

A BAY-FRIENDLY 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.

**Y**ou 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” 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. If sheet mulching, weeding may not be required. (See page 8 for more info.) 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. Bay-Friendly Rated Landscapes require a minimum of 3 inches of coarse mulch.

- **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:

Cubic Yards Needed for Depth of Mulch			
Square Footage	2”	3”	4”
1,000	6	9	12
5,000	31	46	62
10,000	62	93	123
20,000	124	185	247
30,000	186	278	370
43,560 (1 acre)	269	403	538

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

#### 3.5 Mulch Regularly

A. Contractor shall maintain a minimum of 3” of coarse, recycled mulch at all times over surface of all non-turf planting areas.

B. Keep mulch 6” away from tree trunks and away from shrub stems.

C. 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.

D. Mulch materials shall be [insert BRAND NAME or ‘locally sourced recycled chipped or shredded or ground vegetation derived from urban sources or clean process recycled wood products, or arbor chips from tree trimming operations’]. When available, use materials generated on-site.

E. Shredded redwood bark mulch (“Gorilla hair”) shall not be used.

F. Non porous material (e.g. plastic weed barriers) shall not be placed under the mulch. Instead sheet mulching shall be employed where possible.

G. At a minimum replenish mulch once per year in November.

SOURCE: MODEL BAY-FRIENDLY LANDSCAPE MAINTENANCE SPECIFICATIONS. FROM WWW.BAYFRIENDLY.ORG

# RECYCLED MULCH TYPES

## And How to Use Them Successfully

**M**ulches 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 Plant Debris 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.

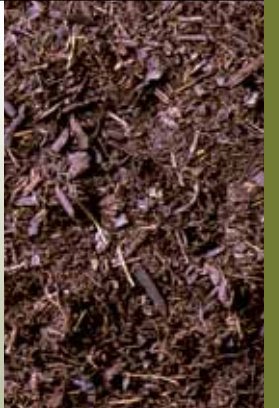


**Compost** is plant and other organic matter that has gone through a controlled decomposition process. It provides many valuable nutrients and improves soil structure. Used as a mulch, it may not control weeds, because seeds can germinate and grow in the compost. This is especially true in windy areas, 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 bermudagrass.
- 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, burlap bags 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.

