippings over the canopy, then rake lightly so they settle to the soil surface.
- Mow before grass or weeds have gone to seed and use as a mulch in a vegetable garden unless you have applied pesticides that are not labeled for vegetable gardens.
- Avoid using clippings from invasive turf species, such as kikuyu or Bermuda grass.
- Avoid using pesticides that make clippings undesirable as mulch. As determined by the US EPA, picloram and clopyralid are especially resistant to decomposition and can contaminate compost or mulch made from grass treated with these products.



Photo by Cheryl Buckwalter

SHEET MULCHING

is a layered mulch system. It is a simple and underutilized technique for optimizing the benefits of mulch.

Sheet mulching can be used either in establishing landscape, or to enrich existing plantings. In both cases, mulch is applied to bare soil or on top of cut or flattened weeds. Trees, shrubs, herbaceous perennials and annuals are planted through the mulch, or a small area is left open to accommodate established plants.

SHEET MULCH CAN:

- Suppress weed growth
- Reduce labor and maintenance costs: weeds are composted in place
- Improve nutrient and water retention in the soil
- Encourage favorable soil microbial activity and worms
- Enhance soil structure
- Improve plant vigor and health, often leading to improved resistance to pests and diseases

STEP 1: Prepare the site. Knock down or mow existing vegetation so that it lies flat. Remove only woody or bulky plant material. The organic matter left will decay and add nutrients to the soil. Add fertilizers and amendments to this layer if a soil analysis indicates the need. Optional: “jump start” the decay of weeds and grass by adding compost or manure at the rate of about 50 lbs/100 square feet. Soak with water to start the natural process of decomposition. It is much easier to soak the ground now, before the remaining layers of mulch are applied.

STEP 2: Plant 5 gallon and larger plants.

STEP 3: Add a weed barrier. The next layer is an organic weed barrier that breaks down with time. It is essential that the barrier is permeable to water and air. Do not use plastic. Recycled cardboard, a thick layer of newspaper, or old carpets of natural fiber work well. Many paper companies offer recycled cardboard or paper in rolls of varying widths. Two or three layers may be required to achieve an adequate thickness. But, if the weed barrier is applied too thickly, the soil can become anaerobic. Overlap pieces 6-8 inches to completely cover the ground without any breaks, except where there are established plants you want to save. Leave a generous opening for air circulation around the root crown. Wet down the cardboard or paper barrier to keep it in place.

ADAPTED FROM: C.R. ELEVITCH AND K.M. WILKINSON, SHEET MULCHING: GREATER PLANT AND SOIL HEALTH FOR LESS WORK, PERMANENT AGRICULTURE RESOURCES AND GEOFF HALL, SHEET MULCH, SENTIENT LANDSCAPE, INC.

STEP 4: Layer compost and mulch. The top layer mimics the newly fallen organic matter of the forest. Good materials for this layer include chipped plant debris, tree prunings, leaves or straw. They must be free of weed seeds. Well decomposed, weed-free compost is also a good material but it should be spread directly over the weed barrier and covered with bulkier materials such as chipped tree prunings, to optimize weed control. In total, the compost/mulch layer should be 2-5 inches deep. Many materials suitable for the top layer often have an attractive appearance, making sheet mulch a versatile practice.

STEP 5: Plant. Punch a hole in the cardboard and place plants in the soil under the sheet mulch. Smaller plants can often be planted right into the mulch/compost layer. Add a small amount of compost around the rootball if compost has not been included in the top layer.

In most cases, the benefits of sheet mulching outweigh the costs. However, take care to prevent these potential problems:

- As with any mulch, do not pile materials up against the trunks or stems of plants to prevent disease.
- Especially during the dry season, small seedlings will need protection from snails and slugs that will seek cover under the mulch.
- Protect young trees from rodents with physical guards.

MULCH FOR EROSION CONTROL

Mulch is a highly recommended and often used method of stabilizing soil to control runoff and erosion. It is very effective at reducing runoff velocity and when combined with seeding or planting, mulch also:

- Aids plant growth
- Holds seeds and fertilizers in place
- Prevents birds from eating seed
- Insulates plant roots.

