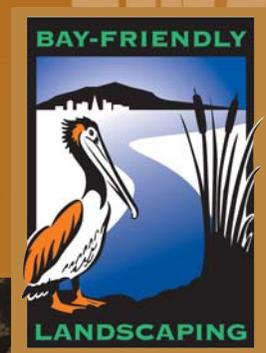


A BAY-FRIENDLY LANDSCAPING GUIDE TO

MULCH



*Save Money, Control Weeds, and
Create Healthy Landscapes*



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.

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 the professional landscaper, rather than as a waste product.

Bay-Friendly Landscaping ...

means working in harmony with the natural ecosystem of the San Francisco Bay area 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 Bay-Friendly landscapes and gardens. The benefits to you, your clients, their landscapes 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 costs
- 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

Making your own mulch on site also saves the time and cost of trucking plant debris to the landfill as well as the expense of buying and transporting commercial mulches.



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.



Left: Designating a tree's dripline as a natural mulch repository can improve the health of the tree and create a dramatic design in urban landscapes.

Frank Ogawa Plaza, Oakland

Protect the Environment by Reducing Waste

Plant debris accounts for approximately 7 percent of what is thrown away annually in California – about 110,000 tons per year in Alameda County alone. Much of that waste passes through the hands of professional landscapers. 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 for controlling soil erosion. Wind and rain can carry away exposed soil particles, turning a valuable resource 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 rain and wind. It can also reduce storm water runoff velocity, minimizing the potential for creek channel erosion. Mulching is a critical practice during construction, when trees, shrubs and other plants that hold the soil in place with their roots have been removed, as well as over the long term, after construction has been completed.

Look Good with Recycled Mulch

Mulching adds value to a site, in the eyes of 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 sizes and colors. Many Alameda County 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 a commercial mulch over recycled mulch to create a more uniform appearance.

“Adding mulch to the bare soil helps the landscape professional delay the next irrigation cycle and meet plant needs.”

— David Langridge, Water Conservation Representative, East Bay Municipal Utility District

“Greenwaste mulch is far less expensive than mulch from forest products.”



— Tom Del Conte, President, Del Conte's Landscaping, Fremont

“Mulch at the base of trees is critical for healthy tree growth in turf areas. Turf can rob trees of needed water, create



shallow tree root growth and mowers too close to the trunks can destroy the bark and kill the tree.”

— Lisa Caronna, Director, Parks and Waterfront, City of Berkeley

“If you’ve got a mulch layer, you can just pick the weed out. If there’s no mulch, you just snap the top off and the weed will come right back.”



— Stephen Williams, Owner,
Stephen Williams Landscaping,
Piedmont

“Coarse mulch gives you the best weed control. For nutrient supply, fine material works best.”



— Mitch Matsumoto,
General Manager, Vision
Recycling,
Fremont

“Heavy mulching lasts longer than herbicide treatment and can be applied with low-cost labor. Herbicides must be applied more frequently and by highly trained, licensed personnel.”



— Richard Applebaum, President and General Manager,
East Bay Landscaping Co., Inc.

“You always hear that mulch from raw green waste has a nitrogen drag. In my personal experience, that’s just not true. I’ve personally seen great success with putting raw chipped trimmings back into the landscape as mulch.”

— Tom Del Conte, President, Del Conte’s Landscaping,
Fremont

Mulch Basics

1 Before applying mulch, remove weeds 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, tree 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.** Thin layers of fine mulch (particle size of half inch or less) are less likely to impede air and water. Fine mulches decompose more quickly and 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.
- **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.

How Much Do You Need?

Mulch is often available in bulk, measured in cubic yards or tons. You can calculate the volume you will require by multiplying Area (in square feet) X Depth (in feet, not inches) and dividing by 27. The following table has made this calculation for you:

<i>Cubic Yards Needed for Depth of Mulch</i>				
Square Footage	2"	4"	6"	8"
1,000	6	12	19	25
5,000	31	61	93	124
10,000	62	122	185	247
20,000	124	244	370	494
30,000	186	367	556	741
43,560 (1 acre)	269	532	807	1076

Bulk sales can also be measured in tons. To convert from required cubic yards to tons, ask for the bulk density (tons/cu. Yard) and multiply the cubic yards needed from the table above by the bulk density.

