

Outside:

1. Put a layer of mulch around trees and plants. Chunks of bark, peat moss or gravel slows down evaporation. **Saves 750 to 1,500 gallons** a month.
2. If you have a pool, use a pool cover to cut down on evaporation. It will also keep your pool cleaner and reduce the need to add chemicals. **Saves 1,000 gallons** a month.
3. Water during the cool parts of the day. Early morning is better than dusk since it helps prevent the growth of fungus. **Saves 300 gallons**.
4. Don't water the lawn on windy days. There's too much evaporation. **Can waste up to 300 gallons** in one watering.
5. Cut down watering on cool and overcast days and don't water in the rain. Adjust or deactivate automatic sprinklers. **Can save up to 300 gallons** each time.
6. Set lawn mower blades one notch higher. Longer grass means less evaporation. **Saves 500 to 1,500 gallons** each month.
7. Have an evaporative air conditioner? Direct the water drain line to a flower bed, tree base, or lawn.
8. Drive your car onto a lawn to wash it. Rinse water can help water the grass.
9. Tell your children not to play with the garden hose. **Saves 10 gallons** a minute.
10. If you allow your children to play in the sprinklers, make sure it's only when you're watering the yard--if it's not too cool at that time of day.
11. Xeriscape--replace your lawn and high-water-using trees and plants with less thirsty ones. But do this only in wet years. Even drought resistant plantings take extra water to get them going. That'll **save 750 to 1,500 gallons** a month.
12. When taking your car to a car wash--a good idea for saving water--be sure it's one of the many that recycles its wash water.
13. Dispose of hazardous materials properly! One quart of oil can contaminate 250,000 gallons of water, effectively eliminating that much water from our water supply. Contact your city or county for proper waste disposal options.

While Shopping

Water is an essential ingredient in most manufacturing operations. Especially for those 1 billion of us in the high-consumption class, cutting down on our purchases of material things--from clothes and shoes to paper and appliances--**conserves and protects water supplies as effectively as installing a low-flush toilet does.** As with so many natural resources, as long as prices in the marketplace fail to reflect full social and ecological costs, voluntary changes in consumption patterns will play an important role in the quest for sustainability.

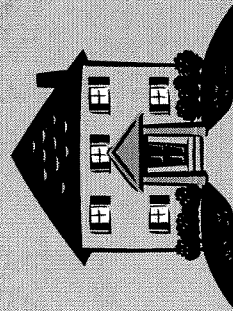
- A kilogram (2.2 lbs) of hamburger or steak produced by a typical California beef cattle operation, for instance, uses some 20,500 liters (5,400 gal.) of water.
- We rarely think about water when we see an automobile, for example, but producing a typical U.S. car requires more than 50 times its weight in water!
- Producing 1 serving (4.3 oz.) of tomatoes requires 8 gallons of water.
- Producing 1 serving (4.6 oz.) of oranges requires 14 gallons of water.
- Producing 1 serving (2 oz.) of pasta requires 36 gallons of water.
- Producing 1 serving (8 fl. oz.) of milk requires 48 gallons of water.
- Producing 1 serving (8 oz.) of chicken requires 330 gallons of water.

3. Your Home. Your Community. Your Environment



did you know...

- The activities you carry out around your home could affect local streams, rivers, and lakes even though you may live miles away from those types of wildlife areas.
- Water from a garden hose or a storm can carry automotive and household materials, such as motor oil, fertilizers, household cleaners, and garbage, to local streams, rivers, and lakes through a storm drain.
- One quart of motor oil spilled down a storm drain can contaminate 250,000 gallons of water.
- Lawn clippings and other yard waste deposited in storm drains can affect water quality of creeks and streams.
- Over-application of fertilizer can wash down into a storm drain and enter creeks and streams making algae grow, which deprives fish of oxygen.
- Over-watering lawns can cause soil erosion that could eventually obstruct flood control channels and create seepage problems for your neighbors. Plus, it's a waste of water.



Californians measure their quality of life by the **homes** they live in, the **communities** they work and reside in, and the **natural environment** they rest and recreate in.

As a California home builder, we've gone to great lengths to **protect the environment** during the construction of your new home.

We would like to **thank you** for **doing your part** in maintaining a quality of life we can all be proud of for generations to come.

Provided by:



For more information, contact the California Building Industry Association at 916/443-7933 or check out our web site at www.cbia.org



your home.
your **community.**
your **environment.**

Simple things you can do in and around your new home to protect and preserve clean water.



congratulations on the purchase of your new home!

As you begin to work on making your new house your home, California's home builders want to remind you of the **important role you can play** in protecting and preserving our state's valuable water resources and environment.

How you perform the special and routine activities designed to maintain the beauty and comfort of your home — from painting a room to caring for your lawn and garden — **can have a significant impact** on the quality of California's water resources and the region's environment.

When your home was built, **extensive precautions were taken by home builders** to prevent the local creeks, streams, and waterways from being polluted by water runoff and debris at the construction site. The low plastic fences and hay bales you may have seen in the construction areas represent the types of environmental management measures used to limit erosion and storm water runoff.

Now it is your turn. Here are several simple suggestions for you to follow to do your part in keeping water clean for your community and the environment.

what you can do to help keep the water clean...

Properly use and store all toxic products, including solvents, paints and cleaners. Use completely paint cleaners and other products or share leftovers with a neighbor.

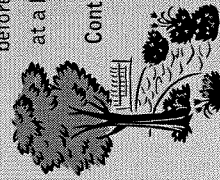
Take household hazardous materials containers, such as pesticides and used motor oil to a hazardous material collection center. Contact the County for the nearest location.

Use kitty litter or other absorbent materials to clean spills, rather than hosing down spills. Depending on the substance, dispose used absorbent materials in the trash can or at a hazardous materials collection center.

Rinse water-based paint brushes in the sink. Filter and reuse paint thinner or brush cleaners. Dispose of used thinner, oil and latex paint at a hazardous materials collection center.

Use pesticides, herbicides and fertilizers in accordance with label instructions. Do not apply before rain and always dispose of leftovers at a hazardous materials collections center.

Control erosion during landscaping projects to prevent dirt and debris from entering storm drains.

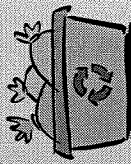


...and preserve the environment.

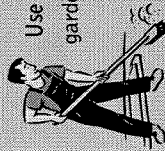
Conserve water by using landscaping materials that are suited to your climate.

Throw all rubbish in tightly sealed trash cans. Recycle

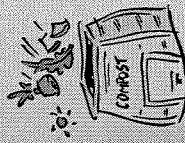
reusable materials, but be sure materials won't blow out of the recycling bin before they are collected. Pick up and properly dispose of litter in your neighborhood.



Use a broom rather than a hose to clean up garden clippings. Put leaves and clippings in a trash can or a compost pile.



Divert rain spouts and garden hoses away from paved surfaces and onto grass to allow water to filter through the soil.



Program your watering system to water less during the rainy season, and remember to turn the sprinklers off on expected rainy days.



Conserve water when washing your car. Wash engines at a 'Do it Yourself Car Wash' where the drainage is not connected to the storm drain.



Pick up animal waste and dispose in the trash can.

4. Household Tips to Help Ocean Pollution

Help Prevent Ocean Pollution:

Do your part to prevent water pollution in our creeks, rivers, bays and ocean.

Clean beaches and healthy creeks, rivers, bays, and ocean are important to Orange County. However, many common household activities can lead to water pollution if you're not careful.

REMEMBER THE WATER IN YOUR STORM DRAIN IS NOT TREATED BEFORE IT ENTERS OUR WATERWAYS

Litter, oil, chemicals and other substances that are left on your yard or driveway can be blown or washed into storm drains that flow to the ocean. Over-watering your lawn and washing your car can also flush materials into the storm drains. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated.

You would never pour soap, fertilizers or oil into the ocean, so don't let them enter streets, gutters or storm drains. Follow the easy tips in this brochure to help prevent water pollution.

For more information,

please call the

Orange County Stormwater

Program at (714) 567-6363

or visit

www.ocwatersheds.com.

To report spills, call the

Orange County 24-Hour Water Pollution Problem Reporting Hotline
at (714) 567-6363.

For emergencies, call 911.

The tips contained in this brochure provide useful information to help prevent water pollution while performing everyday household activities. If you have other suggestions, please contact your city's stormwater representative or call the Orange County Stormwater Program.



Household Tips



The Ocean Begins at Your Home

PROJECT
Pollution
PREVENTION

Pollution Prevention

Household Activities

- **Do not rinse spills with water!** Sweep outdoor spills and dispose of in the trash. For wet spills like oil, apply cat litter or another absorbent material, then sweep and bring to a household hazardous waste collection center (HHWCC).
- Securely cover trash cans.
- Take household hazardous waste to a household hazardous waste collection center.
- Store household hazardous waste in closed, labeled containers inside or under a cover.
- Do not hose down your driveway, sidewalk or patio. Sweep up debris and dispose of in trash.
- Always pick up after your pet. Flush waste down the toilet or dispose of in the trash.
- Bathe pets indoors or have them professionally groomed.

Household Hazardous Wastes include:

- ▲ Batteries
- ▲ Paint thinners, paint strippers and removers
- ▲ Adhesives
- ▲ Drain openers
- ▲ Oven cleaners
- ▲ Wood and metal cleaners and polishes
- ▲ Herbicides and pesticides
- ▲ Fungicides/wood preservatives
- ▲ Automotive fluids and products
- ▲ Grease and rust solvents
- ▲ Thermometers and other products containing mercury
- ▲ Fluorescent lamps
- ▲ Cathode ray tubes, e.g. TVs, computer monitors
- ▲ Pool and spa chemicals

Gardening Activities

- Follow directions on pesticides and fertilizers, (measure, do not estimate amounts) and do not use if rain is predicted within 48 hours.
- Water your lawn and garden by hand to control the amount of water you use. Set irrigation systems to reflect seasonal water needs. If water flows off your yard and onto your driveway or sidewalk, your system is over-watering.
- Mulch clippings or leave them on the lawn. If necessary, dispose in a green waste container.
- Cultivate your garden often to control weeds.

Washing and Maintaining Your Car

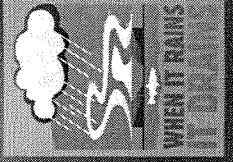
- Take your car to a commercial car wash whenever possible.
- Choose soaps, cleaners, or detergents labeled "non-toxic," "phosphate free" or "biodegradable." Vegetable and citrus-based products are typically safest for the environment, **but even these should not be allowed into the storm drain.**
- Shake floor mats into a trash can or vacuum to clean.

- Do not use acid-based wheel cleaners and "hose off" engine degreasers at home. They can be used at a commercial facility, which can properly process the washwater.
- **Do not dump washwater onto your driveway, sidewalk, street, gutter or storm drain.** Excess washwater should be disposed of in the sanitary sewers (through a sink, or toilet) or onto an absorbent surface like your lawn.
- Use a nozzle to turn off water when not actively washing down automobile.
- Monitor vehicles for leaks and place pans under leaks. Keep your car well maintained to stop and prevent leaks.
- Use cat litter or other absorbents and sweep to remove any materials deposited by vehicles. Contain sweepings and dispose of at a HHWCC.
- Perform automobile repair and maintenance under a covered area and use drip pans or plastic sheeting to keep spills and waste material from reaching storm drains.
- **Never pour oil or antifreeze in the street, gutter or storm drains.** Recycle these substances at a service station, HHWCC, or used oil recycling center. For the nearest Used Oil Collection Center call 1-800-CLEANUP or visit www.1800CLEANUP.ORG.

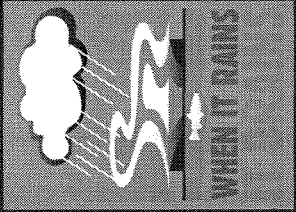
For locations and hours of Household Hazardous Waste Collection Centers in Anaheim, Huntington Beach, Irvine and San Juan Capistrano, call (714)834-6752 or visit www.oilandfills.com.

5. After the Storm

After the Storm



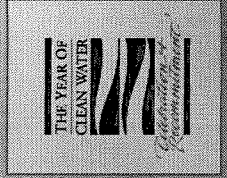
A Citizen's Guide to Understanding Stormwater



For more information contact:

Contact name
Contact agency
Address
Address1
Phone number
E-mail address

or visit
www.epa.gov/npdes/stormwater
www.epa.gov/nps



EPA 833-B-03-002

January 2003

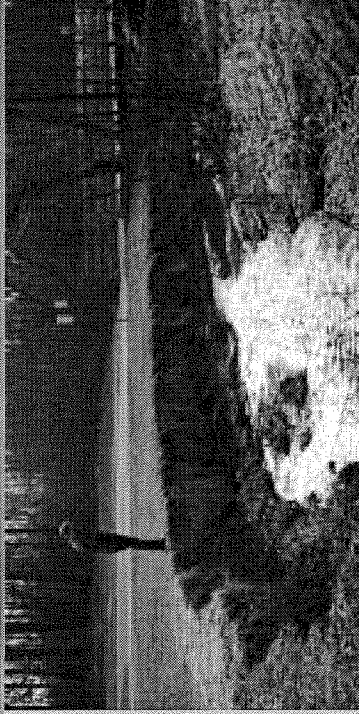
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Process Chlorine Free Recycled Paper

What is stormwater runoff?

Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.



Why is stormwater runoff a problem?



Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

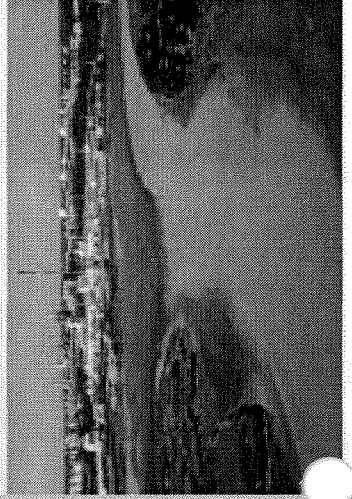
The effects of pollution

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- ◆ Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- ◆ Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- ◆ Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- ◆ Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- ◆ Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.



- ◆ Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.



Stormwater Pollution Solutions

Residential



Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.

Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- ◆ Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- ◆ Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- ◆ Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- ◆ Cover piles of dirt or mulch being used in landscaping projects.



Septic systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- ◆ Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years).
- ◆ Don't dispose of household hazardous waste in sinks or toilets.



Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.

- ◆ Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- ◆ Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.



Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters.

- ◆ When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method. Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.



Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.



Residential landscaping

Permeable Pavement—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.

Rain Barrels—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.



Rain Gardens and Grassy Swales—Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.



Vegetated Filter Strips—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.

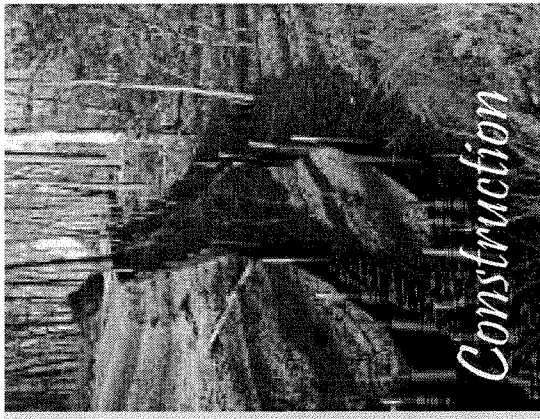


Commercial

- ◆ Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.
- ◆ Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- ◆ Cover grease storage and dumpsters and keep them clean to avoid leaks.
- ◆ Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- ◆ Divert stormwater away from disturbed or exposed areas of the construction site.
- ◆ Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- ◆ Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.



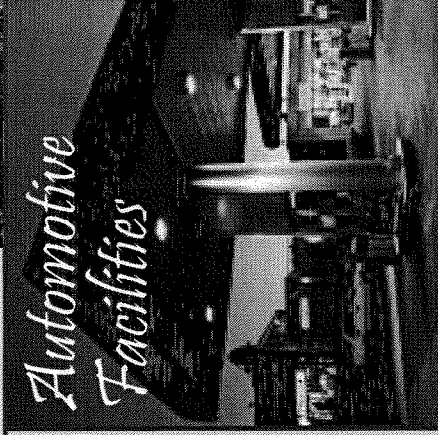
Construction



Agriculture

Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

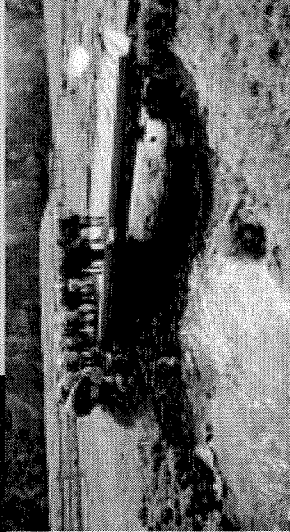
- ◆ Keep livestock away from streambanks and provide them a water source away from waterbodies.
- ◆ Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- ◆ Vegetate riparian areas along waterways.
- ◆ Rotate animal grazing to prevent soil erosion in fields.
- ◆ Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.