Compost can be used successfully for erosion control as an alternative to woody mulches, polymer based covers, hydromulching with fertilizer and silt fences. Compost berms can filter out 10 times the sediment of silt fencing and decreases the amount of sediments reaching nearby surface waters by 99 percent. What's more the compost

doesn't have to be removed from the site and its eventual integration into the soil continues to control erosion through improved soil structure and permeability.

Compost also compares quite favorably with synthetic blankets for stabilizing slopes. It reduces erosion and also increases vegetation establishment. And it is significantly less expensive.

For more information on using compost for erosion control, visit <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=118&minmeasure=4>.



Photo by Cheryl Buckwalter

Mulch is nature's version of a blanket for soils and plant roots. Whatever the plant materials, mulch serves to conserve soil moisture in the heat of summer, and protects soils from wind and water erosion. A good rule of thumb is to never, ever leave soil uncovered. Always make your soil bed!

– Soleil Tranquilli, Tranquill Gardens
Elk Grove, CA

APPLYING MULCHES

Spreading mulch is often a hands-on task, especially for home gardeners. For large-scale applications, options for applying mulch include:

PNEUMATIC BLOWERS. For large jobs that don't have dense plantings, mulch can be applied through a blower system. This works best for coarse materials since using a blower with fine mulch or compost can create a lot of dust. Look for companies that provide this service.

MULCH ON-SITE. Sometimes when chipping materials on site, the chipper can be moved and directed to blow the chips in the area where the mulch needs to be spread. This works best in open areas, rather than near buildings and planting beds. Block off a generous application zone to prevent workers or passersby from being injured.



Properly mulching trees and other landscaping with recycled chips containing all parts of the tree, versus bark

only, mimics nature's perfect process of returning vital nutrients to the soil. Stressors directly responsible for disease and insects, such as severely deficient soils and improper irrigation practices are reduced significantly. It may be the best thing you can do for your trees.

– Vicky Bartish, Certified Arborist
Shades of Green Horticulture,
Newcastle, CA

REDUCING THE SPREAD OF PLANT DISEASES

The spread of disease due to the use of mulch from diseased pruning is highly unlikely. In fact, using organic materials can be helpful in controlling plant disease in landscapes, especially if the following precautions are taken:

- Keep mulch away from tree trunks or the crowns of woody ornamentals
- Keep mulch on the soil surface — this reduces direct contact between disease organisms and plants
- Consult an arborist that can help you diagnose problem trees or shrubs before you chip
- In general, if trees are clearly diseased, avoid using their prunings for mulch — instead, they can be composted to kill disease-causing organisms or used for biofuel
- Tools and machinery which are used to prune, cut or chip diseased trees should be cleaned and sterilized before use on uninfected trees

Special Notes for Trees Infected with:

Dutch Elm Disease. This is a significant disease of elms in the Central Valley and surrounding areas. Prune elm trees from November to early March when possible. The beetles that spread the disease are active at other times and pruning wounds created then attract the beetle and increase the spread of the disease. Any trees found to be infected should be pruned 18 inches below the infection point whenever possible, to eliminate the infected part of the tree. In some cases, the tree must be removed. There are both preventive and therapeutic fungicide treatments available for elm trees to further reduce the infection and spread of Dutch Elm Disease.

Sudden Oak Death. Though common in areas closer to the coast, Sudden Oak Death is not established in the Sacramento area, so mulches made with local plant materials are unlikely to be infested with it. If you are planning to move mulch material from another county, consult with your local Agricultural Commissioner for possible restrictions.

HEALTH AND SAFETY

Preventing Fire

- Mulch spread over hillsides can reduce fire propagation; prevent erosion, and the growth of weeds and brush in cleared areas for up to several years. Coarsely chipped woody materials and prunings from on-site brush removals and vegetation clearing reapplied around hillside homes saves costs of removal, hauling and disposal.
- Apply 2-4 inches thick in landscape around homesites and 4-6 inches deep on slopes.
- Finely shredded redwood bark (gorilla hair) ignites easily. Use it only where people will not drop cigarette butts or matches.
- Store mulch in piles less than 8 feet high and separate out the fines to help prevent spontaneous combustion. Have a water source available. Don't mistake steam from a pile that is composting as smoke.
- Check with your local fire officials for vegetation removal requirements.