Sample Maintenance Specifications

F. Maintain organic mulch

1. Contractor shall maintain a minimum of 2" [substitute depth required by the local water conservation ordinance] of coarse organic mulch at all times over soil surface that is not covered by vegetation. Mulch shall be applied so that it is below grade (curb, edging, etc.) by half an inch. Some additional grading preparation and grading of areas adjacent to sidewalks or edging, etc. may be required to keep the finish grade of the mulch at an appropriate level. Mulch materials shall be chipped or shredded green waste, wood chips from pruning operations, or chipped landscape prunings. When available, use materials generated on-site. Shredded redwood bark mulch ("Gorilla hair") shall be avoided. Non porous material (e.g. plastic weed barriers) shall not be placed under the mulch.

2. Sheet mulching shall be employed where possible.

G. Retain natural leaf litter and clippings

1. To conserve nutrients on-site and protect the soil surface, Contractor shall retain natural leaf drop under trees or in shrub beds. Select only tree and shrub beds that will not allow leaf litter or mulch to wash out into storm drains. Where leaf litter detracts from landscape appearance due to large leaf size, it is preferable that leaves be chopped and returned to landscape beds. Remove diseased leaves that would provide inoculum for plant infection.

2. Contractor shall practice grasscycling

SOURCE: MODEL BAY-FRIENDLY LANDSCAPE MAINTENANCE SPECIFICATIONS, 2006-2007. FROM www.BayFriendly.org

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 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.

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 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.



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. (See *Health and Safety*, page 14.)

Longevity: Medium Long

Recommendations:

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

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 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.



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 a mulch, it may not control weeds, because seeds can germinate and grow in the compost. This is especially true in windy areas, where weed seeds can blow onto compost and grow. Recent research indicates however, that compost used as a mulch is very effective for controlling erosion. Refer to *Mulch for Erosion Control* on page 10 for more information.

Longevity: Medium

Recommendations:

- Apply a layer of coarse, woody mulch on top of the compost for better weed control.
- Select particle size for aesthetics.
- Replenish annually.



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 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.



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.

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.
- 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.



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.

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.

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.



Sample Sheet Mulching Specification

3.08 SHEET MULCHING

- A. After the 5 gallon and larger plant materials have been planted the "sheet mulch" shall be installed.
- B. Refer to sheet mulch application detail.
- C. Apply a minimum of two layers of 100% recycled B flute cardboard as a bio-degradable weed barrier to the entire planting area, completely covering all existing soil and vegetation.
 1. Wet cardboard while applying to prevent it from blowing away.
 2. Sheets of cardboard shall overlap a minimum of 8".
 3. Cardboard shall abut directly against edge of pavement, curbs and boulders.
 4. Cardboard shall be applied to the edge of installed plant root balls without covering any part of the top of the root ball / root crown area.
 5. Excess cardboard shall be folded under itself when abutting against hardscape objects or root crown

areas, as opposed to being cut, to avoid excessive cardboard scraps. This folding under process is greatly aided when the cardboard is wet.

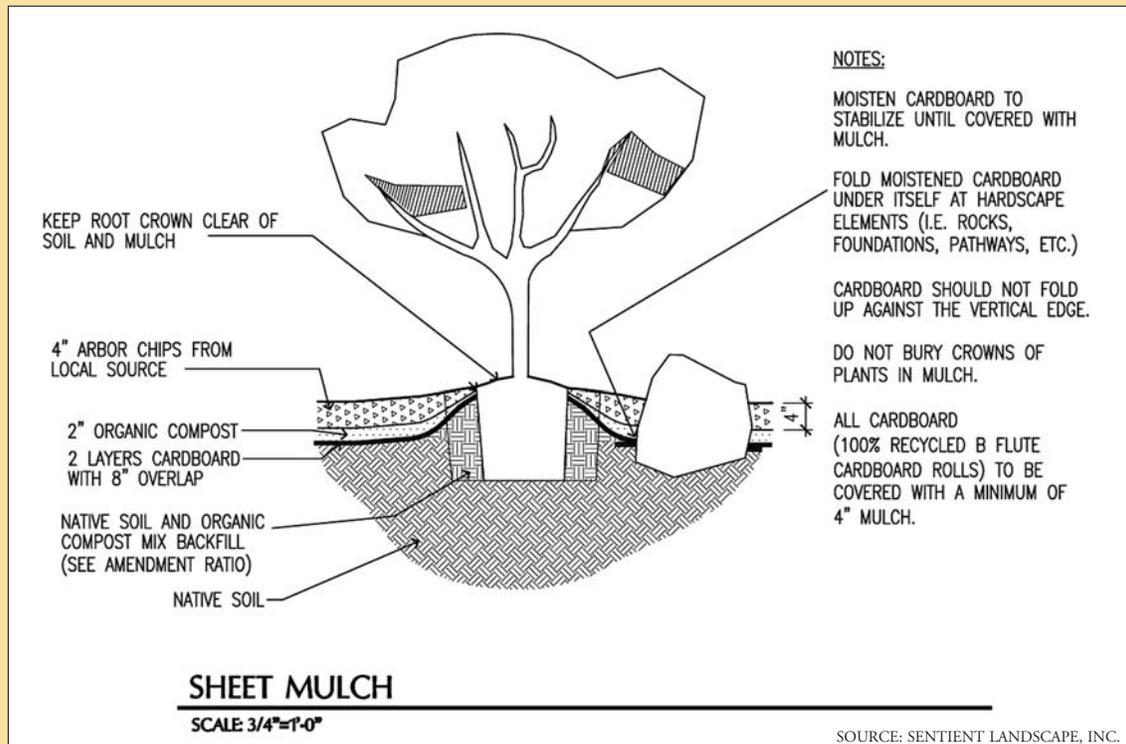
6. All cardboard scraps shall remain separated from other construction debris and shall be deposited at a local recycling facility.

