COMBATING WHITE GRUBS AND THE URBAN WILDLIFE THAT LOVES TO DIG THEM UP

If your lawn appears to be dead in patches or feels spongy, or if raccoons or possums have been rolling up your turf like a carpet, you might have white grubs. Or you might not!

Drought can cause grass to go dormant or die in patches. Dog urine can cause yellow spots in a lawn. Hungry birds, moles, raccoons, opossums, and skunks may dig in the turf looking for tasty grubs, but they might not find them. Before you take action against grubs, you should verify their presence in several places.

Identifying grubs
White grubs are an immature stage of several kinds of beetles that feed on grass roots. Grubs are C-shaped, up to an inch long, and often white with a brown head and three pairs of legs. Dig around grass roots where you suspect grubs. In late fall through spring, look for whitish to yellow, wrinkled, C-shaped grubs. Look for yellowish-brown adult beetles in early to mid summer. You probably won’t see damage from grubs on the surface of your lawn until June or later when the grubs have grown into beetles and finished eating for the year.

Controlling grubs
The best approach to grub control is to maintain a healthy lawn without using insecticides. Be sure your lawn is well drained and not compacted. Healthy lawns recover more easily from white grub damage.

- Plant warm-season native grasses (see Some Preferred Grasses for California), which are more tolerant of white grubs than cool-season ryes or fescues.
- If you do end up with a large grub infestation (more than six grubs per square foot of lawn), products with azadirachtin can be used to control immature grubs. Apply these products early in the season when grubs are small and close to the soil surface. Mow the lawn before applying, so that the maximum amount of material will reach the root area. You may need to reapply.
- Don’t treat in mid spring or later, when you find dead patches of turf. By this time grubs have done all their damage for the season and are ready to stop eating. Remove the dead grass, loosen the soil, and reseed the area.

Control grubs with beneficial nematodes
- Apply beneficial nematodes (Heterorhabditis bacteriophora or Steinernema glaseri) in late spring before adult beetles emerge, or in mid summer to early fall. Nematodes must be applied when the soil temperature is between 60°F and 90°F and the soil is moist. Nematodes need moisture to move around in the soil and to prevent their bodies from dehydrating. Water the soil before and after application, but don’t soak the area. Apply nematodes in early evening to minimize damage from sunlight. Avoid using fertilizers two weeks before and two weeks after the application.
- Buy nematodes from your nursery or garden center, which will order them for you if they are not in stock. Or, order them online. To make sure nematodes are alive, place a small quantity of the nematode-containing material in water and watch closely to see if they are moving. Nematodes are very small, so you may need a magnifying glass to see them.

For more information about lawn pests in California, see: www.ipm.ucdavis.edu/OT/lawn/insects/card.html. For more information about beneficial nematodes and how to apply them, see: www.ipm.ucdavis.edu/TOOLS/TURF/PESTS/nemat.html.

PLANTING A NEW, MORE DROUGHT-TOLERANT LAWN

Start out with the right seed or sod
- For lawn species that need less water than traditional turf varieties, see the list of preferred grasses for California inside.
- Do some research before you decide what grass species to plant. See the list inside, and two helpful publications from the University of California: www.ipm.ucdavis.edu/PMG/menu.htm, and www.ipm.ucdavis.edu/TOOLS/TURF/TURFSPECIES/index.html. Choose a mixture of grasses suited to your climate and the conditions in your yard.
- When installing sod, be sure to choose sod that has been propagated in conditions similar to your own.
- Consider having your soil professionally tested so you can choose grass that matches your soil’s texture, pH, and salt and nutrient levels.

Prepare the soil before you plant
- Don’t work the soil when it is very wet. You can damage the soil.
- Break up all dirt clods into fine particles and remove pebbles and stones.

To kill immature grubs (azadirachtin)
Safers Brand Grub Killer concentrate (for hose-end application)
Buy nematodes from your nursery or garden center, which will order them for you if they are not in stock. Or, order them online.
Mechanical dandelion puller
Fiskars UpRoot Weed and Root Remover
Soil analysis laboratories
Ask your nursery or garden center for a recommendation, or contact your county agricultural extension office (see http://ucanr.edu/County_Offices/)


Water a new lawn with care
- Until grass becomes established, keep the soil in your newly planted lawn thoroughly moist, but not too moist. Too much water can wash away seeds or drown young plants.