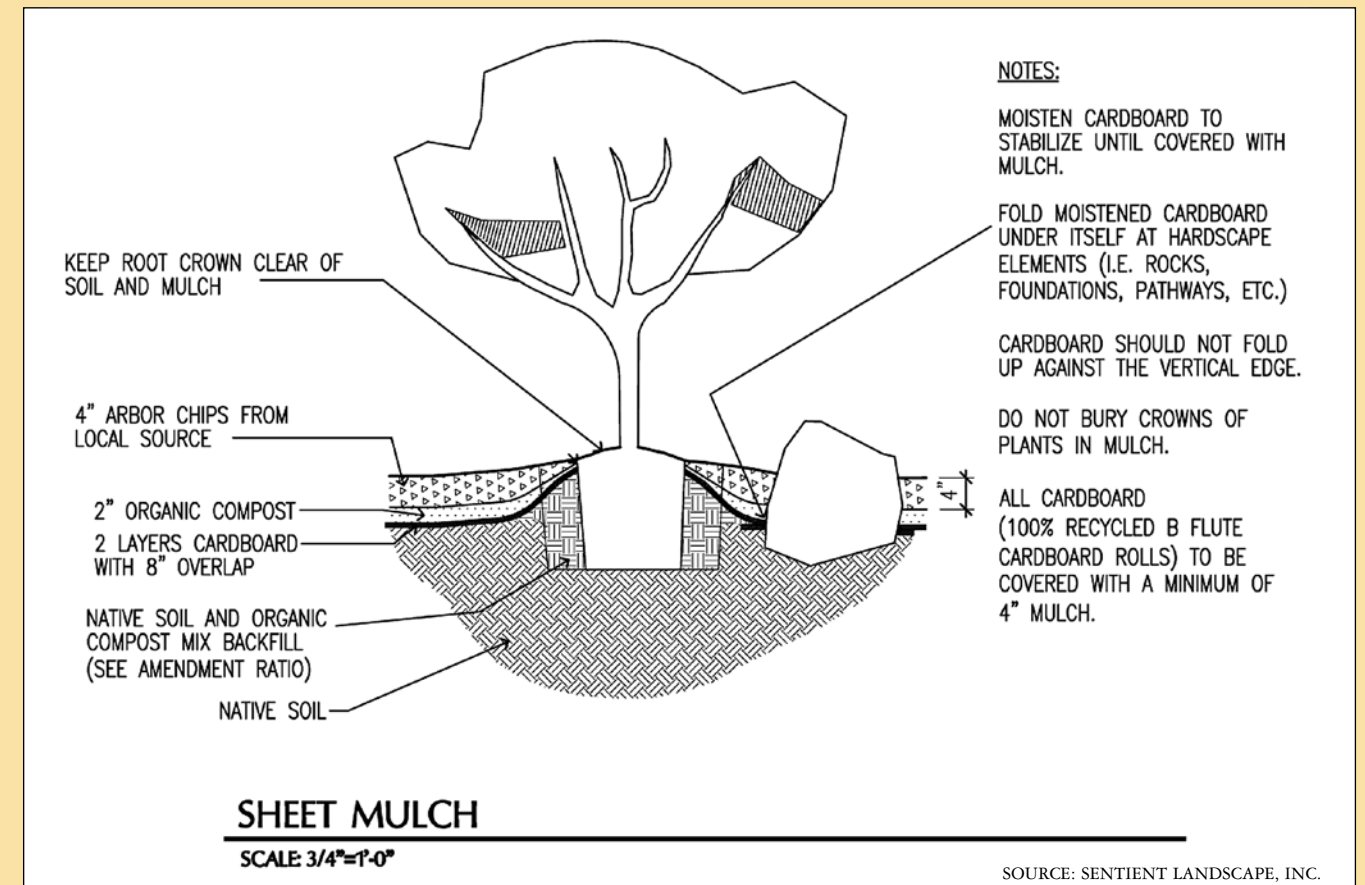
## Sample Sheet Mulching Specification

### 3.08 SHEET MULCHING

- After the 5 gallon and larger plant materials have been planted the “sheet mulch” shall be installed.
- Refer to sheet mulch application detail.
- Apply a minimum of two layers of 100% recycled B flute cardboard as a biodegradable weed barrier to the entire planting area, completely covering all existing soil and vegetation.
  - Wet cardboard while applying to prevent it from blowing away.
  - Sheets of cardboard shall overlap a minimum of 8”.
  - Cardboard shall abut directly against edge of pavement, curbs and boulders.
  - 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.
  - 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.

- All cardboard scraps shall remain separated from other construction debris and shall be deposited at a local recycling facility.
- Apply compost and mulch.
  - 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.
  - 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.
  - 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 method of stabilizing soil to control runoff and erosion. Mulch:

- Reduces surface crusting
- Protects soil from raindrop splash erosion
- Reduces competition from weed species
- Reduces stormwater runoff volume and velocity
- Improves infiltration rate
- Conserves soil moisture
- Improves soil biology
- Improves soil nutrient levels and nutrient cycling
- Aids seed germination
- Improves potential for vigorous long term vegetation coverage

Mulch is typically applied from 2”– 3” deep. While mulch alone provides many benefits, it must be used in combination with other soil and vegetative treatments such as seeding or planting to achieve sustainable, long-term erosion control on disturbed sites.

### Compost Blankets

Compost blankets can be applied to the soil surface for erosion control, as an alternative to woody mulches, polymer based covers, hydromulching with fertilizer and silt blankets. They may or may not be vegetated and are often used with compost berms or socks, which are permeable barriers that filter (rather than divert) water that has been polluted with sediment. The slope of the site, amount of potential rainfall and/or irrigation, site activity, and type and timing of the vegetation to be established are all important considerations when deciding whether to use a compost blanket, filter berm or filter sock or combination.

### Additional Resources

California Integrated Waste Management Board, Compost Use for Landscape and Environmental Enhancement Manual, download from: [www.calrecycle.ca.gov/Publications/default.asp?pubid=1248](http://www.calrecycle.ca.gov/Publications/default.asp?pubid=1248)

Michael Hogan, 2009. *Sediment Source Control Handbook, An Adaptive Approach to Restoration of Disturbed Areas* Accessed 2009-07-16. [www.dot.ca.gov/hq/LandArch/ec/references/hogan\\_tahoe/SSCH2008.pdf#page=141&pagemode=bookmarks](http://www.dot.ca.gov/hq/LandArch/ec/references/hogan_tahoe/SSCH2008.pdf#page=141&pagemode=bookmarks)

Rodney Tyler, Alexander Marks and Dr. Britt Faucette, 2011. *The Sustainable Site: The Design Manual for Green Infrastructure and Low Impact Development*. [www.foresterpress.com/fps\\_sustain.html](http://www.foresterpress.com/fps_sustain.html)