Automotive Facilities

Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

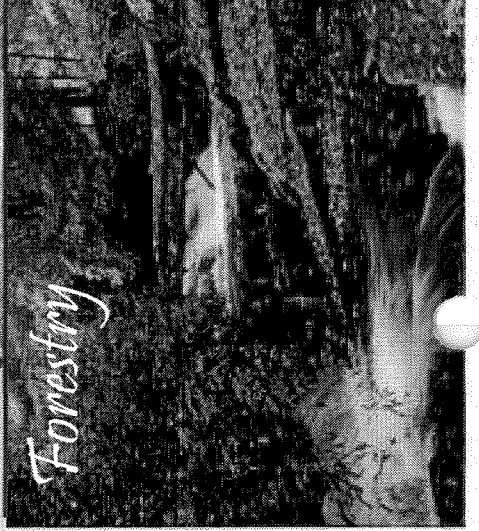
- ◆ Clean up spills immediately and properly dispose of cleanup materials.
- ◆ Provide cover over fueling stations and design or retrofit facilities for spill containment.
- ◆ Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- ◆ Install and maintain oil/water separators.



Forestry

Improperly managed logging operations can result in erosion and sedimentation.

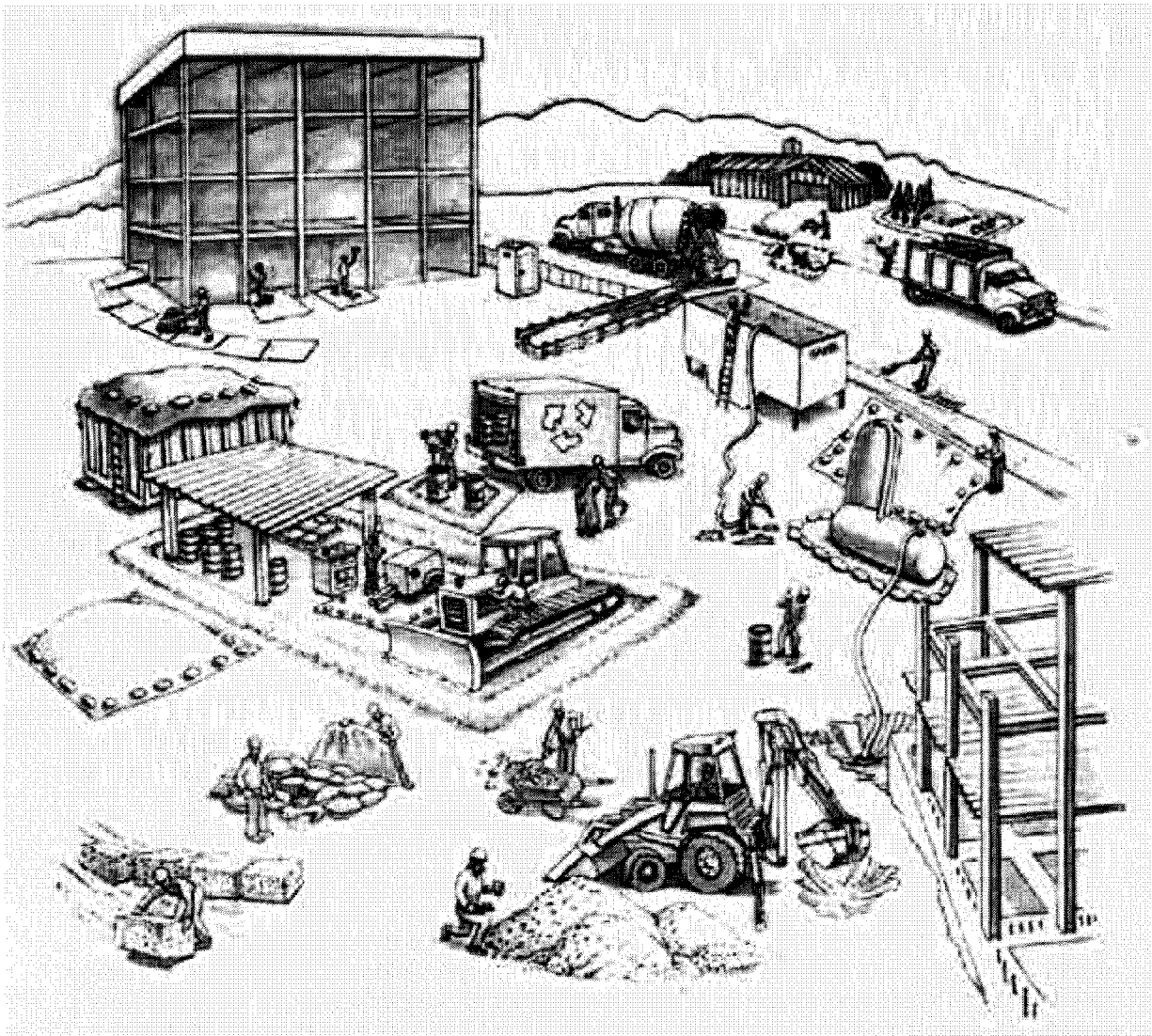
- ◆ Conduct preharvest planning to prevent erosion and lower costs.
- ◆ Use logging methods and equipment that minimize soil disturbance.
- ◆ Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- ◆ Construct stream crossings so that they minimize erosion and physical changes to streams.
- ◆ Expedite revegetation of cleared areas.



6. Blueprint for a Clean Ocean

Blueprint for a Clean Ocean

Best Management Practices to Prevent Stormwater Pollution from Construction-Related Activities



Introduction

Stormwater pollution is rapidly growing in importance as a national environmental issue. In California, stormwater pollution is a major source of water pollution. To help combat the problems of stormwater pollution, federal and state governments have developed a program for monitoring and permitting discharges to municipal storm drain systems, creeks, and water bodies such as the Pacific Ocean.

Municipalities in the Orange County Area are required by the Clean Water Act to develop stormwater management programs that include requirements for construction activities. Your construction project will need to comply with local municipal requirements. If your construction activity will disturb five acres or more, you must also obtain coverage under the General Construction Activity Permit (see Requirements for Dischargers).

Blueprint for a Clean Ocean is an introductory guide to stormwater quality control on construction sites. It contains several principles and techniques that you can use to help prevent stormwater pollution. This booklet has been developed as a resource for all general contractors, home builders, and subcontractors working on construction sites.

Blueprint for a Clean Ocean is not a design manual or a Stormwater Pollution Prevention Plan (SWPPP) (see Requirements for Dischargers). For more information on the General Permit, designing stormwater quality controls, or producing a Stormwater Pollution Prevention Plan, please refer to the California Storm Water Best Management Practice Handbook for Construction Activity, or consult your local program or the SWRCB (see below). Please note that this booklet is concerned only with the management of construction sites and activities during construction.

Stormwater Pollution

Storm Drain System

Stormwater or runoff from sources like sprinklers and hoses flows over the ground into the storm drain system. In the Orange County Area, storm drain systems consist of gutters, storm drains, underground pipes, open channels, culverts, and creeks. Storm drain systems are designed to drain directly to the Pacific Ocean with no treatment.

Pollution From Construction Sites

Stormwater runoff is part of a natural hydrologic process. However, land development and construction activities can significantly alter natural drainage patterns and pollute stormwater runoff. Runoff picks up pollutants as it flows over the ground or paved areas and carries these pollutants into the storm drain system. Common sources of pollutants from construction sites include: sediments from soil erosion; construction materials and waste (e.g., paint, solvents, concrete, drywall); landscaping runoff containing fertilizers and pesticides; and spilled oil, fuel, and other fluids from construction vehicles and heavy equipment.

Adverse Effects from Stormwater Pollution

Stormwater pollution is a major source of water pollution in California. It can cause declines in fisheries, disrupt habitats, and limit water recreation activities. Even more importantly, stormwater pollution poses a serious threat to the overall health of the ecosystem.

For more information on stormwater requirements, call the State Water Resources Control Boards Stormwater Information Line at (916) 657-1146 or your local program.

Requirements for Dischargers

Municipal Stormwater Program

Municipalities in the Los Angeles Area are required by federal regulations to develop programs to control the discharge of pollutants to the storm drain system, including the discharge of pollutants from construction sites and areas of new development or significant redevelopment. As a result, your development and construction projects may be subject to new requirements designed to improve stormwater quality such as, expanded plan check and review, new contract specifications, and increased site inspection. For more information on municipal requirements, please contact the municipal representative listed on the back cover of this booklet.

Projects Equal To Or Greater Than 1 Acres

If your construction activity will disturb one acre or more, you must obtain coverage under the General Construction Activity Storm Water Permit (General Construction Permit) issued by the State Water Resources Control Board (SWRCB) for stormwater discharges associated with construction activity. To obtain coverage under the General Permit, a Notice of Intent (NOI) must be filed with the SWRCB. The General Construction Permit requires you to prepare and carry out a "Stormwater Pollution Prevention Plan" or SWPPP. Your SWPPP must identify appropriate stormwater pollution prevention measures or best management practices (BMPs), like the ones described in this booklet, to reduce pollutants in stormwater discharges from the construction site both during and after construction is completed. A best management practice or BMP is defined as any program, technology, process, practice, operating method, measure, or device which controls, prevents, removes, or reduces pollution.

Projects Less Than 1 Acre

If your project is less than one acre, you may still need to use BMPs to comply with local municipal requirements. Check with the local planning or engineering department for details.

Best Management Practices

General Practices

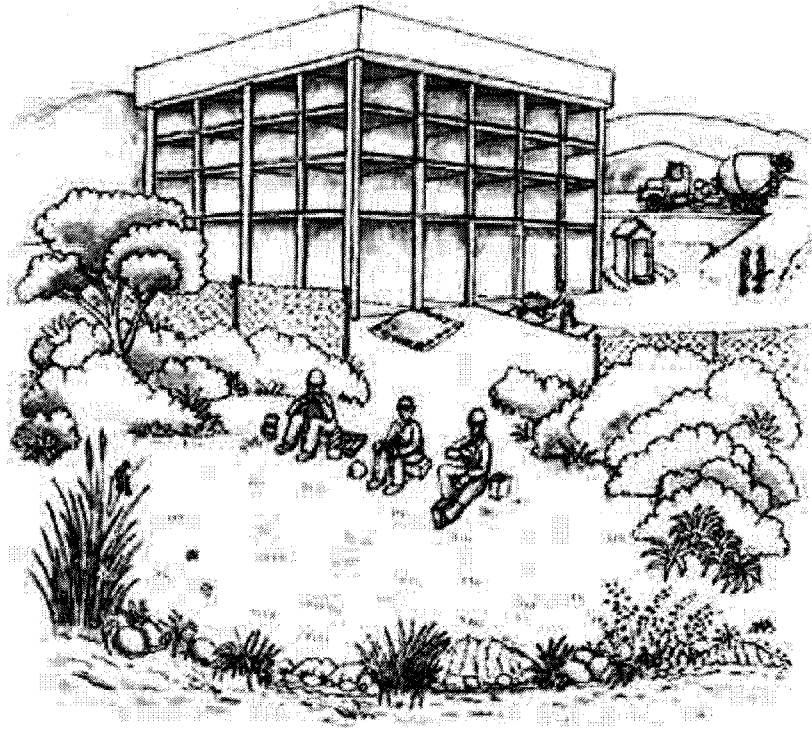
The following are some general principles that can significantly reduce pollution from construction activity and help make compliance with stormwater regulations easy:

- Identify all storm drains, drainage swales and creeks located near the construction site and make sure all subcontractors are aware of their locations to prevent pollutants from entering them.
- Clean up leaks, drips, and other spills immediately so they do not contact stormwater.
- Refuel vehicles and heavy equipment in one designated location on the site and take care to clean up spills immediately.
- Wash vehicles at an appropriate off-site facility. If equipment must be washed on-site, do not use soaps, solvents, degreasers, or steam cleaning equipment, and prevent wash water from entering the storm drain. If possible, direct wash water to a low point where it can evaporate and/or infiltrate.
- Never wash down pavement or surfaces where materials have spilled. Use dry cleanup methods whenever possible.

- Avoid contaminating clean runoff from areas adjacent to your site by using berms and/or temporary or permanent drainage ditches to divert water flow around the site. Reduce stormwater runoff velocities by constructing temporary check dams and/or berms where appropriate.
- Protect all storm drain inlets using filter fabric cloth or other best management practices to prevent sediments from entering the storm drainage system during construction activities.
- Keep materials out of the rain - prevent runoff pollution at the source. Schedule clearing or heavy earth moving activities for periods of dry weather. Cover exposed piles of soil, construction materials and wastes with plastic sheeting or temporary roofs. Before it rains, sweep and remove materials from surfaces that drain to storm drains, creeks, or channels.

For more information on the General Permits, call the State Water Resources Control Board's Stormwater Information Line at (916) 657-1146 or your local program.

- Keep pollutants off exposed surfaces. Place trash cans around the site to reduce litter. Dispose of non-hazardous construction wastes in covered dumpsters or recycling receptacles.
- Practice source reduction - reduce waste by ordering only the amount you need to finish the job.
- Do not over-apply pesticides or fertilizers and follow manufacturers instructions for mixing and applying materials.
- Recycle leftover materials whenever possible. Materials such as concrete, asphalt, scrap metal, solvents, degreasers, cleared vegetation, paper, rock, and vehicle maintenance materials such as used oil, antifreeze, batteries, and tires are recyclable.
- Dispose of all wastes properly. Materials that cannot be reused or recycled must be taken to an appropriate landfill or disposed of as hazardous waste. Never throw debris into channels, creeks or into wetland areas. Never store or leave debris in the street or near a creek where it may contact runoff.
- Illegal dumping is a violation subject to a fine and/or time in jail. Be sure that trailers carrying your materials are covered during transit. If not, the hauler may be cited and fined.
- Train your employees and inform subcontractors about the stormwater requirements and their own responsibilities.



Specific Practices

Following is a summary of specific best management practices for erosion and sediment control and contractor activities. For more information on erosion and sediment control BMPs and their design, please refer to the California Storm Water Best Management Practice Handbook for Construction Activity (2003).

Erosion Prevention and Sediment Control

Prevent erosion

Soil erosion is the process by which soil particles are removed from the land surface, by wind, water and/or gravity. Soil particles removed by stormwater runoff are pollutants that when deposited in local creeks, lakes, and the Pacific Ocean, can have negative impacts on aquatic habitat. Exposed soil after clearing, grading, or excavation is easily eroded by wind or water. The following practices will help prevent erosion from occurring on the construction site:

- Plan the development to fit the topography, soils, drainage pattern and natural vegetation of the site.
- Delineate clearing limits, easements, setbacks, sensitive or critical areas, trees, drainage courses, and buffer zones to prevent excessive or unnecessary disturbances and exposure.
- Phase grading operations to reduce disturbed areas and time of exposure.
- Avoid excavation and grading during wet weather.
- Limit on-site construction routes and stabilize construction entrance(s).
- Remove existing vegetation only when absolutely necessary.

- Construct diversion dikes and drainage swales to channel runoff around the site.
- Use berms and drainage ditches to divert runoff around exposed areas. Place diversion ditches across the top of cut slopes
- Plant vegetation on exposed slopes. Where replanting is not feasible, use erosion control blankets (e.g., jute or straw matting, glass fiber or excelsior matting, mulch netting).
- Consider slope terracing with cross drains to increase soil stability.
- Cover stockpiled soil and landscaping materials with secured plastic sheeting and divert runoff around them.
- As a back-up measure, protect drainage courses, creeks, or catch basins with straw bales, silt fences and/or temporary drainage swales.
- Once grading is completed, stabilize the disturbed areas using permanent vegetation as soon as possible.
- Conduct routine inspections of erosion control measures especially before and immediately after rainstorms, and repair if necessary.

Control sediment

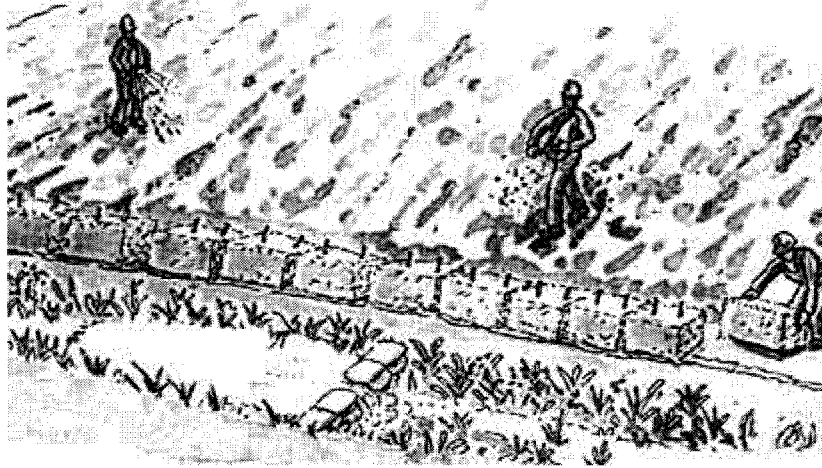
Sedimentation is defined as the process of depositing sediments picked up by runoff. Sediments consist of soil particles, clays, sands, and other minerals. The purpose of sediment control practices is to remove sediments from stormwater before they are transported off-site or reach a storm drain inlet or nearby creek. The most effective sediment control practices reduce runoff velocity and trap or detain runoff allowing sediments to settle out.

