California Gardening

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Gardening Basics | How do I practice sustainable gardening?

Maintenance Practices

On established gardens, use maintenance practices that reduce impacts on the environment and enhance natural pest management. The most important first step is to prepare the soil. Healthy soil will lead to healthy plants. Soil compaction is a common problem, as roots will not grow into compacted soil, nor will water penetrate well through it. The soil must be loosened where compacted, or use raised beds. Compost is an excellent amendment for soil – especially compost that has been turned and watered, and that has attained sufficiently high temperatures to kill weed seeds and pathogens. Other amendments, such as gypsum, may be useful or even necessary if the soil drains slowly because of poor structure. It is useful to send soil samples to a lab for analysis in order to know what nutrients are lacking or excessive.

Since many environmental problems can arise from the control of pests, integrated pest management (IPM) lies at the heart of sustainable gardening. Pests include weeds, insects and mites, diseases, and vertebrates such as rodents. Preventing pests is always more effective than controlling them once they are established.

Herbicides are often used by gardeners and landscape maintenance workers. Many lawn weeds can be prevented by providing the appropriate amount of water and using an appropriate mowing height and mowing frequency for the species planted. See the UC Guide to Healthy Lawns. In landscaped areas, use a mulch of wood chips and/or landscape fabric to reduce weeds. In all cases, preventing weeds from going to seed goes a long way in avoiding future weed problems.

Insect and disease pests are often specific to certain plant species, so replacing a pest- prone plant with a resistant species or variety can eliminate the need for insecticides or fungicides. When pests do arise, attempt to simply remove affected plant parts. Sometimes pests are present in low numbers. See if you can tolerate them, but remember that pest numbers can increase rapidly given the right conditions. Walk through your garden regularly looking for pests before they become a major problem. Be sure you are able to identify pests correctly. Know a bit about the pest before making a decision to spray for control. Many pests may only have a minor impact on their hosts.

If a pest problem needs controlling, only use products that will have the least impact on non-target creatures and on the environment. Many organically acceptable products are very safe, but many synthetic products can be safe if applied correctly. Consider the effect of a pesticide that might wash off into a storm drain, and take steps to avoid off-site movement. A major source of contamination of waterways is runoff of pesticides that are applied on sloping and over-irrigated lawns or are inadvertently applied on concrete. In general, pesticides should be used as a last resort.

Vertebrate pests, such as gophers, rats, ground squirrels, deer, and rabbits may cause significant damage to a landscape. Excluding them from your garden and landscape by fencing or caging roots may be the best means of control. Gophers are easily controlled by Macabee gopher traps. These mechanical methods of control tend to have the least impact on non-target vertebrates. In addition to fencing, eliminating habitat for certain vertebrates can be very effective in reducing their numbers.

For example, brush piles harbor rats and mice. Keep brush piles to a minimum especially in urban areas.

Proper irrigation is a key practice in sustainable gardening, both for conserving water and maintaining water quality. Knowing when and how much to water and using the least amount of water necessary to grow healthy plants can be challenging, but is increasingly important as water becomes scarcer. Periodically dig into the soil with a shovel or use a soil probe to see how moist it is.

Many of us inherit gardens that were established before we acquired them. There are many things you can do, over time, to convert your garden into a sustainable landscape. Start by just doing one Thing: retrofit your irrigation system so that water doesn't run off into the gutter. That one thing can save thousands of gallons of water and prevent pesticide and fertilizer movement into our rivers and streams.

Fertilizing, especially with nitrogen, is often thought to be a "normal" annual activity for landscapes. However, much research indicates that for most landscape situations, other than lawns, fertilization as a regular maintenance activity is not required. There is often no real benefit and in fact, there can actually be a negative impact if it leads to excessive plant growth that requires more pruning which produces green waste. In addition, there are negative consequences if fertilizers are leached into local aquifers or move in runoff into streams and rivers. Fertilize only when a soil test indicates that it is required. Never fertilize without knowing if a plant is in need of it. If you find you must fertilize, use natural fertilizers like compost, rock phosphate, kelp, seaweed, fish meal, or alfalfa meal. These also feed the soil and the microorganisms it contains. They also encourage a slower, natural rate of plant growth, which helps avoid some pest problems.

Sustainable landscape practices also conserve energy. When landscaping, consider tree placement so that it shades your home from the hot afternoon sun by placing deciduous trees on the west and/or the south side of your home. On the west side, plant trees that tend to have low branches to block late day sun. On the south, plant trees that have a high, broad canopy. By planting trees that lose their leaves in winter, they will allow the winter sun to help warm the walls of the home. On the north and east sides, consider evergreens to block both winter winds and summer heat.

See River-Friendly Landscape Guidelines (pdf) and UC IPM for more tips and ideas on sustainable landscape practices for California.

In conclusion, sustainable landscape practices are gardening practices that not only save you money by saving energy, water, and time; they will help to improve environmental quality. Remember, the key goals of sustainable gardening practices are to: sustain water availability; reduce off-site water movement into storm drains, lakes, rivers and creeks; reduce energy use; reduce our green waste to landfill; prevent soil degradation; facilitate wildlife, and reduce the spread of invasive plant species.

The California Gardening web site provides detailed information on sustainable gardening.

Garden Design and Selection of Materials

Complete Paper

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