Preferred Characteristics for Compost Blankets		
Parameters	Vegetated	Unvegetated
Particle size (% passing screen)	<ul style="list-style-type: none"> <li>• 100% passing 3”</li> <li>• ≥ 90% passing 1”</li> <li>• ≥ 70% passing ¾”</li> <li>• 30-60% passing ¼”</li> <li>• 6” max particle length</li> </ul>	<ul style="list-style-type: none"> <li>• 100% passing 3”</li> <li>• ≥ 90% passing 1”</li> <li>• ≥ 70% passing ¾”</li> <li>• 30-60% passing ¼”</li> <li>• 6” max particle length</li> </ul>
Moisture content (wet wt. basis)	Not applicable	Not applicable
Soluble salts (ECe)	< 10 dS/m	< 10 dS/m, less is preferred
Organic matter (dry weight basis)	30 – 65%	30 – 65%
pH	6.0 - 8.5	6.0 - 8.5
Contaminants (dry weight basis)	≤ 1% with no sharps	≤ 1% with no sharps
Application	¾” - 1” depth	1½ - 2” depth
Stability	mg CO <sub>2</sub> -C < 8 $\frac{\text{mg CO}_2\text{-C}}{\text{g OM-day}}$	mg CO <sub>2</sub> -C < 8 $\frac{\text{mg CO}_2\text{-C}}{\text{G OM-day}}$
Maturity (% emergence)	≥ 80%	≥ 80%
Fecal coliforms and Salmonella TMECC 07.01-B	Pass	Pass
SOURCE: CALIFORNIA INTEGRATED WASTE MANAGEMENT BOARD, COMPOST USE FOR LANDSCAPE AND ENVIRONMENTAL ENHANCEMENT MANUAL, PAGE 32		

## LOCAL RECYCLED MULCH LANDSCAPES



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



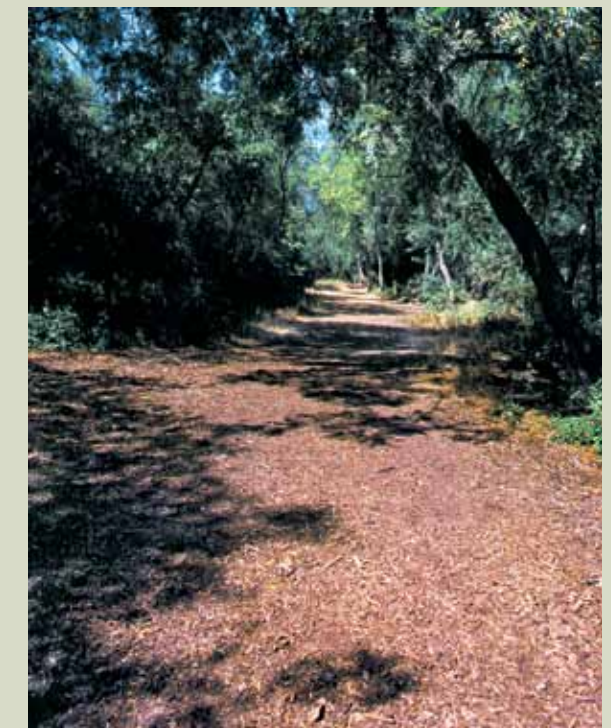
Above: Campanile, UC Berkeley. Trees beneath the Campanile on the UC Berkeley Campus are mulched with mixed plant debris.



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.



**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 on-site 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, 1 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

of Rolls of Recycled Content Cardboard for Sheet Mulching  
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.

### **BFI – Newby Island Compost Facility\***

1601 Dixon Landing Rd., Milpitas  
(408) 945-2836

### **CCL Organics\***

1460 Goodyear Rd., Benicia  
(707) 751-0466  
www.cclorganics.com

### **The Compost Store\***

Administrative Offices:  
235 N. First St., Dixon  
(800) 208-2370  
(Kim Carrier)  
www.thecompoststore.com