- Use terracing, rip rap, sand bags, rocks, straw bales, and/or temporary vegetation on slopes to reduce runoff velocity and trap sediments. Do not use asphalt rubble or other demolition debris for this purpose.
- Use check dams in temporary drains and swales to reduce runoff velocity and promote sedimentation.
- Protect storm drain inlets from sediment-laden runoff. Storm drain inlet protection devices include sand bag barriers, filter fabric fences, block and gravel filters, and excavated drop inlet sediment traps.
- Collect and detain sediment-laden runoff in sediment traps (an excavated or bermed area or constructed device) to allow sediments to settle out prior to discharge.
- Use sediment controls and filtration to remove sediments from water generated by dewatering.
- Prevent construction vehicle tires from tracking soil onto adjacent streets by constructing a temporary stone pad with a filter fabric underliner near the site exit where dirt and mud can be removed.
- When cleaning sediments from streets, driveways and paved areas on construction sites, use dry sweeping methods where possible. If water must be used to flush pavement, collect runoff to settle out sediments and protect storm drain inlets.

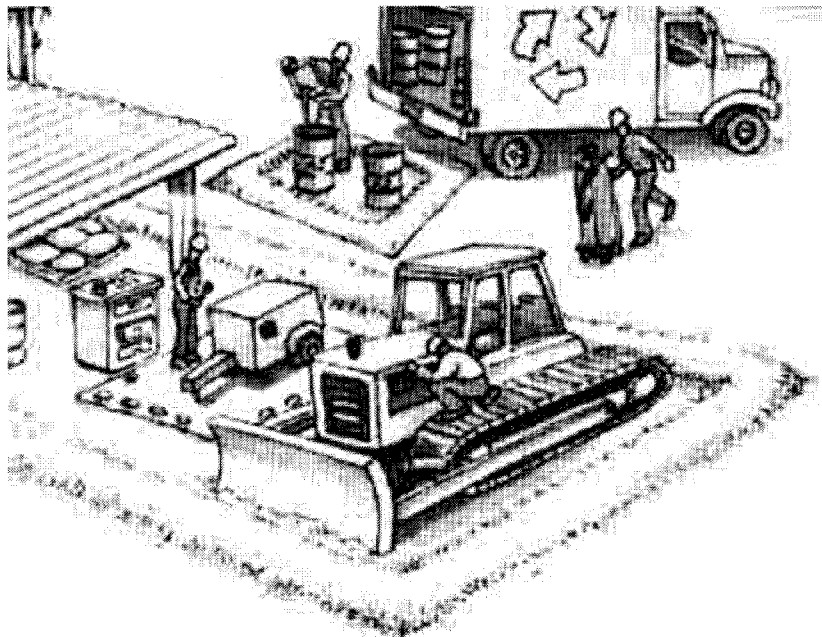
Note: Performance of erosion and sediment controls is dependent on proper installation, routine inspections and maintenance of the controls. Most of the BMPs described above are temporary

and if left alone can quickly fall into disrepair and/or become ineffective. Routine inspections and maintenance, particularly before and after a storm event, must be Part of erosion and sediment control plan.

The California Storm Water Best Management Practices Handbook for Construction Activity provides specific details and design criteria for erosion and sediment control plans.



Drainage swales channel runoff around a construction site. Planting temporary vegetation on freshly graded areas, and trenching and staking straw bales and/or silt fences downslope are common techniques for preventing erosion and controlling sediment.



Make sure equipment repair area is bermed or well away from creeks and storm drains.

General Site Maintenance

Prevent spills and leaks

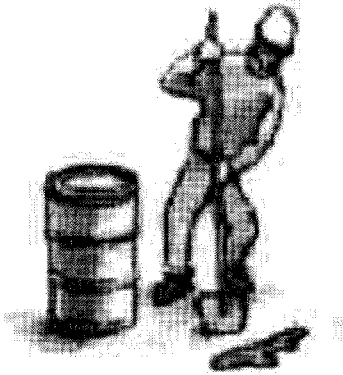
Poorly maintained vehicles and heavy equipment leaking fuel, oil, antifreeze, or other fluids on the construction site are common sources of stormwater pollution and soil contamination. Construction material spills can also cause serious problems. Careful site planning, preventive maintenance, and good materials handling practices can eliminate most spills and leaks.

- Maintain all vehicles and heavy equipment. Inspect frequently for and repair leaks.
- Designate specific areas of the construction site, well away from creeks or storm drain inlets, auto and equipment parking and routine vehicle and equipment maintenance.
- Perform major maintenance, repair jobs and vehicle and equipment washing off-site when feasible, or in designated and controlled areas on-site.
- If you must drain and replace motor oil, radiator coolant, or other fluids on-site, use drip pans or drop cloths to catch drips and spills. Collect all spent fluids, store in labeled separate containers, and recycle whenever possible. Note that in order to be recyclable, such liquids must not be mixed with other fluids. Non-recycled fluids generally must be disposed of as hazardous wastes.

Clean up spills immediately after they happen

When vehicle fluids or materials such as paints or solvents are spilled, cleanup should be immediate, automatic, and routine.

- Sweep up spilled dry materials (e.g., cement, mortar, or fertilizer) immediately. Never attempt to "wash them away" with water, or bury them. Use only minimal water for dust control.
- Clean up liquid spills on paved or impermeable surfaces using "dry" cleanup methods (e.g., absorbent materials like cat litter, sand or rags).
- Clean up spills on dirt areas by digging up and properly disposing of the contaminated soil.
- Report significant spills to the appropriate spill response agencies immediately (See reference list on the back cover of this booklet for more information).



Clean up spills on dirt areas by removing contaminated soil.

Note: Used cleanup rags that have absorbed hazardous materials must either be sent to a certified industrial laundry or dry cleaner, or disposed of through a licensed hazardous waste disposal company.

Store materials under cover

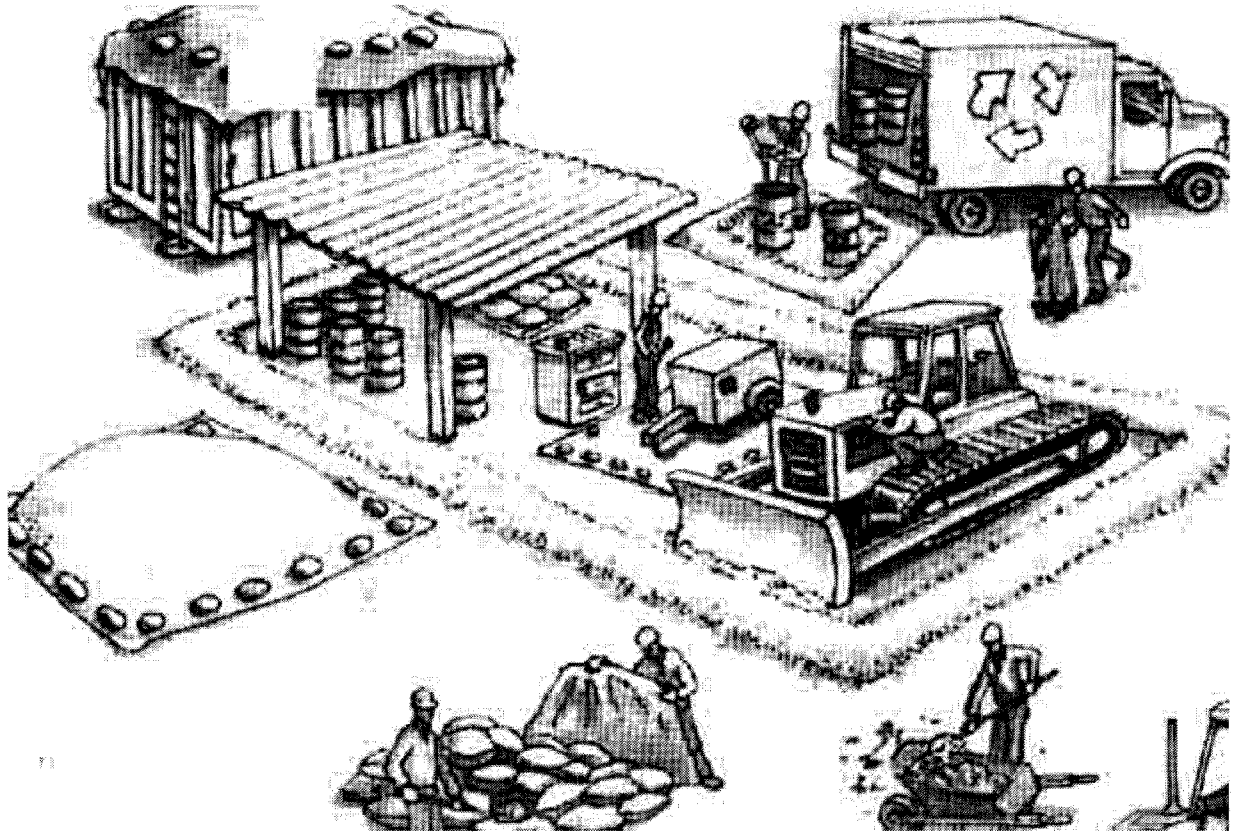
Wet and dry building materials with the potential to pollute runoff should be stored under cover and/or surrounded by berms when rain is forecast or during wet weather.

- Store stockpiled materials and wastes under a temporary roof or secured plastic sheeting or tarp.
- Berm around storage areas to prevent contact with runoff.
- Plaster or other powders can create large quantities of suspended solids in runoff, which may be toxic to aquatic life and cause serious environmental harm even if the materials are inert. Store all such potentially polluting dry materials -especially open bags- under a temporary roof or inside a building, or cover securely with an impermeable tarp. By storing dry materials under a roof, you may also help protect air quality, as well as water quality.
- Store containers of paints, chemicals, solvents, and other hazardous materials in accordance with secondary containment regulations and under cover during rainy periods.

Cover and maintain dumpsters

Open or leaking dumpsters can be a source of stormwater pollution.

- Cover open dumpsters with plastic sheeting or a tarp during rainy weather. Secure the sheeting or tarp around the outside of the dumpster. If your dumpster has a cover, close it.
- If a dumpster is leaking, contain and collect leaking material. Return the dumpster to the leasing company for repair/exchange.
- Do not clean dumpsters on-site. Return to leasing company for periodic cleaning, if necessary.



Store building materials under cover. Make sure dumpsters are properly covered to keep out rain.

Collect and properly dispose of paint removal wastes

Paint removal wastes include chemical paint stripping residues, paint chips and dust, sand blasting material and wash water. These wastes contain chemicals that are harmful to the wildlife in our creeks and the water bodies they flow to. Keep all paint wastes away from the gutter, street, and storm drains.

- Non-hazardous paint chips and dust from dry stripping and sand blasting may be swept up or collected in plastic drop cloths and disposed of as trash. Chemical paint stripping residue and chips and dust from marine paints or paints containing lead or tributyl tin must be disposed of as a hazardous waste.
- When stripping or cleaning building exteriors with high-pressure water, cover or berm storm drain inlets. If possible (and allowed by your local wastewater treatment plant), collect (mop or vacuum) building cleaning water and discharge to the sanitary sewer. Alternatively, discharge non-contaminated wash water onto a dirt area and spade into the soil. Be sure to shovel or sweep up any debris that remains in the gutter and dispose of as garbage.

Clean up paints, solvents, adhesives, and cleaning solutions properly

Although many paint materials can and should be recycled, liquid residues from paints, thinners, solvents, glues, and cleaning fluids are hazardous wastes. When they are thoroughly dry, empty paint cans, used brushes, rags, absorbent materials, and drop cloths are no longer hazardous and may be disposed of as garbage.

- Never clean brushes or rinse paint containers into a street, gutter, storm drain, or creek.

- For water-based paints, paint out brushes to the extent possible and rinse to a drain leading to the sanitary sewer (i.e., indoor plumbing).
- For oil-based paints, paint out brushes to the extent possible, and filter and reuse thinners and solvents. Dispose of unusable thinners and residue as hazardous waste.
- Recycle, return to supplier or donate unwanted water-based (latex) paint. You may be able to recycle clean empty dry paint cans as metal.
- Dried latex paint may be disposed of in the garbage.
- Unwanted paint (that is not recycled), thinners, and sludges must be disposed of as hazardous waste.
- More and more paint companies are recycling excess latex paint (See separate list of "Recyclers and Disposal Services" for more information).

Keep fresh concrete and cement mortars out of gutters, storm drains, and creeks

Concrete and cement-related mortars that wash into gutters and storm drains are toxic to fish and the aquatic environment.

- Avoid mixing excess amounts of fresh concrete or cement mortar on-site.
- Store dry and wet materials under cover, protected from rainfall and runoff.
- Wash out concrete transit mixers only in designated wash-out areas where the water will flow into settling ponds or onto dirt or stockpiles of aggregate base or sand. Pump water from settling ponds to the sanitary sewer, where allowed. Whenever possible, recycle washout by pumping back into mixers for reuse. Never dispose of washout into the street, storm drains, drainage ditches, or creeks.
- Whenever possible, return contents of mixer barrel to the yard for recycling. Dispose of small amounts of excess concrete, grout, and mortar in the trash.

Service and maintain portable toilets

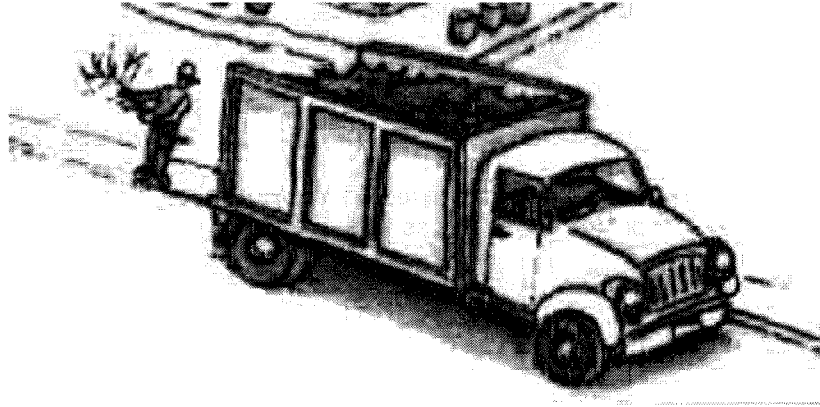
Leaking portable toilets are a potential health and environmental hazard.

- Inspect portable toilets for leaks.
- Be sure the leasing company adequately maintains, promptly repairs, and replaces units as needed.
- The leasing company must have a permit to dispose of waste to the sanitary sewer.

Dispose of cleared vegetation properly

Cleared vegetation, tree trimmings, and other plant material can cause environmental damage if it gets into creeks. Such "organic" material requires large quantities of oxygen to decompose, which reduces the oxygen available to fishes and other aquatic life.

- Do not dispose of plant material in a creek or drainage facility or leave it in a roadway where it can clog storm drain inlets.
- Avoid disposal of plant material in trash dumpsters or mixing it with other wastes. Compost plant material or take it to a landfill or other facility that composts yard waste.



Recycle yard waste and tree prunings at a landfill that chips and composts plant material.

Demolition Waste Management

Make sure all demolition waste is properly disposed of

- Demolition debris that is left in the street or pushed over a bank into a creek bed or drainage facility causes serious problems for flood control, storm drain maintenance, and the health of our environment. Different types of materials have different disposal requirements or recycling options.
- Materials that can be recycled from demolition projects include: metal framing, wood, concrete, asphalt, and plate glass.
- Materials that can be salvaged for reuse from old structures include: doors, banisters, floorboards, windows, 2x4s, and other old, dense lumber.
- Unusable, unrecycleable debris should be confined to dumpsters, covered at night and during wet weather, and taken to a landfill for disposal.
- Hazardous debris such as asbestos must be handled in accordance with specific laws and regulations and disposed of as a hazardous waste. For more information of asbestos handling and disposal regulations, contact the South Coast Air Quality Management District.
- Arrange for an adequate debris disposal schedule to insure that dumpsters do not overflow.

Roadwork and Pavement Construction

Plan roadwork and pavement construction to avoid stormwater pollution

Road paving, surfacing, and asphalt removal happen right in the street, with numerous opportunities for stormwater pollution from the asphalt mix, saw-cut slurry, or excavated material. Properly proportioned asphalt mix and well-compacted pavement avoid a host of water pollution problems.

- Apply concrete, asphalt, and seal coat during dry weather to prevent contaminants from contacting stormwater runoff.

- Cover storm drain inlets and manholes when paving or applying seal coat, slurry seal, fog seal, etc.
- Always park paving machines over drip pans or absorbent materials, since they tend to drip continuously.
- When making saw-cuts in pavement, use as little water as possible. Cover each catch basin completely with filter fabric during the sawing operation and contain the slurry by placing straw bales, sand bags, or gravel dams around the catch basin. After the liquid drains or evaporates, shovel or vacuum the slurry residue from the pavement or gutter and remove from site.
- Wash down exposed aggregate concrete only when the wash water can: (1) flow onto a dirt area; (2) drain onto a bermed surface from which it can be pumped and disposed of properly; or (3) be vacuumed from a catchment created by blocking a storm drain inlet. If necessary, place straw bales downslope, or divert runoff with temporary berms. Make sure runoff does not reach gutters or storm drains.
- Allow aggregate rinse to settle, and pump the water to the sanitary sewer if allowed by your local wastewater authority.
- Never wash sweepings from exposed aggregate concrete into a street or storm drain. Collect and return to aggregate base stockpile, or dispose with trash.
- Recycle broken concrete and asphalt.