D. Apply compost and mulch.

1. Apply 1-2" of organic compost on top of the cardboard layer in all planting areas. Reduce organic compost application to 1/2" when 6" or less from the edge of curb.

2. Apply 1-2" of plant debris mulch on top of the compost in all planting areas to protect compost during the planting of 1 gallon and 4" pots and the laying out of drip lines.

3. Keep root crowns of all plants clear of compost, mulch.



Mulch for Erosion Control

“Mulching can provide immediate, effective and inexpensive erosion control.”

– National Menu of Best Management Practices, EPA

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:

Costs of Erosion Control Materials:

Compost \$0.97 per square meter
Synthetic blanket \$3.90 per square meter

SOURCE: TEXAS TRANSPORTATION INSTITUTE, 1996.

The EPA recommends an application of 1/2 -4 inches of screened compost directly on the surface of the soil, dependent on rainfall, vegetation and slope, with a deeper application and larger particle size for steeper slopes. For more information on the particle size and other compost characteristics, refer to the following table:

<i>Example Specifications for Compost Blankets Used for Erosion Control</i>			
Parameters	Units of Measure	Surface to be Vegetated	Surface to be left Unvegetated
pH	pH units	5.0 – 8.5	N/A
Soluble salt concentration (electrical conductivity)	dS/m (mmhos/cm)	Maximum 5	Maximum 5
Moisture content	%, wet weight basis	30 – 60	30 – 60
Organic matter content	%, dry weight basis	25 – 65	25 – 100
Particle size	% passing a selected mesh size, dry weight basis	100% passing 3" (75 mm) 90-100% passing 1" (25 mm) 65-100% passing 3/4" (19mm) 0-75% passing 1/4"(6.4 mm) Max. particle length of 6" (152 mm)	100% passing 3" (75 mm) 90-100% passing 1" (25 mm) 65-100% passing 3/4" (19mm) 0-75% passing 1/4" (6.4 mm) Max. particle length of 6"(152 mm)
Stability (CO ₂ evolution rate)	mg CO ₂ -C per g organic matter per day	<8	N/A
Physical contaminants (manmade inerts)	%, dry weight basis	<1	<1
SOURCE: ALEXANDER, R. 2003. STANDARD SPECIFICATIONS FOR COMPOST FOR EROSION/SEDIMENT CONTROL, DEVELOPED FOR THE RECYCLED MATERIALS RESOURCE CENTER , UNIVERSITY OF NEW HAMPSHIRE, HTTP://CFPUB.EPA.GOV/NPDES/STORMWATER/MENUOFBMPsi/CON_SITE.CFM			

LOCAL RECYCLED MULCH LANDSCAPES



Left: Albany Buchanan Street medians were constructed using sheet mulch and other Bay-Friendly landscaping practices.



Above: Campanile, UC Berkeley. Trees beneath the Campanile on the UC Berkeley Campus are mulched with mixed plant debris.



Left: Mulch made on-site from trees infected with Pine Pitch Canker at EBRPD Headquarters, Oakland.



Above: Commercial site in Albany, mulched to control weeds and conserve soil moisture.



Below: Open space in Fremont is enhanced with mulch made on-site using mixed plant debris.