### **- Feather River Compost site**

3001 North Levee Rd.,  
Marysville  
www.featherriverorganics.com

### **- Jepson Prairie Organics site**

6426 Hay Rd., Vacaville  
www.jepsonprairieorganics.com

**- South Valley Organics site**  
3665 Pacheco Pass Hwy., Gilroy  
www.southvalleyorganics.com

### **- Recology Grover Environmental Products**

Compost Site: Vernalis  
Mulch Site: Modesto

### **Contra Costa Topsoil**

5030 Imhoff Dr., Martinez  
(925) 228-4007  
www.contracostatopsoil.com

### **Davis Street Transfer Station**

2615 Davis St., San Leandro  
(510) 638-2303  
www.dsgardencenter.com

### **Earthtones Mulch Company**

6756 Central Ave., Newark  
(408) 888-7632  
www.earthtonesmulch.com

### **Eco Mulch**

**Landscape Materials**  
Retail site: 1625 Buchanan Rd.,  
Pittsburg  
(925) 228-1673  
www.myeconomulch.com

### **Grab n' Grow Soil Products**

2759 Llano Rd., Santa Rosa  
(707) 575-7275  
www.grabngrowsoil.com

### **Green Waste Recycle Yard**

2550 Garden Tract Rd.,  
Richmond  
(510) 530-6185

### **Lyngso Garden Materials**

19 Seaport Blvd., Redwood City  
(650) 364-1730  
www.lyngsogarden.com

### **Sonoma Compost**

550 Meachem Rd., Petaluma  
(707) 664-9113  
www.sonomacompost.com

### **Vision Recycling\***

(831) 479-7857  
www.visionrecycling.com

### **- The Buena Vista Landfill**

1231 Buena Vista Dr.,  
Watsonville

### **- The Ben Lomond Transfer Station**

Ben Lomond

### **Waste Management\* Redwood Landfill**

50 Redwood Hwy,  
Novato

### **Z-Best Products\***

980 State Highway 25, Gilroy  
(408) 313-0444 (Alex Sharpe)  
www.zankerrecycling.com

SOURCES OF RECYCLED  
CARDBOARD ROLLS FOR  
SHEET MULCHING:

### **North Bay Paper Company**

Petaluma  
(800) 734-2772

### **Monahan Paper**

Oakland  
(510) 835-4670

### **The Urban Farmer Store**

San Francisco • (415) 661-2204  
Mill Valley • (415) 380-3840  
Richmond • (510) 524-1604

\* Members of the US Composting Council's Steal of Testing Assurance Program regularly sample & test compost, using STA approved labs, for chemical, physical and biological properties. www.compostingcouncil.org

## 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](http://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.





# The Bay-Friendly Landscaping & Gardening Coalition...

...offers training and qualification, and other resources to landscape professionals in the public and private sector, the Bay-Friendly Landscape Scorecard and Rating Manual for new commercial, civic and multifamily landscapes, model policies for local governments, as well as sustainable gardening education for home gardeners in Alameda County.

This guide has been produced 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.

To learn more about Bay-Friendly Landscaping & Gardening, or to become a member of the Bay-Friendly Landscaping & Gardening Coalition, please visit [www.BayFriendlyCoalition.org](http://www.BayFriendlyCoalition.org).

## Ask about other Free Bay-Friendly Resources for Landscape Professionals

Available online at [www.BayFriendlyCoalition.org](http://www.BayFriendlyCoalition.org):

- *Bay-Friendly Landscape Guidelines: Sustainable Practices for the Landscape Professional*
- *A Bay-Friendly Landscaping Guide to Recycled-Content and Salvaged Materials*
- *Una Guía de Bay-Friendly Landscaping Sobre el Mantillo (A Bay-Friendly Landscaping Guide to Mulch in Spanish)*
- *A Bay-Friendly Landscaping Guide to Grasscycling: Save Time, Save Money and Create Beautiful Lawns*
- *Una Guía del Jardinero par Reciclar Pasto (A Bay-Friendly Landscaping Guide to Grasscycling in Spanish)*

For your clients:

- *The Bay-Friendly Gardening Guide*
- *Lose Your Lawn the Bay-Friendly Way*
- *Find a Bay-Friendly Qualified Landscape Professional*

## Other Mulch Use Resources

- The California Integrated Waste Management Board offers resources for the commercial landscaper at its website: [www.ciwmb.ca.gov/Organics/Landscaping/](http://www.ciwmb.ca.gov/Organics/Landscaping/)
- Pine Pitch Canker website: [http://frap.cdf.ca.gov/pitch\\_canker/](http://frap.cdf.ca.gov/pitch_canker/)
- Sudden Oak Death website: [www.suddenoakdeath.org](http://www.suddenoakdeath.org)

## Become a Bay-Friendly Qualified Landscape Professional

Enhance your knowledge of the Bay-Friendly principles and the many practices that landscape professionals to offer profitable and environmentally sound landscaping services. Learn more and apply to the training program at [www.bayfriendlycoalition.org/Landscapeprofessional.shtml](http://www.bayfriendlycoalition.org/Landscapeprofessional.shtml)

[www.BayFriendlyCoalition.org](http://www.BayFriendlyCoalition.org)