While creating beautiful landscapes for my clients, I use this as an opportunity to inform them about the many benefits of including mulch in their project. Mulch helps to insulate roots of trees and shrubs from the heat of the sun while conditioning the soil and minimizing weed growth. Yes, mulch adds the finishing touch and it is good for the health of the landscape and our environment.

– Dave Rhodes, President
Rhodes Landscape Design Build, Sacramento, CA

Preventing Allergic Reactions

Always wear safety gear such as gloves and boots or pollen masks when handling mulch. Loading, spreading or turning mulch can trigger allergic reactions in people or cause serious injury. This is especially true with shredded redwood, mulch from sycamore trees, or mulch that has been stored too long. Keep your eye out for poison oak and do not use in recycled mulch.



GRASSCYCLING...

Means leaving the grass clippings on the lawn after mowing so they decompose and release their nutrients into the soil.

Many home owners, successful landscapers and turf professionals have made grasscycling a central part of their operations. For landscape professionals, grasscycling is an easy way to begin offering River-Friendly Landscaping services to your clients.

In our climate, a lawn can be costly to maintain, wasteful of precious resources and a source of pollution. Eliminating large expanses of non-functional turf and designing only small lawns that are used for play and relaxation is essential to landscaping in an environmentally friendly manner — so is managing all turf to conserve resources while minimizing environmental impacts.

GRASSCYCLING IS AN IMPORTANT STEP IN RIVER-FRIENDLY LANDSCAPING

By grasscycling, you protect the environment by helping:

- Conserve landfill space – and the fuel to haul it there
- Reduce fertilizer and pesticide runoff
- Preserve natural resources

SAVE TIME AND MONEY

Grasscycling is a faster, cheaper and easier way to maintain a healthy lawn. Grasscycling:

- Reduces mowing time by as much as 20 minutes per hour.
- Decreases hauling time
- Cuts disposal fees
- Lowers fertilizer costs — studies have shown that grasscycling can provide 30 - 75% of the nitrogen needed for turf grass.

For landscape professionals, grasscycling may also reduce injuries, absences, and related costs. A 2,000-square foot lawn in California generates about 15 pounds of clippings per mowing. Over the course of the day, grasscycling eliminates a lot of lifting for you or your crew.



GRASSCYCLING BUILDS HEALTHY TURF AND SOIL

Grasscycling returns nitrogen and other nutrients to the soil, releasing them slowly. Grass clippings are a food source stimulating beneficial soil organisms that break down organic matter making nutrients available when plants need them. On most turf, you can use substantially less fertilizer. In addition, because clippings add organic matter, they build soil that retains more nutrients and water, plus resists erosion and disease.



GRASSCYCLING WON'T CAUSE THATCH

It's a widespread myth that grasscycling causes thatch. Research has shown that thatch is primarily dead grass roots and fibrous material created at the base of the plant, not leaf clippings. Excess fertilizer and irrigating only the top few inches of soil lead to shallow roots and increases thatch problems. Soil compaction also increases thatch.

The factor that most determines thatch is the species of grass. For information on turf grass species, please go to www.ipm.ucdavis.edu.

A small half-inch layer of thatch is actually beneficial to the lawn as it insulates the roots, minimizes water evaporation and helps prevent soil compaction. However, if the lawn has a thick layer of thatch (thicker than one inch), clippings won't decompose as efficiently. It's best to deal with any thatch problems before you start to grasscycle.

“As long as you call it green WASTE, most people will want to get rid of it. We need to start referring to it as green RESOURCE and folks may see more value in using it.”

– Dave Roberts
Roberts Landscape

THREE SIMPLE STEPS TO GRASSCYCLING

① **Mow often and mow dry**

Be aware of the optimal conditions for grasscycling. Grasscycling works the best when the grass surface is dry and the clippings are short. Mowing no more than 1/3 the leaf blade minimizes the stress on the lawn and produces shorter clippings. However, most professionals find it difficult to follow the 1/3 guideline since they mow according to a schedule, not grass height. Try to schedule mowing on days the lawn is not watered or later in the day when the grass tends to be dry.