Applying Mulches

Spreading mulch is often a hands-on task. Use a front-end loader whenever possible to move and spread mulch or to make small piles that are then spread by raking. Additional 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.



For spreading services try:

Jet Mulch Co.
2445 Vista Del Monte
Concord, CA 94520
925-676-7068



Volunteers. The City of Livermore has had success attracting 200 volunteers on an Earth Day Event to help spread mulch and plant 100 trees along a bike path. This approach could be used with other civic events such as Arbor Day or Clean-up days.



Mulch On-Site. Sometime 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.



Reducing the Spread of Plant Diseases

The spread of disease due to the use of mulch from diseased prunings 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 plants.

Special notes for trees infected with:

Pine Pitch Canker: A recommended practice is to chip infected trees and spread the mulch on or near the site but not near healthy pines or Douglas fir. Within infected areas, chipping contributes little to the spread of these diseases. It is best not to transport materials infected with pine pitch canker to help prevent the spread of the disease.

Sudden Oak Death: Host materials are now regulated under State and Federal quarantines. To minimize the spread of the disease, avoid cutting diseased materials from mid-October to the end of April. Another best management practice is to chip the branches and use the chips onsite as mulch. Consider piling up the materials for a period of time to encourage high temperatures that increase disease suppression prior to use. Prior to moving any materials off site, contact the county Agricultural Commissioner for information on regulations and practices that limit the spread of the disease.

Dutch Elm Disease: Prune trees infected with Dutch Elm disease from November to early March only. Pruning at other times of the year, when the beetle that carries the disease is active leaves wounds on the tree that attracts the beetle and thus spreads the infection.

For more information, visit the websites listed in “*Other Mulch Use Resources*” on the back cover.

“In runoff areas, I layer mulch on top of gullies. And there are no more gullies.”



— Greg Harrington, Gardener,
University of California,
Berkeley

“We replenish mulch annually during December and January, when we’re cutting all the plants back and we have easy access.”

— Stephen Williams, Owner, Stephen Williams Landscaping,
Piedmont

“We try to chip what we prune directly back into the landscape, right where we take it out.”



— Mike Perry, Groundskeeper
III, Landscape Maintenance, City
of Livermore

“Weed cloths and plastic work for a time, but in the end, they’re not worth it and they create waste disposal problems. It’s better to use locally-produced, organic materials.”

— Lisa Caronna, Director, Parks and Waterfront, City of Berkeley

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 cost 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 in areas 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.

Preventing Allergic Reactions

Always have your crew 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.



SOURCES

for Recycled Mulch

Contact local tree companies for free arbor chips or purchase recycled mulch from the following sources. You can also ask your local nurseries to carry recycled mulch for you.

BFI Organics

1601 Dixon Landing Road
Milpitas • (408) 945-2836
www.interquix.com/organics

CCL Organics

1460 Goodyear Road
Benicia • (707) 751-0466

Davis Street Transfer Station

2615 Davis Street
San Leandro • (510) 563-4257

Grab n' Grow Soil Products

2759 Llano Road
Santa Rosa • (707) 575-7275

Green Waste Recycle Yard

2550 Garden Tract Road
Richmond • (510) 530-6185
www.greenwasterecycleyard.com

Grover Landscape Services

2825 Kiernan Avenue
Modesto • (209) 545-4401

Lyngso Garden Materials

19 Seaport Boulevard
Redwood City • (650) 364-1730
www.lyngsogarden.com

Palo Alto Organics Yard

2380 Embarcadero Road
Palo Alto • (650) 329-2113

Sonoma Compost

550 Meachem Road
Petaluma • (707) 664-9113
www.sonomacompost.com

South Valley Organics, Inc.

3665 Pacheco Pass Highway
Gilroy • (800) 208-2370
www.southvalleyorganics.com

Zanker Road Landfill

705 Los Esteros Road
San Jose • (408) 846-1574
www.z-best.com

About Bay-Friendly Landscaping

Bay-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



Creating mulch from plant debris and using mulch is one of the most important Bay-Friendly landscaping practices, with benefits to many of the 7 principles. Producing mulch from plant debris keeps it out of landfills. Using mulch nurtures healthy soil by protecting soil structure, preventing erosion, and supporting the microbes that cycle nutrients and filter pollutants. Covering the surface of all soil that is not protected by plant growth is critical for creating drought resistant soils and conserving water. Water quality is protected when soil erosion is prevented. Water quality is also protected when weeds are controlled through the use of mulch rather than herbicides. It is important, however to place mulch in areas that will protect it from being picked up and pulled into the storm drain with storm water runoff.