Contaminated Poned Stormwater, Groundwater, and Soil Guidance

Look for ponded stormwater, groundwater, and/or soil contamination

Ponded stormwater, groundwater and soil may become contaminated if exposed to hazardous materials. If any of the following conditions apply, contaminated ponded stormwater, groundwater, and/or soil may be present and pose a potential health and environmental hazard:

- The project site is in an area of previous commercial/industrial activity;
- There is a history of illegal dumping on the site or adjacent properties;
- The construction site is subject to a Superfund, state, or local cleanup order;
- Ponded stormwater, groundwater and/or water generated by dewatering exhibits an oily-sheen and/or smells of petroleum;
- Soil appears discolored, smells of petroleum and/or exhibits other unusual properties;
- Abandoned underground storage tanks, drums, or other buried debris are encountered during construction activities; or
- Spills have occurred on the site or adjacent properties involving pesticides and herbicides; fertilizers; detergents; plaster and other products; petroleum products such as fuel, oil, and grease; or other hazardous chemicals such as acids, lime, glues, paints, solvents, and curing compounds.

Take appropriate action

Ponded stormwater, groundwater, or water generated by dewatering that is contaminated cannot be discharged to a street, gutter, or storm drain. If contamination is suspected, the water should be contained and held for testing. Call the appropriate local agency and/or the Regional Water Quality Control Board for further guidance (See reference list on the back cover of this booklet for more information).

Remember: The property owner and the contractor share ultimate responsibility for the activities that occur on the construction site. You may be held responsible for any environmental damage caused by you subcontractors or employees.

Pollution Control Agencies and Sources of Information

Orange County Storm Water Program

(714) 567-6363

Agencies to call in the event of a spill

You are required by law to report all significant releases or suspected significant releases of hazardous materials, including oil.

To report a spill, call the following agencies:

1. Dial (800) 303-0003 or your local emergency response number.
2. Call the Governor's Office of Emergency Services Warning Center, (800) 852-7550 (24 hours).

For spills of "Federal Reportable Quantities" of oil, chemicals, or other hazardous materials to land, air, or water, notify the National Response Center (800-424-8802). If you are not sure whether the spill is of a "reportable quantity," call the federal Environmental Protection Agency (800) 424-9346 for clarification.

For further information, see *California Hazardous Material Spill Release Notification Guidance* (State Office of Emergency Services, Hazardous Materials Division).

Agencies to call if you find or suspect contaminated soil or groundwater

Regional Water Quality Control Board:

California Environmental
Protection Agency (Cal EPA),
Department of Toxic Substances
Control (DTSC) (510) 540-3732

Documents and available resources

From State Water Resources Control Board (SVVRCB)
(916) 657-1146:

*General Construction Activity
Storm Water Permit*

*California Storm Water Best
Management Practice Handbook -
Construction Activity*

From Cal EPA, DTSC
(916) 322-3670:

Waste Minimization for the Building Construction Industry - Fact Sheet

The City of Seal Beach gratefully acknowledges the Santa Clara Valley NonPoint Source Pollution Control Program and BASMAA and Los Angeles County for the concept, content, and artwork for this booklet.

7. Information on What You and Your Community Can Do to Use Water More Efficiently

Information on What You and Your Community Can Do To Use Water More Efficiently



For more information on what you and your community can do to use water more efficiently, contact:

U.S. Environmental Protection Agency
Office of Water
401 M Street, S.W.
Washington, D.C. 20460

For more information on pollution prevention programs at U.S. EPA, contact:

U.S. Environmental Protection Agency
Office of Pollution Prevention
401 M Street, S.W.
Washington, D.C. 20460

United States: 20W-0002
Environmental Protection Agency
July 1990

OW (WH-556): OPPE OPM-222

Preventing Pollution Through Efficient Water Use

- How Efficient Water Use Helps Prevent Pollution
- What Individuals Can Do
- What Communities Can Do

How Efficient Water Use Helps Prevent Pollution

Using water more efficiently can help prevent pollution as well as protect and conserve our finite water resources. More efficient water use by you and your community has many other benefits.

Fewer Pollutants

Using less water reduces the amount of waste-water discharged into our lakes, streams, rivers, and marine waters.

The amount of pollutants wastewater carries can also be reduced, as treatment efficiency improves.

Recycled process water can reduce pollutants from industry.

More efficient irrigation can minimize runoff of agricultural pollutants and reduce the use of fertilizers and pesticides.

Protection of Aquatic Habitats

- Building fewer and smaller new water projects can help preserve wetlands, which naturally treat pollutants.
- Diverting less water preserves more stream flow to maintain a healthy aquatic environment.

Protection of Drinking Water Sources

- Less pumping of groundwater lowers the chance that pollutants will be drawn into a water supply well.
- With less water use, septic system performance can improve, reducing the risk of groundwater contamination.
- Highest quality water sources are preserved for drinking water by using treated wastewater for other uses.

Energy Conservation

- Efficient water use means less power needed to pump and treat water and wastewater.
- Less water use reduces the amount of energy required for heating hot water.
- Less energy demand results in fewer harmful by-products from power plants.

Other Reasons to Use Water Wisely

Preventing pollution is only one reason why using water efficiently makes sense. Here are a few more:

Money Saved

- Less water use results in fewer pumping and treatment costs.
- Saving money on water and wastewater operations frees money for meeting water quality, public health and water treatment goals.
- Water saved is also energy, and money, saved for you and your community.

Improved Reliability

- Water conservation provides a hedge against drought impacts.
- Improving water efficiency may be quicker and cheaper than developing a new supply.
- Reduced water use may extend the life of your water or wastewater facility.

or

- Reduced water use may increase the efficiency of wastewater treatment, and reduce overflows during storms.
- Communities which use water efficiently are better prepared to cope with effects of possible future climate change.

What Individuals Can Do

More efficient water use begins with individuals, in the home and place of work. Taking these and other steps, and encouraging others to do so, makes good economic as well as environmental sense.

In: The Home

- Install a toilet dam or plastic bottle in your toilet tank.
- Install a water-efficient showerhead (2.5 gallons or less per minute).
- When you buy a new toilet, purchase a low flow model (1.6 gallons or less per flush).

Outdoors

- Water in the morning or evening to minimize evaporation.
- Install a drip-irrigation watering system for valuable plants.
- Use drought-tolerant plants and grasses for landscaping, and reduce grass-covered areas.

At Work or School

- Adopt the same water-saving habits that are effective at home.
- Ask about installing water-efficient equipment and reducing outdoor water use.
- Encourage employers to explore the use of recycled "gray-water" or reclaimed wastewater.

What Communities Can Do

A water supplier or wastewater system operator (public or private) has cost-effective options to process and deliver water more efficiently. A community can do the same, and can foster ways to use water wisely.

Not all of these steps are expensive. The best choices vary by region and by community, start by asking if these are appropriate where you live and work.

A Water Supplier or Wastewater Processor Can:

- Identify who uses water, and reduce unaccounted for water use.
- Find and repair leaking pipes.

- Consider a new pricing scheme which encourages conservation.
- Reduce excess pressure in water lines.
- Explore the reuse of treated wastewater for uses other than drinking water.
- Charge hookup fees which encourage more efficient water use in new buildings.
- Build water efficiency into future demand projections, facility planning, and drought planning.

A Community Can:

- Adopt plumbing and building codes that require water-efficient equipment and practices.
- Adopt a water-efficient landscaping ordinance to reduce the water used for golf courses and commercial landscapes.
- Retrofit older buildings with water-efficient equipment, starting with public buildings.
- Reduce municipal water use for landscaping and other uses.

8. Sewage Spill Reference Guide

Sewage Spill Regulatory Requirements

Allowing sewage to discharge to a gutter or storm drain may subject you to penalties and/or out-of-pocket costs to reimburse cities or public agencies for clean-up efforts.

Here are the pertinent codes, fines, and agency contact information that apply.

Orange County Stormwater Program

24 Hour Water Pollution Reporting Hotline
(714) 567-6363

- County and city water quality ordinances prohibit discharges to storm drains.

Orange County Health Care Agency Environmental Health

(714) 667-3600

- California Health and Safety Code, Sections 5410-5416
- No person shall discharge raw or treated sewage or other waste in a manner that results in contamination, pollution, or a nuisance.
- Any person who causes or permits a sewage discharge to any state waters.
 - must immediately notify the local health agency of the discharge.
 - shall reimburse the local health agency for services that protect the public's health and safety (water-contact receiving waters).
 - who fails to provide the required notice to the local health agency is guilty of a misdemeanor and shall be punished by a fine (between \$300-\$1,000) and/or imprisonment for less than one year.

Regional Water Quality Control Board Santa Ana Region San Diego Region

(909) 782-4130 (858) 467-2952

- Requires the prevention, mitigation, response to and reporting of sewage spills.

California Office of Emergency Services

(800) 852-7550

California Water Code, Article 4, Chapter 4, Sections 13266-13271
California Health and Safety Code, Sections 17000-17005, Title 23, Division 5, Chapter 3.2, Article 2, Sections 2250-2280

- Any person who causes or permits sewage in excess of 1,000 gallons to be discharged to state waters shall immediately notify the Office of Emergency Services.

- Any person who fails to provide the notice required by this section is guilty of a misdemeanor and shall be punished by a fine (less than \$20,000) and/or imprisonment for not more than one year.

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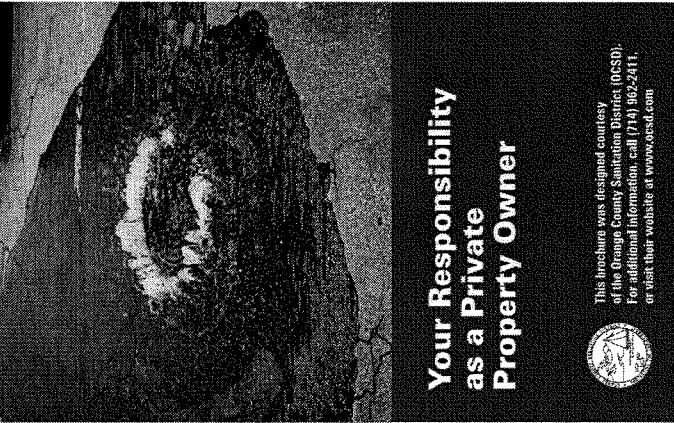
Sewage Spill Reference Guide



www.ocwaterfoods.com



Health Care Agency
Environmental Health



Your Responsibility as a Private Property Owner



This brochure was designed courtesy
of the Orange County Sanitation District (OCS&D).
For additional information, call (714) 962-2411,
or visit their website at www.ocsd.com

What is a Sewage Spill?

Sewage spills occur when the wastewater being transported via underground pipes overflows through a manhole, cleanout, or broken pipe. Sewage spills can cause health hazards, damage to homes and businesses, and threaten the environment, local waterways, and beaches.

Common Causes of Sewage Spills

Grease builds up inside and eventually blocks sewer pipes. Grease gets into the sewer from food establishments, household drains, as well as from poorly maintained commercial grease traps and interceptors. Grease is the most common cause of pipe blockages.

Structure problems caused by tree roots in the lines, broken/cracked pipes, missing or broken cleanout caps, or undersized sewers can cause blockages.

Infiltration and inflow (I/I) impacts pipe capacity and is caused when groundwater or rainwater enters the sewer system through pipe defects and illegal connections.

You Are Responsible for a Sewage Spill Caused by a Blockage or Break in Your Sewer Lines!

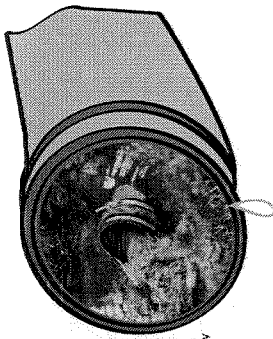
Time is of the essence in dealing with sewage spills. You are required to **immediately**:

Control and minimize the spill. Keep spills contained on private property and out of gutters, storm drains, and public waterways by shutting off or not using the water.

Use sandbags, dirt and/or plastic sheeting to prevent sewage from entering the storm drain system.

Clear the sewer blockage. Always wear gloves and wash your hands. It is recommended that a plumbing professional be called for clearing blockages and making necessary repairs.

Always notify your city sewer/public works department or public sewer district of sewage spills. If the spill enters the storm drain also notify the Health Care Agency. In addition, if it exceeds 1,000 gallons notify the Office of Emergency Services. Refer to the numbers listed in this brochure.



Overflowing cleanout pipe from private property

You Could Be Liable

Allowing sewage from your home, business or property to discharge to a gutter or storm drain may subject you to penalties and/or out-of-pocket costs to reimburse cities or public agencies for clean-up and enforcement efforts. See Regulatory Codes & Fines section for pertinent codes and fines that apply.

What to Look For

Sewage spills can be a very noticeable gushing of water from a manhole or a slow water leak that may take time to be noticed. Don't dismiss unaccounted-for wet areas.

Look for:

- Drain backups inside the building.
- Wet ground and water leaking around manhole lids onto your street.
- Leaking water from cleanouts or outside drains.
- Unusual odorous wet areas: sidewalks, external walls, ground/landscape around a building.

Caution

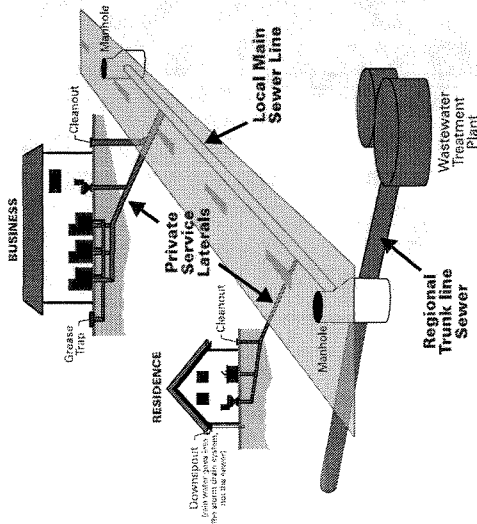
Keep people and pets away from the affected area. Untreated sewage has high levels of disease-causing viruses and bacteria. Call your local health care agency listed on the back for more information.

**If You See a Sewage Spill Occurring,
Notify Your City Sewer/Public Works
Department or Public Sewer District
IMMEDIATELY**

How a Sewer System Works

A property owner's sewer pipes are called service laterals and are connected to larger local main and regional trunk lines. Service laterals run from the connection at the home to the connection with the public sewer (including the area under the street). These laterals are the responsibility of the property owner and must be maintained by the property owner. Many city agencies have adopted ordinances requiring maintenance of service laterals. Check with your city sewer/local public works department for more information.

Operation and maintenance of **local and regional sewer lines** are the responsibility of the city sewer/public works departments and public sewer districts.



How You Can Prevent Sewage Spills

- 1 Never put grease down garbage disposals, drains, or toilets.
- 2 Perform periodic cleaning to eliminate grease, debris and roots in your service laterals.
- 3 Repair any structural problems in your sewer system and eliminate any rainwater infiltration/inflow leaks into your service laterals.

Sewage spills can cause damage to the environment. Help prevent them!

Orange County Agency Responsibilities

- **City Sewer/Public Works Departments**—Responsible for protecting city property and streets, the local storm drain system, sewage collection system and other public areas.
- **Public Sewer/Sanitation Districts**—Responsible for collecting, treating and disposing of wastewater.
- **County of Orange Health Care Agency**—Responsible for protecting public health by testing sewer/lateral systems and may close food service businesses if a spill poses a threat to public health.
- **Regional Water Quality Control Boards**—Responsible for protecting State waters.
- **Orange County Stormwater Program**—Responsible for preventing harmful pollutants from being discharged or washed by stormwater runoff into the municipal storm drain system, creeks, bays and the ocean.

You Could Be Liable for Not Protecting the Environment

Local and state agencies have legal jurisdiction and enforcement authority to ensure that sewage spills are remedied.

They may respond and assist with containment, relieving pipe blockages, and/or clean-up of the sewage spill, especially if the spill is flowing into storm drains or onto public property.

A property owner may be charged for costs incurred by these agencies responding to spills from private properties.



Report Sewage Spills!