Choose eco-friendly products for your home and garden. Look for this symbol before you buy.
Caring for an Established Lawn

Water—just enough!
- Don’t overwater. Check the soil moisture with a trowel. The top two to three inches should feel almost dry before you add more water.
- Water enough to send the roots deep into the soil. When you think you've watered enough, push a trowel into the soil and lift it forward. If the soil isn’t damp down to four or six inches, keep watering until it is. Keep track of how long you water for next time.
- Water slowly so that water stays on your lawn and doesn’t run off. Overwatering is one way pesticides and fertilizers find their way to storm drains.
- If water runs off or pools even with slow irrigation, your soil may be compacted—which makes it hard for healthy roots to grow. See Restoring a lawn to health for tips on addressing this problem.
- Know your soil type. Clay soils hold more moisture and dry out more slowly, and need less frequent watering. Sandy soils dry out faster.

Grass clippings: Home-grown fertilizer
Unless your soil is very sandy, you should not need to add fertilizer (nutrients) to your lawn.
- Grass clippings left on the lawn after mowing can provide most of the nutrients your lawn needs. Clippings must be small enough to decompose quickly without forming a mat on top of the living grass. See Mowing a healthy lawn.
- Synthetic or quick-release fertilizers, if misapplied, can “kill” the soil by killing the good bacteria and destroying the supporting soil structure.
- If you do need to feed your lawn, use organic or slow-release fertilizers such as sulfur- or polymer-coated urea.

Mowing a healthy lawn
- Mow when the grass is dry.
  - In general, cut no more than 1/3 of the leaf blade when you mow, and keep mower blades sharp. Cutting off too much or wounding grass with a dull blade stresses the lawn and invites pests and diseases.
  - During warm weather months, cut the grass higher to help the soil hold onto water.
  - Change your mowing pattern or direction often to avoid compacted mower tracks.
  - If blades of grass are turning yellow and orange powder comes off onto your hands, your lawn has rust disease and you should collect lawn clippings and throw them away. Control and prevent rust with good lawn care practices, including fertilizing with organic or slow-release fertilizers.

Dealing with weeds
A completely weed-free lawn is... unnatural! But a healthy lawn will crowd out most weeds. Think about how many weeds you can tolerate.
- Dig weeds by hand before they go to seed, and try to pull out the roots. A forked-hand weeder picks up weeds such as dandelions by the crown so that the tender tap root comes too. There is also a foot-powered, stand-up tool that works well.
- Reserve bare spots so weeds can’t fill in. Sprinkle grass seed and water regularly with a fine spray until grass is established.
- Don’t mow grass too short. Taller blades can shade the soil enough to prevent some weed seeds from sprouting.
- Avoid weed-and-feed fertilizers because the herbicides in these products may drift to other parts of your garden, and in some cases even kill shallow-rooted trees.

Restoring a Lawn to Health
A healthy lawn needs air, water, and nutrients reaching the roots. An old or neglected lawn, or one that gets heavy use, may have a thick layer of thatch, or the soil may be compacted so that roots cannot grow well.

Give it air!
A lawn’s root system needs air to grow, and grow deep into the soil. If you can’t push a screwdriver five or six inches into the soil, or if water pools on the surface, you should aerate your lawn. Areas where there is heavy foot traffic or where grass looks thin are good places to check.
- Use a hollow-tined aerator that removes plugs of soil. Aerators can be foot-operated or motorized, and rented from hardware stores or borrowed from tool libraries.
- For best results, aerate during your lawn’s growing season.

The day before you aerate, water the lawn until the soil is moist five to six inches deep. This will help you push the aerator deeper.
- Leave the plugs on the lawn. When they have dried out, break them up with a rake.

Removing thatch
Thatch is a matted layer of living and dead grass stems and roots that can build up between the green blades and the soil surface. A half-inch of thatch can help your lawn retain moisture and block weeds, but a thicker layer can keep air and water from reaching the roots. If your lawn is a bouncy feel when you walk on it, thatch is probably building up. Aeration can help with thatch.

Some Preferred Grasses for California
“Cool season” native bunch grasses (growing season is during cool weather)
- Blue wild rye (Elymus glaucus): Spreading habit, good soil stabilizer for slopes.
- Creeping wild rye (Leymus triticoides): Sod-forming, spreading, dependable groundcover.
- California fescue (Festuca californica): Good in shredded shade.
- Giant needlegrass (Achnatherum coronatum): suited to dry, sunny areas.
- Seashore bentgrass (Agrostis pallens): Also called San Diego or dune bentgrass; also Native Bentgrass™

“Warm season” grasses (growing season is during warm weather)
- St. Augustinegrass (Stenotaphrum secundatum): Most shade-tolerant of warm season grasses.
- Buffalograss (Buchloe dactyloides): Cannot tolerate shade, dies back in winter. UC Verde™, developed by the University of California, has a longer growing season than other varieties.
- Blue Grama (Bouteloua gracilis): Good in hot, dry areas; has a brief dormant season in cool weather.

Sod
- See www.deltabluegrass.com for trademarked native, low-water sod options in northern California; or www.ssseeds.com in southern California and the central coast.