

## ● ALTERNATIVES

# PREPARING A LANDSCAPE SITE WITHOUT CHEMICALS

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Urban pesticide use has a direct impact on our health and the environment. Many urban landscapes are high maintenance, high cost, and high impact spaces that intensively use pesticides, fertilizers, and water. One way that we can reduce chemical use is to prepare landscapes using nonchemical site preparation techniques. This is one step towards creating urban settings that are healthy for the plants and animals (including people) that inhabit them. There are several nonchemical site preparation techniques available that work well, eliminate the use of hazardous pesticides, and enhance soil health.

## Planning

Whether you are creating an entire landscape design from "the ground up" or altering an existing site, planning is crucial. First determine the size of the site that needs to be prepared and which techniques you will use. When working with an established landscape, it may be best to start in a small area and then expand. Site preparation has to be done before any planting. Remember, no site preparation technique, including herbicide applications, will completely eliminate weeds. Plan a landscape that will establish easily on your site, grow vigorously, and outcompete unwanted plants.

## Removing an Existing Lawn

Lawns dominate the suburban environment and are frequently maintained



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with polluting and resource-intensive techniques. Getting rid of lawns, or sections of a lawn, is often a major part of preparing a site for natural landscaping. The most effective methods for doing this are stripping, solarizing, or smothering the turf.

The first step in all of these methods is trenching, defining the perimeter of the site. Use an edger or a small spade to trench the edge of the area where you wish to remove existing lawn with a vertical incision. Then, working from inside the site, remove wedges of turf to form a deep, narrow trench around the perimeter.<sup>1</sup> This will keep nearby vegetation from encroaching on the designated site.

**Stripping** the turf by hand or with a sod cutter is the fastest method to get rid of a lawn. The soil should be moist but not saturated. Cut the turf into narrow strips with an ax, edger or small spade and then detach the strip by using a hoe to cut through the roots. A gas-operated sod cutter works in much the same way. Stripped sod can then be composted into a fertile soil. Drawbacks to this process are that good top soil is removed (although it can be used after composting) and the removed sod takes a long time to decompose.<sup>1,2</sup>

**Solarizing** the turf uses the sun's heat to kill the lawn. This method works well in areas with a hot dry season lasting several months. In cloudy or windy areas this method is less effective. The University of California Integrated Pest Management Project has evaluated the susceptibility of many weedy species to solarization. First, scrape existing vegetation from your area or mow closely (to 1/2 inch). Irrigate the soil thoroughly, and make sure the surface of the soil is smooth. Cover the area with clear plastic

approximately 2 mils thick. Make sure that the plastic lies close to the soil and seal the edges of the plastic with soil. Leave the plastic in place for about 6 weeks during the hottest part of the year. If the plastic is punctured, repair the holes with tape.<sup>3</sup>

**Smothering** the turf can be done with organic or synthetic mulches. A mulch is any protective substance that covers the soil.<sup>4</sup> Both synthetic and organic mulches help control water loss and reduce irrigation needs.<sup>3</sup>

Synthetic mulches usually consist of black plastic (at least 4 mils thick) or a landscape fabric.<sup>2,4</sup> Simply cover the designated area with the plastic or fabric and then weight down the sides with rocks or boards and wait for the vegetation to die.<sup>2,3</sup> To improve the attractiveness of this method, you can cover the tarped area with leaves, bark, or straw.<sup>3</sup>

Using organic mulches to smother existing lawns or vegetation is the preferred site preparation technique in rainy parts of the Pacific Northwest. A benefit to using organic material is that it eventually decomposes<sup>3</sup> and does not require much clean up before installing the desired landscape. (Note that if the landscape you are planning is one that will not thrive in soil with added organic matter, organic mulches would not be a good choice.) The mulches can be made to look fairly attractive,<sup>3,5</sup> often improve soil health,<sup>3</sup> and usually take one winter season to do the job in the Northwest.<sup>5</sup> Organic mulches include newspaper, straw, sawdust, rice hulls, shredded bark, lawn clippings, and leaves.<sup>3</sup> Some gardeners prefer bark or pine needles because of their aesthetic properties; however, each mulch has its own characteristics<sup>3</sup> and you should decide which one is best for your



Using a newspaper and leaf mulch to prepare a school site for a natural landscape.

project.<sup>3</sup>

When using newspaper or other unbleached paper, make sure that it is five or six pages thick.<sup>5</sup> For both paper and cardboard mulches, it is important that the edges overlap.<sup>3</sup> A layer of leaves, straw, woodchips, or grass clippings should be spread over the paper or cardboard to hold it in place, improve its effectiveness, and enhance its appearance.<sup>5</sup> Whether covering paper mulches or using natural debris alone, "thicker the better" is the key; at least 3 inches is required.<sup>3</sup>

### Naturalizing a Lawn

An alternative to removing a lawn is to naturalize your lawn by adding wildflowers. This will give the look of a natural meadow. Again, start small and experiment to see how this fits into your landscape. You can prepare a site for naturalizing by cutting the present grass as low as possible (scalping it!). In early fall or spring, rake up the clippings, scratch the soil with a soil (steel) rake and sow wildflower and/or native grass seeds over the cut grass.<sup>6</sup> You can also set out bulbs or mature plants that you purchase or dig up (with permission!) from a place where they are already established.<sup>7</sup> Choosing the appropriate species to mix

into your lawn will give you low maintenance turf that needs little irrigation and fertilizes itself.<sup>8</sup> An Oregon State University turf specialist suggests yarrow, clover, chamomile, and English daisy in the maritime Northwest.<sup>8</sup>

Some people who have used this method caution that it only works well when the plants are vigorous competitors that grass won't dominate. Annual species, that need to germinate from seed every year, are not a good choice.<sup>7</sup>

### Stumps

A landscape alteration can include removal of larger plants like shrubs and trees that are not easily mowed, dug up and moved, or smothered with mulches. Cut the plants down to a stump as close to the ground as possible. If using a stump grinder to eliminate the remains, be sure to use the wood chips to smother the stump and other exposed roots. Or, immediately after cutting down the woody plant, cut grooves with your hatchet or chainsaw in the exposed top of the stump and other exposed roots. Put at least three inches of damp soil over the grooves and then cover completely with black plastic or roofing paper. The grooves will provide a pathway for decay organisms in

the soil to make their way into the stump. Within a year or so, the stump should be extensively decayed. The covered stumps can be hidden with an organic mulch to keep your site looking tidy and presentable.<sup>9,10</sup>

Removal is a technique for coping with stumps that are not too large. If the roots are followed away from the stump and cut, then the whole stump can be removed. A rule of thumb is that roots cut at a depth equal to five times their diameter will not be able to regrow.<sup>11</sup>

### Fertilizer?

Using plant species well-adapted to your area often eliminates the need to do anything more than the techniques discussed above to prepare a site. No fertilizer or other soil amendments should have to be added if the plants are put into their desired environment (shade, sun, wet soils, etc).<sup>3</sup>

### Conclusion

Use nonchemical techniques to prepare a site for landscaping. Costs are minimized, the site is healthy, and the risk of exposing yourself or the environment to a harmful pesticide is eliminated. ♣

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