City Sewer/Public Works Departments

Also Viejo	(949) 435-2500
Anaheim	(714) 765-8440
Brea	(714) 896-7631
Buena Park	(714) 852-3655
Costa Mesa	(714) 754-5248
Cypress	(714) 238-7160
Dana Point	(949) 248-3582
Fountain Valley	(714) 593-4600
Fullerton	(714) 739-6697
Garden Grove	(714) 741-8959
Huntington Beach	(714) 960-8861
Irvine	(949) 224-4515
Laguna Beach	(949) 497-9165
Laguna Hills	(949) 832-3333
Laguna Niguel	(949) 832-4337
Laguna Woods	(949) 535-0500
La Habra	(562) 966-9782
La Plaine	(714) 606-3368
Lake Forest	(949) 487-3480
Los Alamitos	(562) 431-3538
Mission Viejo	(949) 776-2095
Newport Beach	(949) 614-2011
Orange	(714) 532-6480
Orange County	(714) 567-6363
Pleasanton	(949) 864-8245
San Clemente	(949) 366-1553
San Juan Capistrano	(949) 445-6363
Santa Ana	(714) 647-3380
Seal Beach	(562) 437-2527
Stanton	(714) 284-6742
Tustin	(714) 862-2511
Westminster	(714) 896-3309
Yorba Linda	(714) 851-7170

Public Sewer Districts

Costa Mesa Sanitary District	(714) 754-5257
El Toro Water District	(714) 393-4433
Emerald Bay Service District	(949) 837-0660
Garden Grove Sanitary District	(949) 494-8571
Irvine Ranch Water District	(714) 747-5395
Los Alamitos/Absecon	(949) 452-5300
Sewer District	(562) 437-2723
Midway City Sanitary	(714) 893-2553
District (Westminster)	(949) 837-2515
Orange County Sanitary District	(714) 862-2411
Santa Margarita Water District	(949) 458-4420
South Coast Water District	(949) 488-4555
South Orange County	(949) 234-5000
Wastewater Authority	(562) 492-9832
Sunset Beach Sanitary District	(949) 854-0277
Tribalton Canyon Sanitary District	(714) 777-3018
Yorba Linda Water District	(714) 777-3018

Other Agencies

Orange County Health Care Agency	(714) 857-3600
Office of Emergency Services	(800) 852-1936

9. Water Quality Guidelines for Landscaping and Gardening

Help Prevent Ocean Pollution:

Tips for Landscape & Gardening

Clean beaches and healthy creeks, rivers, bays, and ocean are important to Orange County. However, many common activities can lead to water pollution if you're not careful. Fertilizers, pesticides and other chemicals that are left on yards or driveways can be blown or washed into the storm drains that flow to the ocean. Overwatering lawns can also send materials into the storm drains. Unlike water in sanitary sewers (from sinks and toilets), water in storm drains is not treated before entering our waterways.

You would never pour gardening products into the ocean, so don't let them enter the storm drains. Follow these easy tips to help prevent water pollution.

For more information, please call the Orange County Stormwater Program at (714) 567-6363 or visit www.ocwatersheds.com.

To report a spill, call the Orange County 24-Hour Water Pollution Reporting Hotline at (714) 567-6363.

For emergencies, dial 911.

The tips contained in this brochure provide useful information to help prevent water pollution while landscaping or gardening. If you have other suggestions, please contact your city's stormwater representatives or call the Orange County Stormwater Program.



The Ocean Begins
at Your Front Door

P R O J E C T
Pollution
P R E V E N T I O N

Tips for Landscape and Gardening

Never allow gardening products or polluted water to enter the street or storm drain.

General Landscaping Tips

- Protect stockpiles and materials from wind and rain by storing them under tarps or secured plastic sheeting.
- Prevent erosion of slopes by planting fast-growing, dense ground covering plants. These will shield and bind the soil.
- Plant native vegetation to reduce the amount of water, fertilizer, herbicides, and pesticides needed.
- Never apply pesticides or fertilizers when rain is predicted within the next 48 hours.



Garden & Lawn Maintenance

- Do not over-water. Use irrigation practices such as drip irrigation, soaker hoses or micro spray systems. Periodically inspect and fix leaks and misdirected sprinklers.

- Do not rake or blow leaves, clippings or pruning waste into the street, gutter or storm drains. Instead dispose of waste by composting, hauling it to a permitted landfill, or as green waste through your city's recycling program.



- Use slow-release fertilizers to minimize leaching and use organic fertilizers.
- Read labels and use only as directed. Do not over-apply pesticides or fertilizers. Apply to spots as needed, rather than blanketing an entire area.
- Store pesticides, fertilizers and other chemicals in a dry covered area to prevent exposure that may result in the deterioration of containers and packaging.
- Rinse empty pesticide containers and re-use rinse water as you would use the



product. Do not dump rinse water down storm drains. Dispose of empty containers in the trash.

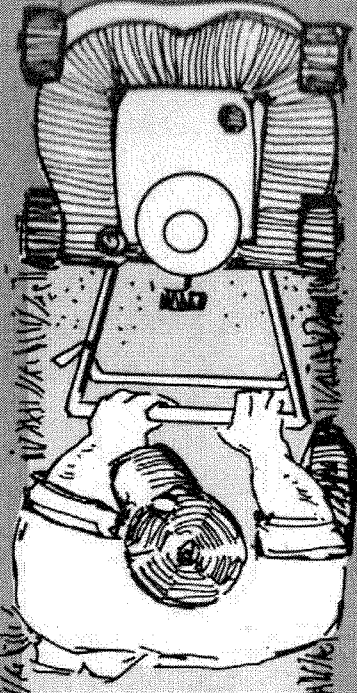
- When available, use non-toxic alternatives to traditional pesticides and use pesticides specifically designed to control the pest you are targeting. For more information, check www.ipm.ucdavis.edu.
- If fertilizer is spilled, sweep up the spill before applying irrigation water. If the spill is liquid, apply an absorbent material like cat litter and then sweep and dispose in the trash.
- Take unwanted pesticides to a Household Hazardous Waste Collection Center to be recycled. Locations are provided below.

Household Hazardous Waste Collection Centers

Anaheim: 1071 N. Blue Gum St.
Huntington Beach: 17121 Nichols St.
Irvine: 6411 Oak Canyon
San Juan Capistrano: 32250 La Pata Ave.

For more information,
call (714) 834-6752 or visit
www.ocwatersheds.com

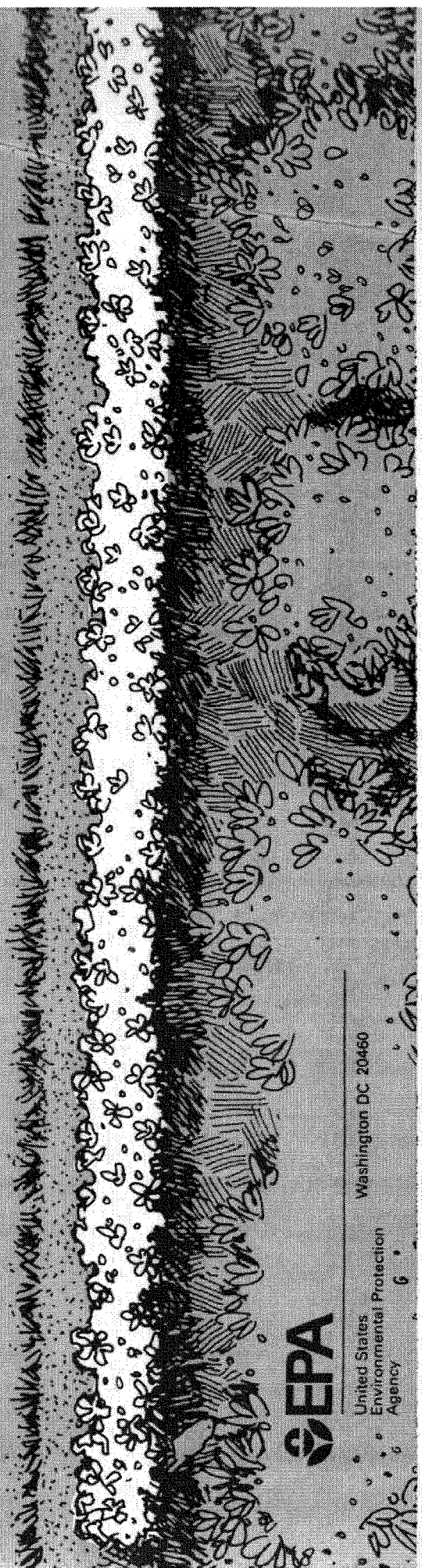
10. Healthy Lawn Healthy Environment



Healthy Lawn

Healthy Environment

Caring for Your Lawn in an Environmentally Friendly Way



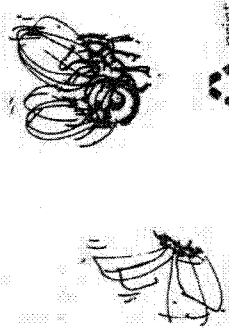
United States
Environmental Protection
Agency

Washington DC 20460

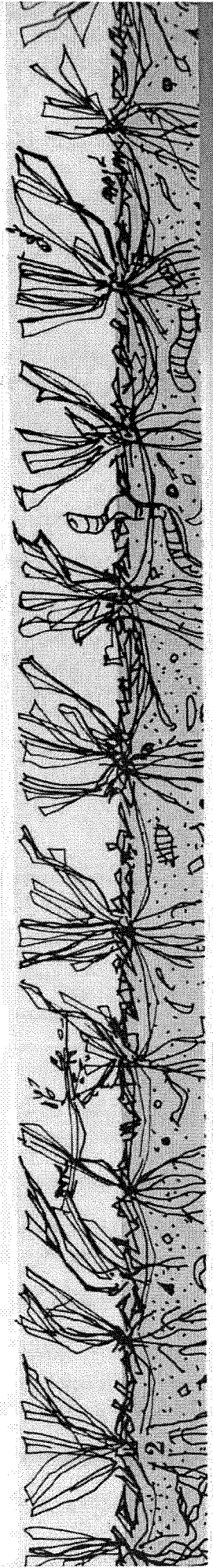
HEALTHY LAWN, HEALTHY

Caring for Your Lawn in an Environmentally Friendly Way

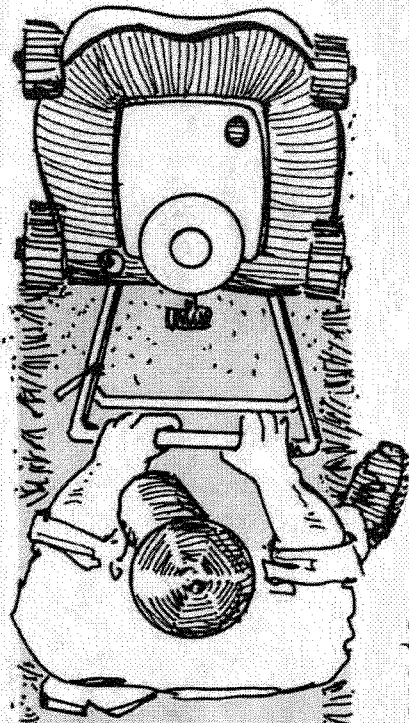
Picture a healthy green lawn: perfect for lounging, great for ball games and cookouts, a real asset to your home. But did you know that your lawn—and how you take care of it—can also help the environment? 🌸 Healthy grass provides feeding ground for birds, who find it a rich source of insects, worms, and other food. Thick grass prevents soil erosion, filters contaminants from rainwater, and absorbs many types of airborne pollutants, like dust and soot. Grass is also highly efficient at converting carbon dioxide to oxygen, a process that helps clean the air. 🌸 Caring for your lawn properly can both enhance its appearance and contribute to its environmental benefits. You don't have to be an expert to grow a healthy lawn. Just keep in mind that the secret



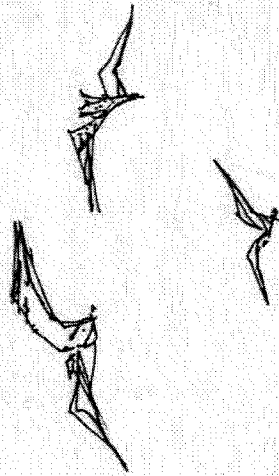
♻️ printed on recycled paper



ENVIRONMENT



is to work with nature. This means creating conditions for grass to thrive and resist damage from weeds, disease, and insect pests. It means setting realistic goals for your lawn, whether you or a professional lawn care service will be doing the work. And if you choose to use pesticides, it means using them with care so as to get the most benefit and reduce any risks. 🌸 Caring for your lawn in an environmentally sensible way can have a bigger impact than you might think. Your lawn is only a small piece of land, but all the lawns across the country cover a lot of ground. That means you and your lawn care activities, along with everyone else's, can make a difference to the environment. And that's why taking care of the environment begins in our own backyards.



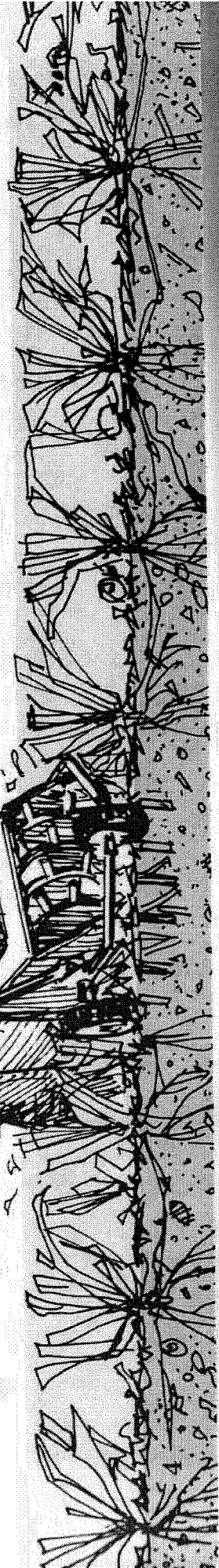
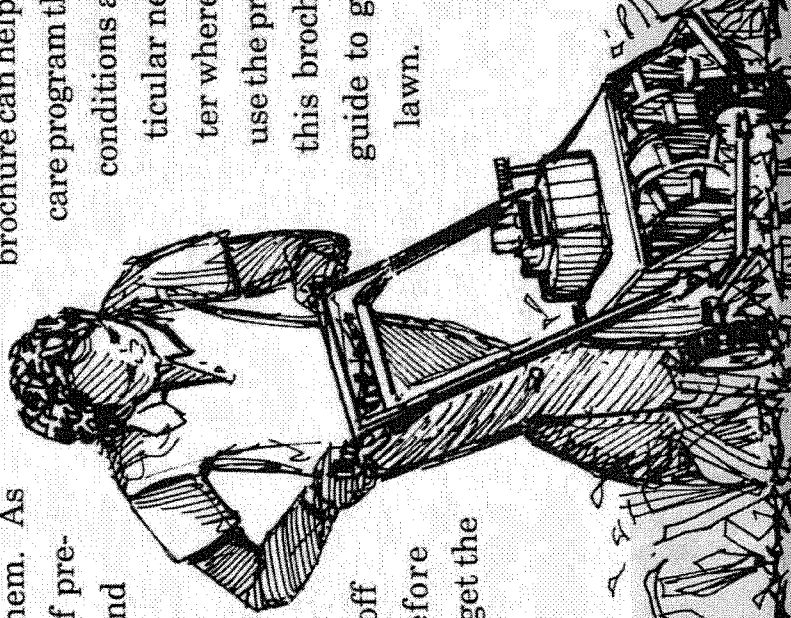
Working With Nature: A Preventive Health Care Program For Your Lawn

To start, think about lawn care as a **preventive** health care program, like one you would use to keep up your own health. The idea is to prevent problems from occurring so you don't have to treat them. As they say, an ounce of prevention is worth a pound of cure. A healthy lawn can out-compete most weeds, survive most insect attacks, and fend off most diseases—before these problems ever get the upper hand.

Your lawn care program should be tailored to local conditions—the amount of rainfall you get, for example, and the type of soil you have. The sources listed at the back of this brochure can help you design a lawn care program that suits both local conditions and your own particular needs. But no matter where you live, you can use the program outlined in this brochure as a general guide to growing a healthy lawn.

A preventive health care program for your lawn should have the following steps:

1. Develop healthy soil
2. Choose a grass type that thrives in your climate
3. Mow high, often, and with sharp blades
4. Water deeply but not too often
5. Correct thatch build-up
6. Set realistic goals



1. Develop Healthy Soil

Good soil is the foundation of a healthy lawn. **To grow well, your lawn needs soil with good texture, some key nutrients, and the right pH, or acidity/alkalinity balance.**

Start by checking the texture of your soil to see whether it's heavy with clay, light and sandy, or somewhere in between. Lawns grow best in soil with intermediate or "loamy" soils that have a mix of clay, silt, and sand.

Whatever soil type you have, you can probably improve it by periodically adding organic matter like compost, manure, or grass clippings. Organic matter helps to lighten a predomi-

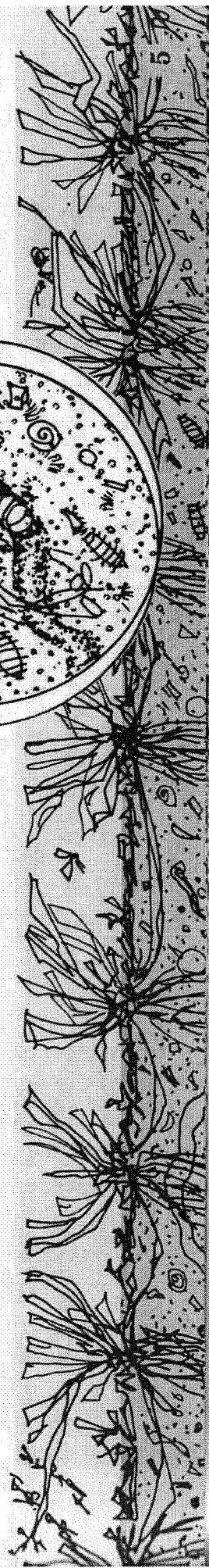
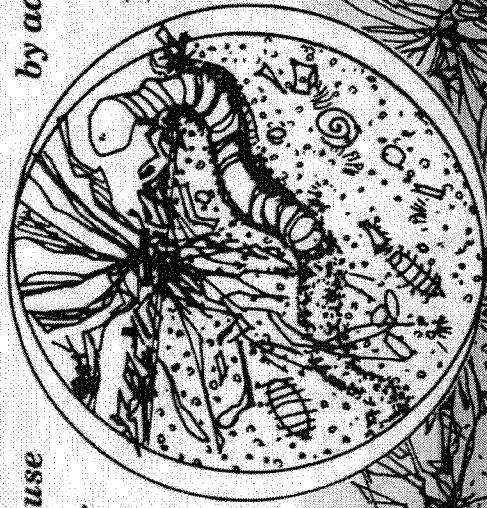
nantly clay soil and it helps sandy soil retain water and nutrients.