② **Maintain and adjust your equipment**

Sharpen your blades often and keep them clean and balanced. A clean cut limits water stress, lowers the chance of disease entry and minimizes brown tips. Additionally, a clean mower deck helps keep clippings from forming clumps and for the professional, it reduces the spread of weed seeds and disease from one landscape to another. Use a mulching type blade for best results.

③ **Leave the clippings on the lawn!**

GRASS TOO TALL?

- Mow more than once. When the costs of time, landfill fees, soil and turf health are considered, mowing two or more times can still be less expensive than bagging and disposal.
- Overlap previously mowed row more, cutting a small swatch each time.
- Tall growth is generally only a problem in the spring/fall when grass is growing rapidly. However it can signal over watering or excess fertilizer. Consider using an organic or slow-release fertilizer.
- Raise the blade height to 3 1/2 to 4 inches and gradually lower it over future mowings back to 3 inches.
- Be flexible with your fertilization schedule. Keeping grass green while minimizing growth may mean little or no spring fertilizers and the use of slow release fertilizers in the fall.



GRASS TOO WET?

- Schedule irrigation to be done 2 days before you mow for maximum dryness. Or, time your irrigation for the days you are not mowing.
- If you have a choice, mow later in the day, after the grass has had a chance to dry.
- If you must mow early in the day and the lawn is damp, drag a hose across the lawn to knock water down to the root zone before mowing.

CLIPPINGS FORMING WINDROWS?

- Mow again with a crosscut to chop and disperse clippings.

CLIPPINGS CLUMPING UP?

- Clean under the mower deck. Keep blades sharp and balanced.
- Mow when the lawn is not wet.
- Try operating the mower at a slower speed.
- Overlap cut more.

LEAVES ON THE LAWN?

- Often you can shred leaves with your mower and leave them on the lawn. This works well with a light layer of dry, brittle leaves which will be finely chopped and forced between the grass blades to the soil surface.
- A thin layer of chopped leaves – no thicker than ½ the height of the grass blade – is not noticeable and adds nutrients when the recycled leaves decompose.

AND WHEN YOU JUST CAN'T GRASSCYCLE...

- Compost the clippings on site. They are a natural source of nitrogen and readily decompose, especially when mixed with carbon-rich materials such as dried leaves.
- Spread over the surface of the soil as mulch. Don't apply too thick as they can form a mat. Mow before weeds have gone to seed and avoid using clippings from invasive turf species. And don't use pesticides that make clippings undesirable in compost or as mulch. Picloram and clopyrliid are especially resistant to decomposition and can contaminate compost or mulch made from grass treated with these products. They are no longer available for use on turf.
- Use your green waste container, if available.



CHOOSING YOUR EQUIPMENT

Turf professionals have varying opinions on which equipment works best. Some get good results with mulching mowers. Others say standard mowers work better, and some use standard mowers with mulching retrofit kits.

To find the best mowers for grasscycling the lawn you maintain, get information from home and garden professionals. Test out several types of equipment before buying.

KEEP IN MIND:

- A mulching mower needs about 20% more power than bagging mowers operated at the same speed.
- Mulching mowers perform better at slower speeds.
- Examine clipping discharge, especially for multiple blade mowers. Baffles between the blades under the mower deck help ensure clippings are evenly distributed.
- Mulching mowers may be heavier than standard mowers. Wide tires can help keep mower from sinking or causing ruts in the lawn.

Also keep in mind, gas mowers can emit 10 times the pollution of late-model cars, per hour of use. This pollution is in the operator's breathing zone. To cut down on pollution:

- Upgrade your two-stroke to a four-stroke cycle engine, which has lower emissions and a better fuel efficiency.
- Keep gas mowers well-tuned and in good repair, so they can run cleaner.
- Consider electric mowers. Riding electric mowers are now used at putting greens and on golf courses.

CONVINCING YOUR CLIENT...