Other ways to Landscape for Less to the Landfill

Recycle More

- Grasscycle by leaving grass clippings on the lawn. Order a free copy of the *Bay-Friendly Landscaping Guide to Grasscycling* from www.BayFriendly.org. Avoid using pesticides containing clopyralid or picloram, which are especially resistant to decomposition and can contaminate compost or mulch made from grass treated with these products.
- Compost plant trimmings on site. And use compost – it builds healthy soil and reduces the need for commercial fertilizers.
- Get a clean, green discount at local landfills and transfer stations by separating plant trimmings from trash at the point of collection.
- At large sites, dedicate a bin to plant trimmings only. It may be available from the hauler for a lower collection fee.

Generate Less Plant Trimmings

- Give plants only the water and fertilizer they need: overwatering and overfertilizing creates excess plant growth and promotes plant diseases.
- 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 client's landscape will generate less waste and you will significantly cut your labor cost for maintenance.



Mulching is One of the 7 Successful Steps of Water Wise Gardening in San Mateo, Alameda, and Santa Clara Counties

Water wise gardening saves you time, energy, money and water. The following 7 steps help you achieve a beautiful, easy to care for landscape that uses water efficiently.

1. Plan and design
2. Limit turf areas
3. Irrigate efficiently
4. Improve your soil
5. Use mulches
6. Use water-thrifty plants
7. Maintenance pays off

Other water wise suggestions:

- Replace a portion of your lawn with native and California-friendly plants, which can save up to 1,800 gallons a month depending on your specific locale.
- Use only as much water on your lawn as you need. Step on your grass; if it springs back when you lift your foot, it doesn't need water. You can save up to 1,500 gallons a month.
- Fix leaky faucets across the sprinkler system. You can save up to 20 gallons a day for every leak stopped.

If you live in San Mateo, Alameda, or Santa Clara Counties, and you would like more information regarding water efficient landscaping, water conservation practices, or water supply please contact the Bay Area Water Supply & Conservation Agency (BAWSCA) at 650-349-3000 or visit www.BAWSCA.org.



The Bay Area Water Supply & Conservation Agency (BAWSCA)

represents the following water agencies that purchase water from the San Francisco Regional Water System:

- Alameda County Water District
- City of Brisbane
- City of Burlingame
- California Water Service Company (Bear Gulch, Bayshore Districts)
- Coastside County Water District
- City of Daly City
- City of East Palo Alto
- Estero Municipal Improvement District
- Guadalupe Valley MID
- City of Hayward
- Town of Hillsborough
- City of Menlo Park
- Mid-Peninsula Water District
- City of Millbrae
- City of Milpitas
- City of Mountain View
- North Coast County Water District
- City of Palo Alto
- Purissima Hills Water District
- City of Redwood City
- City of San Bruno
- City of San Jose
- City of Santa Clara
- Skyline County Water District
- Stanford University
- City of Sunnyvale
- Westborough Water District

Free resources regarding sustainable landscaping, as well as additional copies of this mulch guide, can be downloaded from:

www.BayFriendly.org. For information regarding recycling, composting, toxics disposal, or other waste reduction issues, please visit:

In Alameda County: www.stopwaste.org. In San Mateo County: www.recycleworks.org/index.html. In Santa Clara County:

<http://www.sccgov.org/portal/site/iwm>

The Bay-Friendly Landscaping Program...

...was developed by StopWaste.Org. StopWaste.Org is the Alameda County Waste Management Authority and the Alameda County Source Reduction and Recycling Board acting as one public agency. Its mission is to plan and implement the most environmentally sound waste management program for the residents, businesses and institutions of Alameda County.

The *Bay-Friendly Landscaping Program* offers resources to landscape professionals in the public and private sector, model policies and technical assistance for local governments, as well as sustainable gardening education for the home gardener in Alameda County. The *Bay-Friendly Landscaping Program* has produced this guide as a public service to aid 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. For information about *Bay-Friendly Landscaping*, please visit www.BayFriendly.org.

Special Thanks to the Members of the Sustainable Landscaping Advisory Panel who freely shared their time and expertise: Richard Applebaum, Kurt Bland, Lisa Caronna, Tom Del Conte, Greg Harrington, Mitch Matsumoto, Douglas McDonald, Ed Murdoch, Mike Perry, Stephen Williams. And to Ed Perry and Jim Downer, UCCE Farm Advisors, Environmental Horticulture.

Reprinted June, 2006.