Also check to see if your soil is packed down from lots of use or heavy clay content. This makes it harder for air and water to penetrate, and for grass roots to grow. To loosen compacted soil, some lawns may need to be aerated several times a year. This process involves pulling out plugs of soil to create air spaces, so water and nutrients can again penetrate to the grass roots.

Most lawns need to be fertilized every year, because they need more nitrogen, phosphorus, and potassium

than soils usually contain. These three elements are the primary ingredients found in most lawn fertilizers. It's important not to over-fertilize—you could do more harm to your lawn than good—and it's best to use a slow-release fertilizer that feeds the lawn slowly. It's also important to check the soil's pH. Grass is best able to absorb nutrients in a slightly acidic soil, with a pH of 6.5 to 7.0. **Soil that is too acidic can be "sweetened" with lime; soil that's not acid enough can be made more "sour" by adding sulfur.**

Have your soil tested periodically to see whether it needs more



2. Choose A Grass Type That Thrives In Your Climate

organic matter or the pH needs adjusting. Your county extension agent (listed in your phone book under county government) or local nursery should be able to tell you how to do this. These experts can also help you choose the right fertilizer, compost, and other "soil amendments," and they can advise you about aerating if your soil is compacted. If a professional service takes care of your lawn, make sure it takes these same steps

to develop good soil. There's no getting around it: your lawn's health is only as good as the soil it grows in.

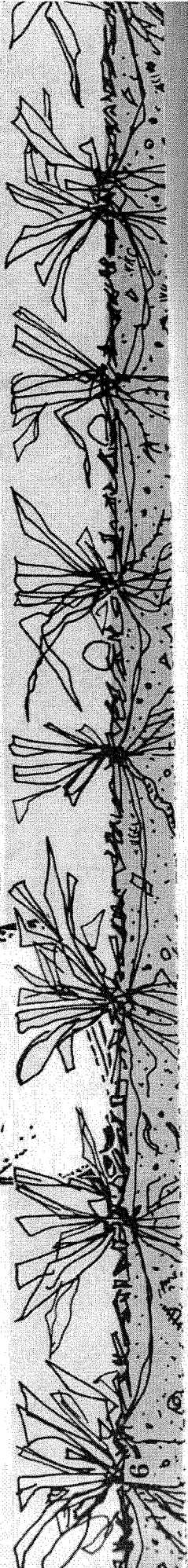
The right type of grass—one that suits your needs and likes the local weather—will always give better results. Grasses vary in the type of climate they prefer, the amount of water and nutrients they need, their resistance to pests, their tolerance for shade, and the degree of wear they can withstand.

If you are putting in a new lawn, it will be worth your while to do some research to identify the best grass type for your needs.

If you're working with an established lawn that fails to thrive despite proper care, you might consider replanting with a different type of grass.

Why struggle to grow grass that's susceptible to fungal disease if you live in a humid climate? Or a water-loving species if you live in an area with water shortages? Grass that is well-adapted to your area will grow better and resist local pests and diseases better.

New grass varieties and mixtures come out on the market every year. Ask your county extension agent or another one of the sources listed in this brochure for recommendations.



3. Mow High, Often and With Sharp Blades

Mowing high—that is, keeping your lawn a bit long—will produce stronger, healthier grass with fewer pest problems.

Longer grass has more leaf surface to take in sunlight. This enables it to grow thicker and develop a deeper root system, which in turn helps the grass survive drought, tolerate insect damage, and fend off diseases. Longer grass also shades the soil surface keeping it cooler, helping it retain moisture, and

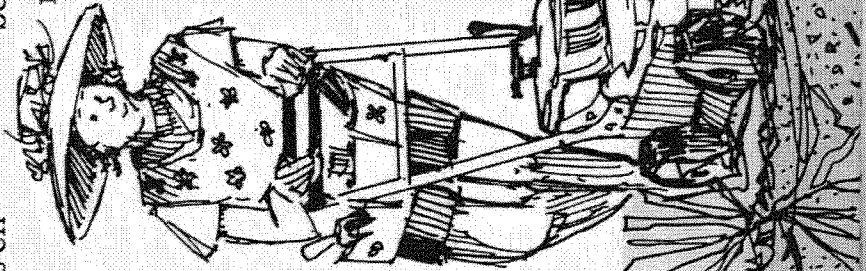
making it difficult for weeds to germinate and grow.

A lawn's ideal length will vary with the type of grass, but many turf grass species are healthiest when kept between 2-1/2 and 3-1/2 inches. The ruler at the back of this brochure will help you judge the best mowing height for your grass variety. You may have to readjust your mower—most are set too low.

It's also important to mow with sharp blades to prevent tearing and injuring the grass. And it's best to

mow often, because grass adjusts better to frequent than infrequent mowing. **The rule of thumb is to mow often enough that you never cut more than one-third of the height of the grass blades.** Save some time and help your lawn and the environment by leaving short clippings on the grass—where they recycle nitrogen—rather than sending them in bags to the landfill.

You don't have to grow a foot-high meadow to get good results. Just adding an inch will give most lawns a real boost.



4. Water Deeply But Not Too Often

Watering properly will help your lawn grow deep roots that make it stronger and less vulnerable to drought. Most lawns are watered too often but with too little water. ***It's best to water only when the lawn really needs it, and then to water slowly and deeply.*** This trains the grass roots down. Frequent shallow watering trains the roots to stay near the surface, making the lawn less able to find moisture during dry periods.

Every lawn's watering needs are unique: they depend on local

rainfall, the grass and soil type, and the general health of the lawn. But even in very dry areas, no established home lawn should require daily watering.

Try to water your lawn in a way that imitates a slow, soaking rain, by using trickle irrigation, soaker hoses, or other water-conserving methods. It's also best to water in the early morning, especially during hot summer months, to reduce evaporation.

Apply about an inch of water—enough that it soaks 6–8 inches into

the soil. Then let the lawn dry out thoroughly before watering it again.

The best rule is to water only when the lawn begins to wilt from dryness--when the color dulls and footprints stay compressed for more than a few seconds.



5. Correct Thatch Build-Up

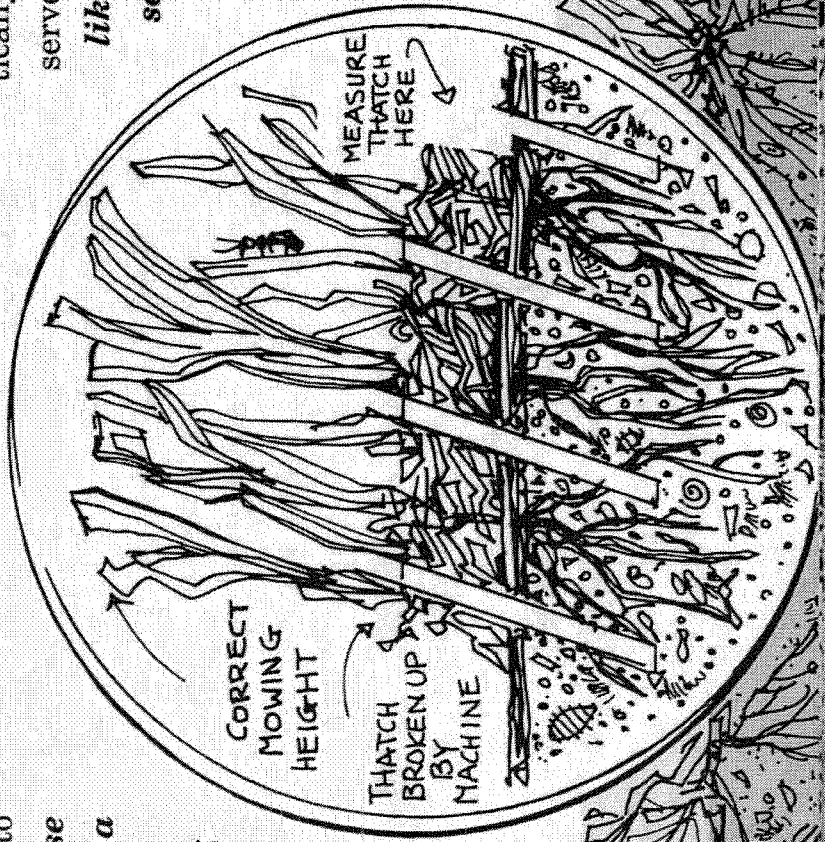
All grass forms a layer of dead plant material, known as thatch, between the grass blades and the soil. When thatch gets too thick—deeper than one-half inch—it prevents water and nutrients from penetrating to the soil and grass roots. Some grasses tend to form a thick layer of thatch. **Overuse of fertilizer can also create a heavy layer of thatch.**

You can reduce thatch by raking the lawn or using a machine that slices through the thatch layer to break it up. Sprinkling a thin layer of topsoil or compost over the lawn will also help.

6. Set Realistic Goals

Setting realistic goals will allow you to conduct an environmentally sensible lawn care program. It's probably not necessary to aim for putting-green perfection. Did you know that a lawn with 15 percent weeds can look practically weed-free to the average observer? **Even a healthy lawn is likely to have some weeds or insect pests. But it will also have beneficial insects and other organisms that help keep pests under control.**

Also realize that grass just can't grow well in certain spots. Why fight a losing battle



What Is IPM?

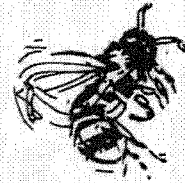
with your lawn, when you have other options? At the base of a tree, for example, you might have better luck with wood chips or shade-loving ornamental plants like ivy, periwinkle, or pachysandra. If your climate is very dry, consider converting some of your lawn to dry-garden landscaping. It could save time, money, and water resources.

Integrated Pest Management is essentially common-sense pest control. IPM is not a new concept; some forms of it have been practiced for centuries.

IPM involves the carefully managed use of three different pest control tactics—biological, cultural, and chemical—to get the best long-term results with the least disruption of the environment. Biological control means using natural enemies of the pest, like lady bugs to control aphids. Cultural or horticultural control in-

volves the use of gardening methods like mowing high to shade out weed. Chemical control involves the judicious use of pesticides.

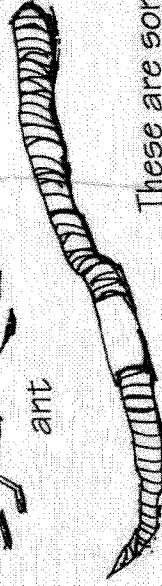
IPM is a highly effective approach that minimizes the use of pesticides and maximizes the use of natural processes. Lawn care professionals who use IPM should have a sophisticated understanding of the ecosystem of your turf and the available pest control tactics. Home gardeners can also practice IPM by following the steps outlined in this brochure.



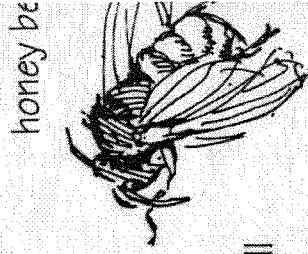
big-eyed bug



ant



earthworm



honey bee

These are some good bugs you will not want to kill!

- Protecting the Environment
- Fertilizing only when Needed
- Watering Properly
- Mowing High
- Choosing Best Pest Control Methods
- Monitoring
- Setting Thresholds
- Dethatching
- Aerating

IPM



IPM



You're in
the right
Ballpark
with

IPM Integrated Pest
Management

Tips For Using Pesticides

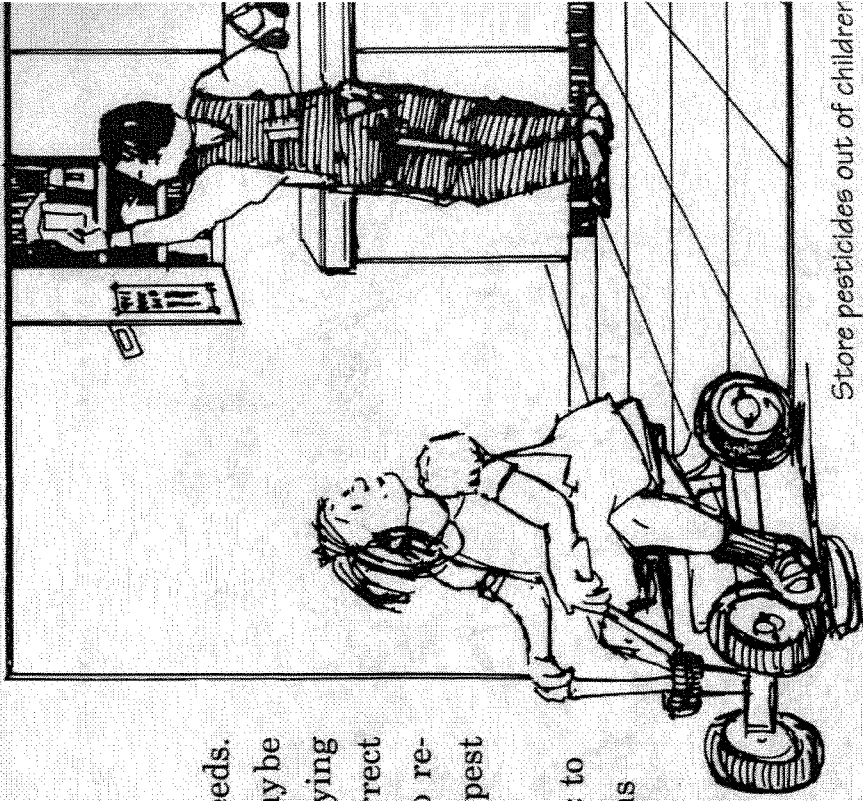
Sometimes, even with good lawn care practices, weather conditions or other factors can cause pest problems to develop. Pesticides can help control many lawn pests. But pesticides have risks as well as benefits, and it's important to use them properly.

The chemicals we call pesticides include insecticides, herbicides, and fungicides. These products are designed to kill or control pest insects, weeds, and fungal diseases. Pesticides can be very effective. But don't be tempted to rely solely on pesticides as a quick-fix solution to any lawn problem. Serious, ongoing pest problems are often a sign that your lawn is

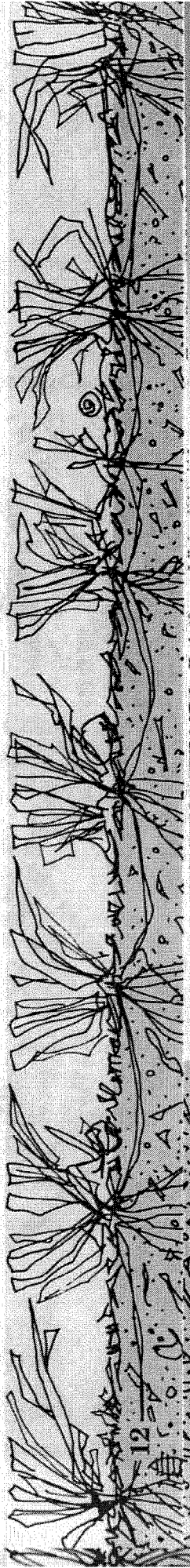
not getting everything it needs. In other words, the pests may be a symptom of an underlying problem. You need to correct the underlying problem to reduce the chance that the pest will reappear.

All pesticides are toxic to some degree. This means they can pose some risk to you, to your children and pets, and to any wildlife that venture onto your lawn—especially if these chemicals are overused or

carelessly applied. Pesticides can also kill earthworms and other beneficial organisms, disrupting the ecological balance of your lawn.

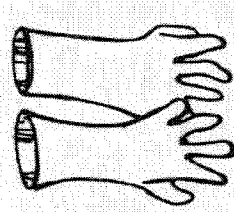


Store pesticides out of children's reach in a locked cabinet or garden shed.