If you are a professional landscaper, you may find that providing an environmentally-friendly service such as grasscycling is attractive to many Sacramento-area clients. It may not take much convincing, but to encourage your clients to try grasscycling you can:

- Ask about grasscycling during the pre-bid walk-through
- Emphasize that the grasscycled lawn will look beautiful
- Describe the environmental benefits, plus the benefits to the lawn and soil
- Request a trial period



OTHER WAYS TO LANDSCAPE FOR LESS TO THE LANDFILL

REDUCE • REUSE • RECYCLE

- **Generate Less Plant Trimmings**
 - Give plants only the water and fertilizer they need: overwatering and overfertilizing creates excess plant growth and promotes plant diseases. A soil test can determine what and how much fertilizer you need.
 - Avoid overplanting. Allow enough room for the plants to grow to their mature size, eliminating the need to continually prune or remove excess plants later.
 - Select plants according to light, temperature and water at the microsite. Healthy plants won't need to be removed.
 - Replace sheared hedges with plants that naturally grow to the desired size without shearing. Your landscape will generate less waste and you will significantly cut your labor cost for maintenance.
 - Choose plants that can grow to their natural size in the space allotted.
- At large sites, dedicate a bin to plant trimmings only. It may be available from the hauler for a lower collection fee.



ABOUT RIVER-FRIENDLY LANDSCAPING

RIVER-FRIENDLY LANDSCAPING IS BASED ON 7 PRINCIPLES:

- ① Landscape Locally
- ② Landscape for Less to the Landfill
- ③ Nurture the Soil
- ④ Conserve Water
- ⑤ Conserve Energy
- ⑥ Protect Air and Water Quality
- ⑦ Create Wildlife Habitat



Photos by John Inglett

WHAT IS RIVER-FRIENDLY LANDSCAPING?



Photo by John Inglett

River-Friendly Landscaping is a holistic approach to landscaping that works with nature to reduce waste, prevent pollution, and support the integrity of one of California's key ecosystems, the Sacramento River watershed.

It is also a method by which you can create and maintain a healthy, beautiful, and vibrant landscape using the 7 PRINCIPLES OF RIVER-FRIENDLY LANDSCAPING.

A well-designed and maintained River-Friendly landscape can cost you less in the long run by consuming fewer resources. You can be part of the solution.

For more information on River-Friendly Landscaping, visit: riverfriendly.org

The Sacramento River-Friendly Landscaping Program

The River-Friendly Landscaping Coalition is a collaboration between public agencies, non-profit organizations, designers, private landscape architects, and contractors.

THE VISION of the coalition is to improve the health of communities and ecosystems through sustainable landscaping in the Sacramento Valley and surrounding foothills.

THE MISSION of the River-Friendly Landscaping Coalition is to provide individuals, businesses, and institutions access to information, resources, and ideas so that landscapes are designed, built, and maintained according to the sustainable practices of the River-Friendly Landscaping principles.

The River-Friendly Landscaping Program has produced this guide as a public service to aid homeowners and landscape professionals in the reuse and reduction of plant debris, and to support other environmental benefits. The information in this guide is strictly for use on a voluntary basis. **It is not a substitute for the exercise of sound judgment and not intended as a recommendation for a particular product or service.** The River-Friendly Landscape Guidelines are based upon the Bay-Friendly Landscape Guidelines developed by *StopWaste.org*. This guide to mulch and grasscycling is a compilation of the Bay-Friendly Landscape Guides for Mulch and Grasscycling developed by *StopWaste.org* in Alameda County, California.

Ask about other Free River-Friendly Resources for Homeowners and Landscape Professionals

Available online at riverfriendly.org

Other Mulch Resources

The California Integrated Waste Management Board offers resources for the commercial landscaper at its website: www.ciwmb.ca.gov/Organics/Landscaping/

The Sacramento Area Regional Recycling Group offers a “Backyard Composting Guide.” Visit <http://www.msa2.saccounty.net/wmr/Documents/CompostGuide.pdf>

The California Landscape Contractors Association offers a brochure: “Resource Recovery Handbook.” Visit www.clca.org



riverfriendly.org