When Spraying, Protect

Before Using Any Pesticide, Be Sure To Review These Basic Rules



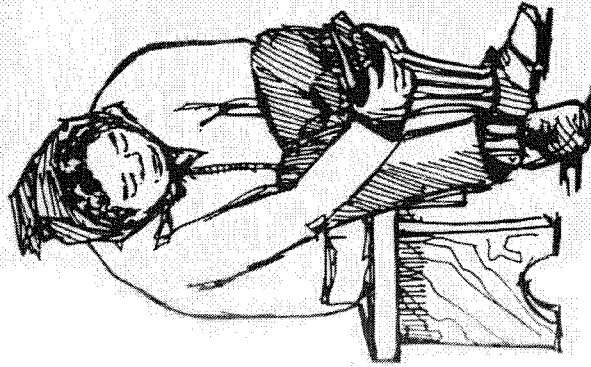
your skin



your eyes

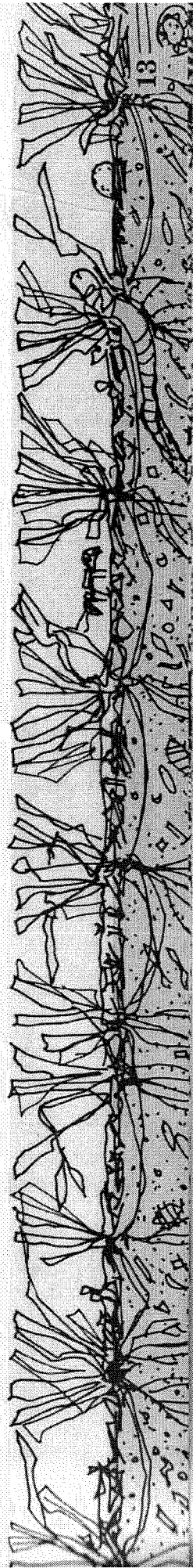


your lungs



1. **Take safety precautions. Never assume a pesticide is harmless.**
 - Read the entire label and follow its instructions. Use only the amount directed, at the time and under the conditions specified, and for the purpose listed.
 - Be sure to wear any protective clothing—like gloves, long sleeves, and long pants—indicated on the label. Wash this clothing separately before using it again.
 - Keep children and pets away from pesticides, and make sure no one goes on a treated lawn for at least the time prescribed by the pesticide label.
 - Remember to follow any state or local requirements for posting your treated lawn or notifying your neighbors that a pesticide has been applied.
 - Store and dispose of pesticides properly, according to the label directions and any state and local regulations.

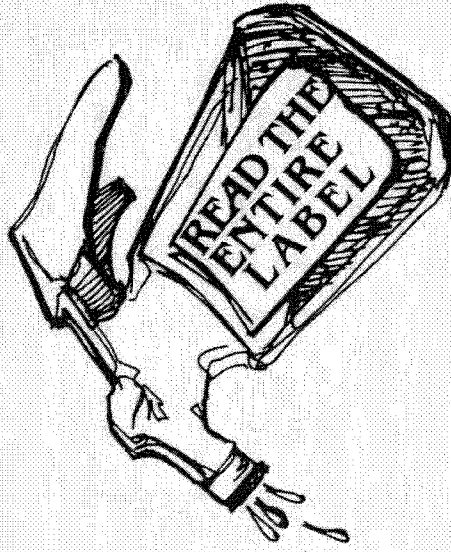
Wash this clothing separately before using it again.



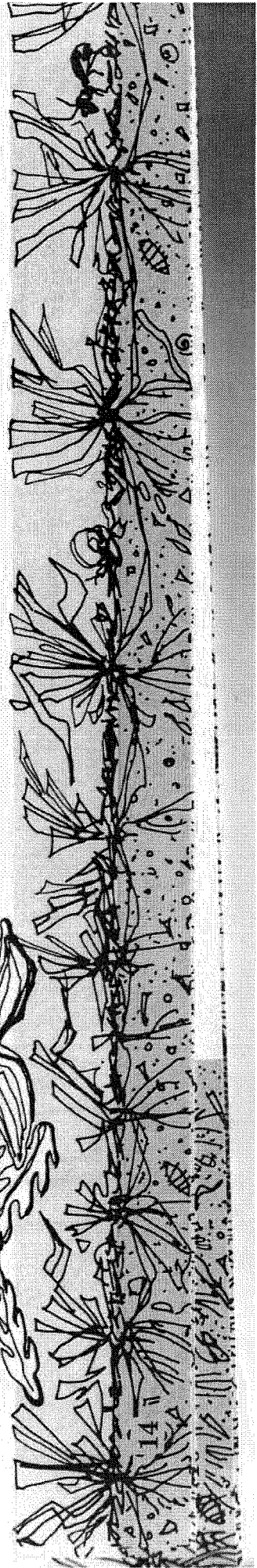
2. Use pesticides to minimize pests, not eradicate them. The latter is often impossible and unnecessary.

3. Be sure you have accurately identified the pest so you can choose the best pesticide for the job and use it most effectively. Obtain professional advice from your county extension agent or a local expert.

4. Spot treat whenever possible. In most cases, it isn't necessary to treat the whole lawn with pesticides if the problem is confined to certain areas. Spraying more than necessary is wasteful and can be environmentally damaging.



If you have questions about a pesticide, call EPA's toll-free National Pesticide Information Center (1-800-858-7378). For general information on minimizing pesticide risks, call EPA for a free copy of the *Citizen's Guide to Pesticides* (EPA 730-K95-001). The number to call is 1-800-490-9198.



Choosing A Lawn Care Service

Many people choose to hire a professional company to help maintain their lawn. Lawn care companies offer a range of services, from fertilizing and pest control to aerating, mowing, and renovation.

Lawn care companies should follow the same healthy lawn program outlined in this brochure. They should also follow the same precautions for minimizing pesticide risks.

How can you be sure that a service will do these things? Start by asking questions like these:

Q. Is the company licensed?

A. Nearly all states require lawn care companies to be licensed. The qualifications for obtaining a license vary from state to state, but having a license is one indication that the company is reputable and operating legally.

Q. Does the company have a good track record?

A. Ask neighbors and friends who have dealt with the company if they were satisfied with the service they received. Call the Better Business Bureau or the state or local consumer protection office listed in your phone

book; have they received any complaints about the company? Determine from the state pesticide regulatory agency if the company has a history of violations.

Q. Is the company affiliated with a professional lawn care association?

A. Affiliation with a professional association helps members to stay informed of new developments in the lawn care field.

Q. Does the company offer a variety of pest management approaches? Does it apply pesticides on a set schedule or only when they are really needed? Does it use integrated pest management, or "IPM"—an approach that

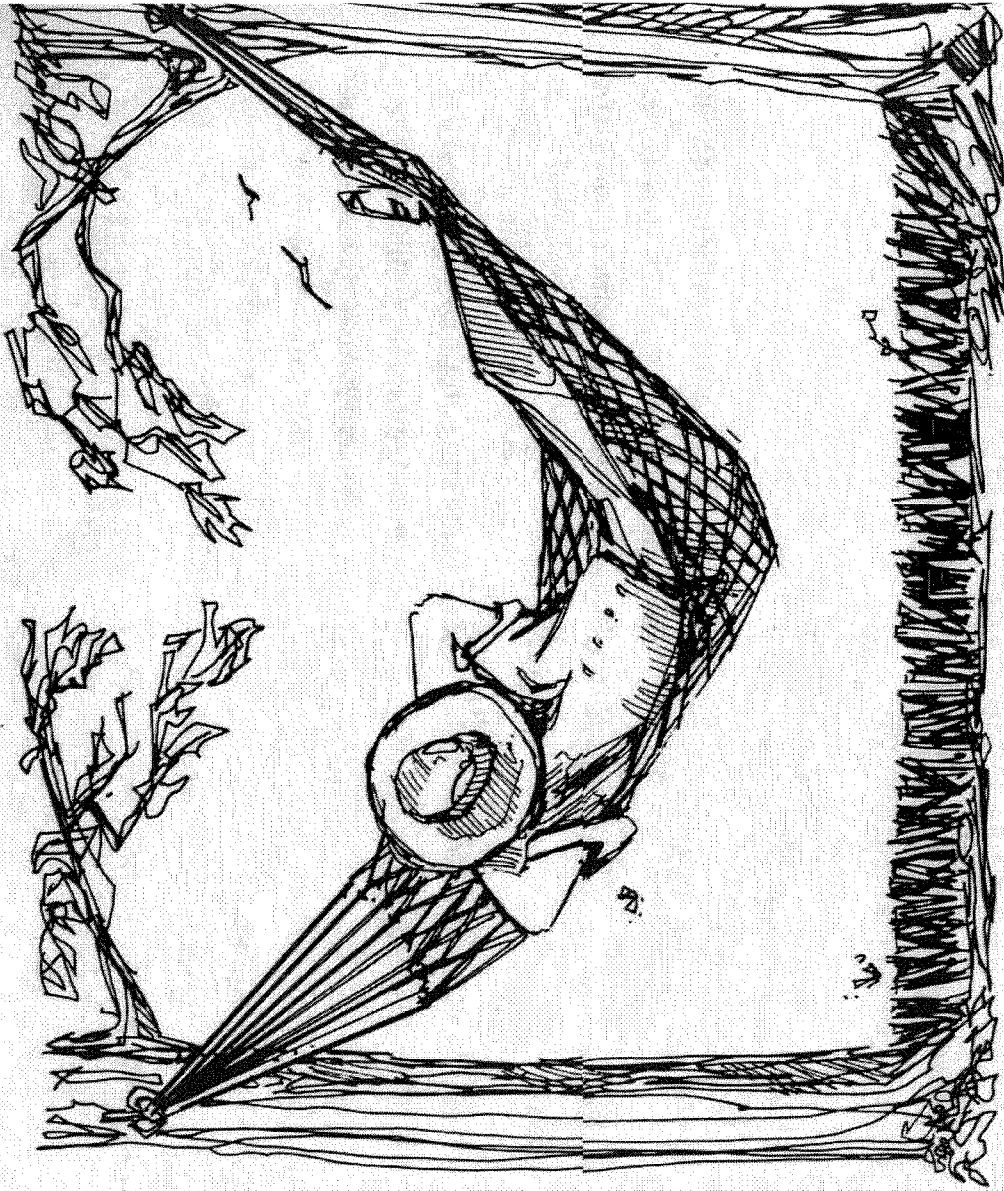


often reduces pesticide use by combining it with other, non-chemical methods of pest control?

A. More and more lawn companies are offering integrated pest management (IPM) in response to public concern about pesticides. Be aware that IPM is a general term and that companies may use it to describe a wide range of activities. Find out exactly what a company means if it says it uses IPM.

Q. Is the company willing to help you understand your lawn's problems and the solutions?

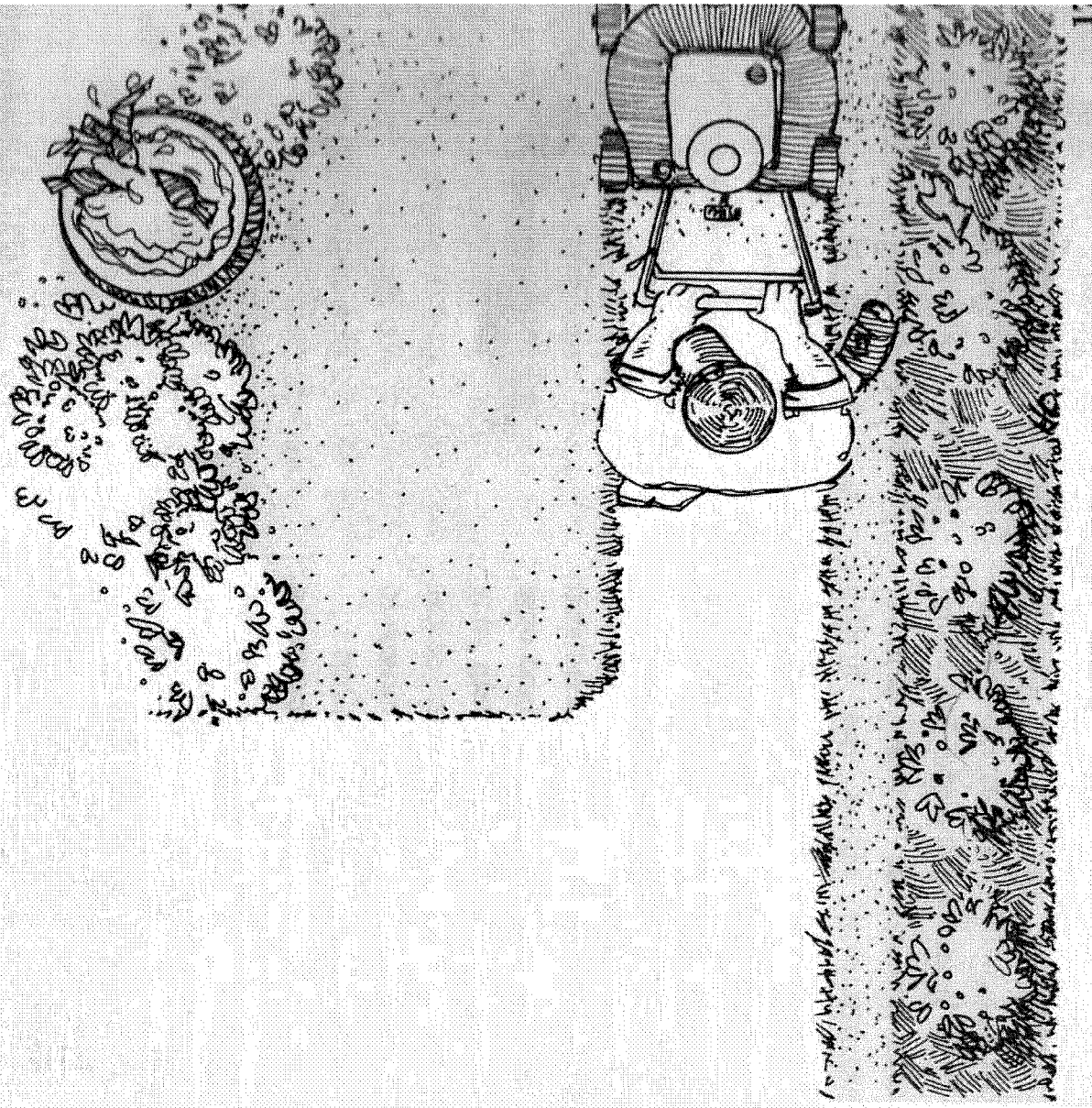
A. Lawn services generally apply fertilizers and pesticides. But you may be the one who mows and waters—and poor watering and mowing practices can lead to disappointing results. The



company should tell you how it plans to take care of your lawn, and advise you about the work you need to do to keep your lawn in good shape.

Q. Will the company tell you what pesticides it applies to your lawn and why, and what health and environmental risks may be presented by their use?

A. You have a right to this information. If asked, the company should readily supply it. All pesticides sold legally in the United States are registered by EPA, but such registration is *not* a guarantee of safety. Ask to see a copy of pesticide labels to make sure they bear an EPA registration number, and to review the directions that should be followed. If the company can't answer your questions about the chemicals it uses, call NPIC (1-800-858-7378) for more information.



For More Information

Affiliated with the Land Grant university in each state is a system of **County Cooperative Extension Offices**. Usually listed in the telephone directory under county or state government, these offices often have a range of resources on lawn care and landscape maintenance, including plant selection, pest control, and soil testing.

State agriculture and/or environmental agencies may publish information on pests and pest management strategies. The state pesticide regulatory agency can provide information on pesticide regulations, and may also have information on companies with a history of complaints or violations. NPIC (see below) can identify the agency responsible for pesticide regulation in each state.

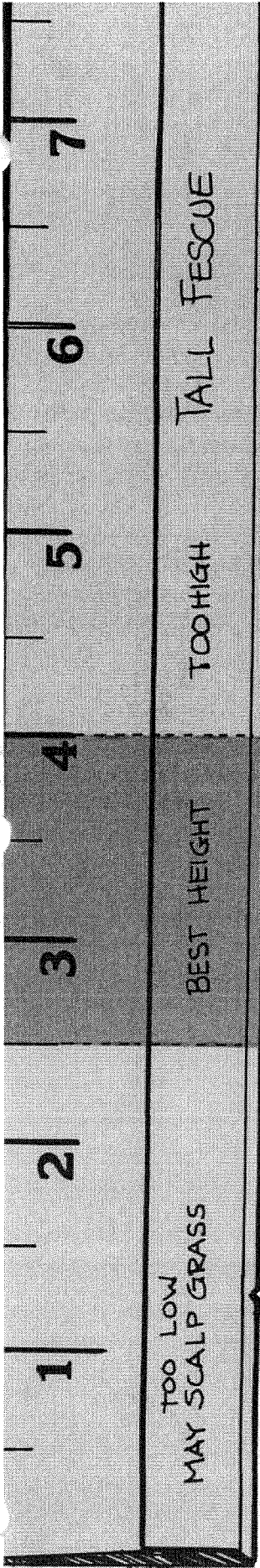
The **National Pesticide Information Center** is a toll-free, information service that can be reached by calling 1-800-858-7378 or at npic.orst.edu. The operators can provide a wide range of information about the health effects of pesticides, and provide assistance in dealing with pesticide-related emergencies.

Libraries, bookstores, and garden centers usually have a wide selection of books that discuss lawn care and other aspects of landscape management. Garden centers may also have telephone hotlines or experts available on the premises to answer your gardening questions.

The **Environmental Protection Agency** can provide information on integrated pest management strategies for lawn care. See our Web site

at www.epa.gov/pesticides/controlling.

Some **suppliers of lawn care products** can provide helpful tips, answer questions, and help identify problems. Look for information/hotline numbers on product packaging.



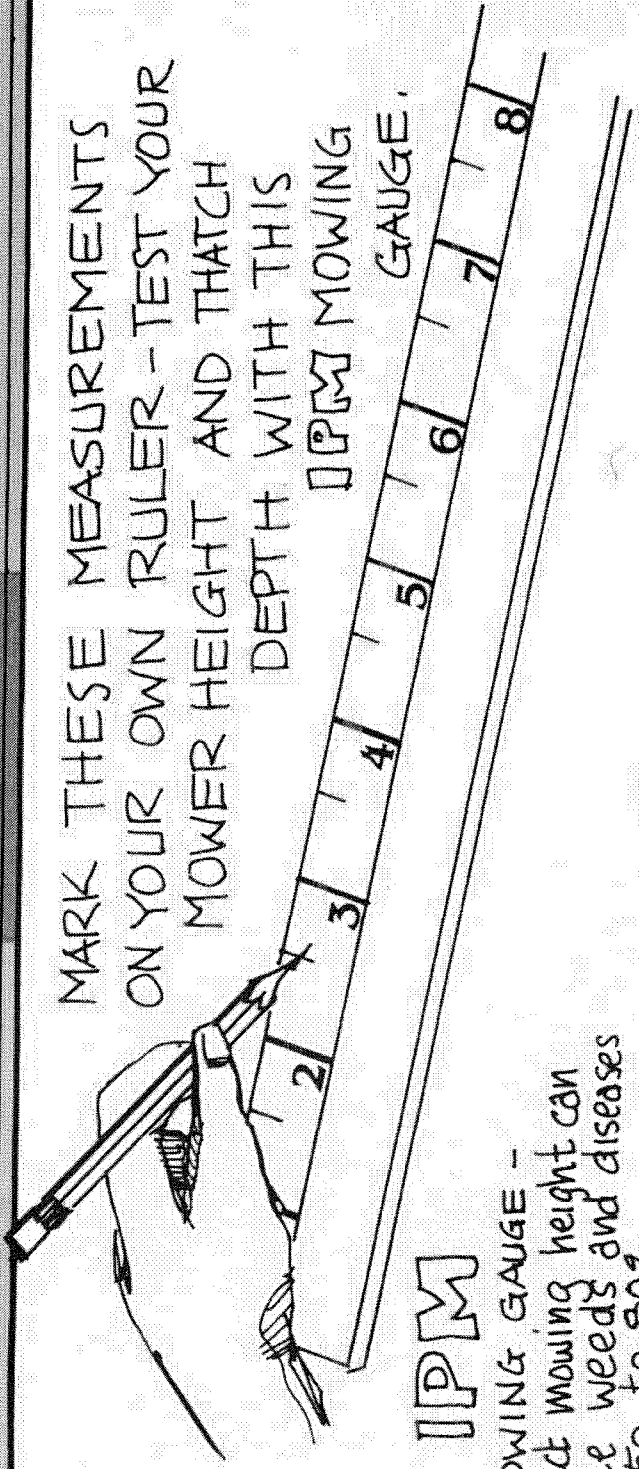
Thatch Risk
for Diseases
and Insects

HIGH ----- N

MEDIUM -----

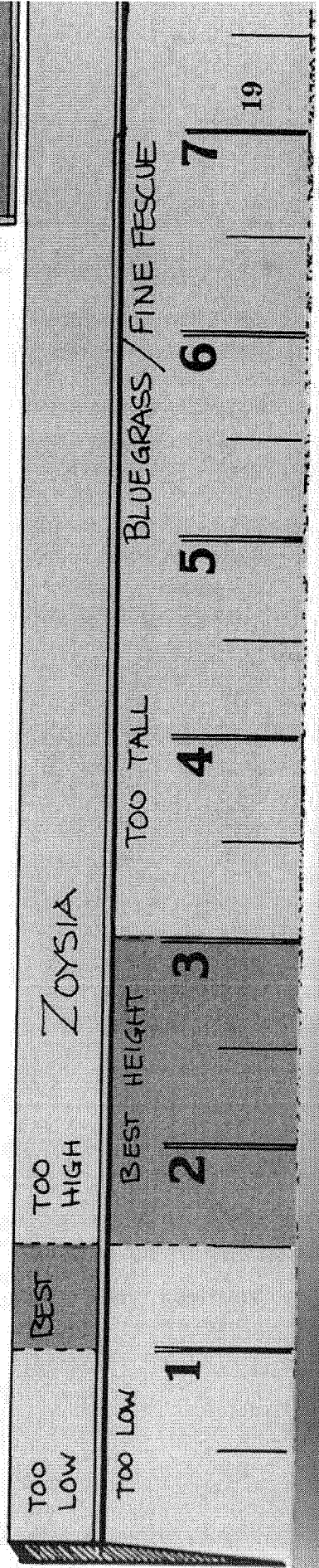
LOW -----

MARK THESE MEASUREMENTS
ON YOUR OWN RULER - TEST YOUR
MOWER HEIGHT AND THATCH
DEPTH WITH THIS
IPM MOWING
GAUGE.



IPM

-MOWING GAUGE -
correct mowing height can
reduce weeds and diseases
by 50 to 80%.



11. EPA Citizen's Guide to Pest Control and Pesticide Safety

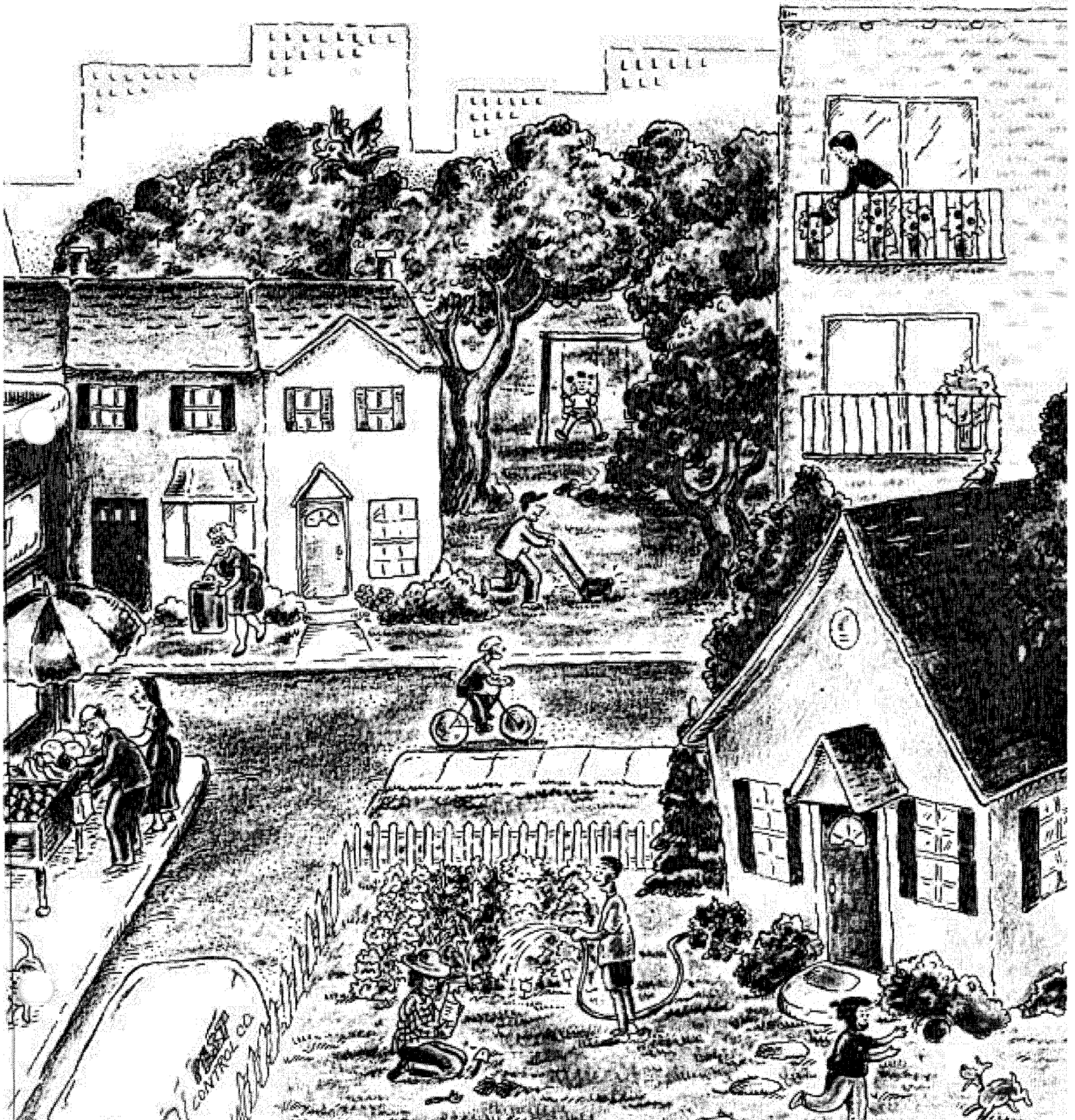
United States
Environmental Protection
Agency

Prevention, Pesticides,
and Toxic Substances
(7501C)

EPA 730-K-95-001
September 1995



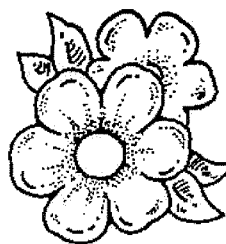
Citizen's Guide to Pest Control and Pesticide Safety



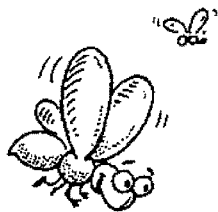
Contents



Foreword	1
Introduction	2
Pests, Pest Control, and Pesticides	3
Pest Management	3
First Steps in Pest Management	4
Preventing Pests	6
Indoor Prevention	6
Outdoor Prevention	7
◆ Gardening	7
◆ Lawn Care	8
Using Non-Chemical Pest Controls	11
Biological Controls	11
Manual Methods	12
Using Chemical Pest Controls	13
Choosing the Right Pesticide Product	14
Reading the Pesticide Label	16
Determining the Correct Amount To Use	18
Using Pesticides Safely and Correctly	19
◆ Before Using a Pesticide	19
◆ When Mixing or Applying a Pesticide	19
Indoor Applications	20
Outdoor Applications	21
◆ After Applying a Pesticide	22
Storing and Disposing of Pesticides Properly	23
◆ Safe Storage of Pesticides	23
◆ Safe Disposal of Pesticides	24



Reducing Your Exposure	
When Others Use Pesticides	26
Exposure Through Food	26
◆ Commercial Food	26
◆ Home-Grown Food	27
◆ Food from the Wild	27
Exposure Through Water	28
Exposure Through Air	28
◆ Outdoors	28
◆ Indoors	29
Poisoned by Pesticides:	
Don't Let This Happen to Your Child!	30
Handling a Pesticide Emergency	32
First Aid for Pesticide Poisoning	33
What To Do After First Aid	34
How To Recognize Pesticide Poisoning	35
Choosing a Pest Control Company	36
Reference Section	39
Calculating the Correct Amount of Pesticide	
To Use for Your Target Area	39
For More Information	42
Addresses	44
◆ EPA Regional Offices	44
◆ State Pesticide Agencies	45
Index	49



Foreword

The Environmental Protection Agency (EPA) is charged with ensuring that pesticides do not pose unreasonable risks to the public and to the environment. EPA regulates the use of pesticides under the authority of two laws—the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Federal Food, Drug and Cosmetic Act (FFDCA). Most all pesticides may legally be sold in the United States if they have been “registered” by EPA and if they bear an EPA registration number. Federal pesticide registration, however, is only the first step in preventing pesticide risks. Just as important are the steps that consumers take to control pests and use pesticides safely. EPA hopes that this booklet will help you control pests safely.

Introduction



SOONER OR LATER, we're all pestered by pests. Whether it's ants in the kitchen or weeds in the vegetable garden, pests can be annoying and bothersome. At the same time, many of us are concerned that the pesticides we use to control pests can cause problems too. How can pests be controlled safely? When and how should pesticides be used?

This booklet is intended to help answer these questions. The questions have no single right answer, but *Citizen's Guide to Pest Control and Pesticide Safety* gives the information you need to make informed decisions. You should be able to control pests without risking your family's health and without harming the environment.

The major goals of this booklet are to help you understand—

- ◆ What steps to take to control pests in and around your home.
- ◆ What alternatives to chemical pesticides are available, including pest prevention and non-chemical pest controls.


Did you know that these common household products are pesticides?

- ✓ Cockroach sprays and baits.
- ✓ Insect sprays and wasp repellents for indoor use.
- ✓ Insect repellents for personal use.
- ✓ Termite control products.
- ✓ Rat and other rodent poisons.
- ✓ Flea and tick sprays, powders, and pet collars.
- ✓ Kitchen, laundry, and bath disinfectants and sanitizers, including bleach.
- ✓ Products to kill mold and mildew.
- ✓ Lawn and garden products such as weed killers.
- ✓ Swimming pool chemicals, including those that kill algae.
- ✓ Repellents that keep deer, raccoons, or rabbits away from your garden.

- ◆ How to choose pesticides and how to use, store, and dispose of them safely.
- ◆ How to reduce your exposure when others use pesticides.
- ◆ How to choose a pest control company.
- ◆ What to do if someone is poisoned by a pesticide.



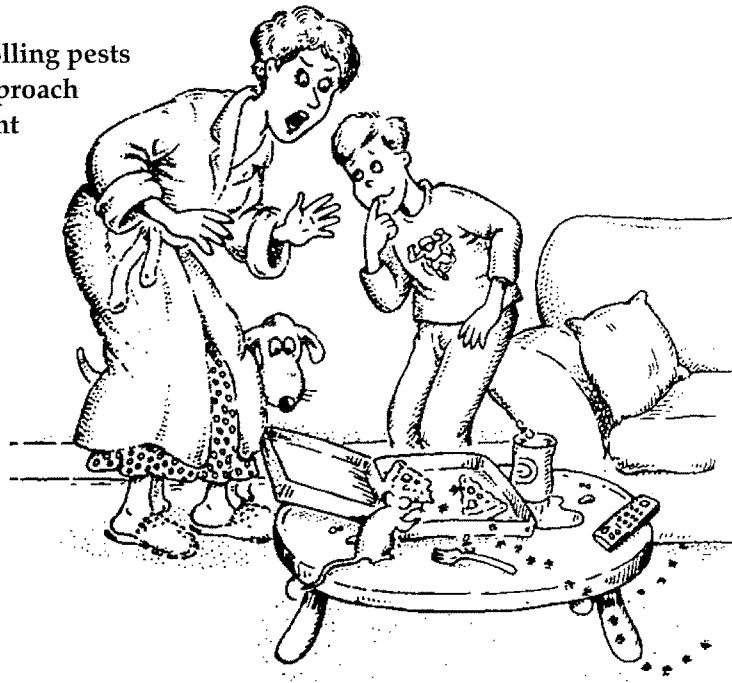
Pests, Pest Control, and Pesticides

 **P**LANTS, insects, mold, mildew, rodents, bacteria, and other organisms are a natural part of the environment. They can benefit people in many ways. But they can also be pests. Apartments and houses are often hosts to common pests such as cockroaches, fleas, termites, ants, mice, rats, mold, or mildew. Weeds, hornworms, aphids, and grubs can be a nuisance outdoors when they get into your lawn, flowers, yard, vegetable garden, or fruit and shade trees. Pests can also be a health hazard to you, your family, and your pets. It's easy to understand why you may need and want to control them.

Nowadays, you can choose from many different methods as you plan your strategy for controlling pests. **Sometimes a non-chemical method of control is as effective and convenient as a chemical alternative.** For many pests, total elimination is almost impossible, but it is possible to control them. **Knowing your options is the key to pest control.** Methods available to you include pest prevention, non-chemical pest controls, and chemical pesticides. Each of these methods will be described in more detail in the next three sections of this booklet (starting on pages 6, 11, and 13).

Pest Management

The most effective strategy for controlling pests may be to combine methods in an approach known as **integrated pest management (IPM) that emphasizes preventing pest damage.** In IPM, information about pests and available pest control methods is used to manage pest damage by the most economical means and with the least possible hazard to people, property, and the environment. An example of using the IPM approach for lawn care is presented in the next section of this booklet titled "Preventing Pests."



Some signs of pest infestation are unmistakable.

Knowing a range of pest control methods gives you the ability to choose among them for an effective treatment. Knowing the options also gives you the choice of limiting your exposure to potentially harmful chemicals. No matter what option you choose, you should follow these steps to control your pest problem:

First Steps in Pest Management

1 Identify the pest problem. This is the first and most important step in pest control—figuring out exactly what you’re up against. Some pests (or signs of them) are unmistakable—most people recognize a cockroach or a mouse. Other signs that make you think “pest” can be misleading. For example, what may look like a plant “disease” may be, in fact, a sign of poor soil or lack of water.

Use **free sources** to help identify your pest and to learn the most effective methods to control it. These sources include library reference books (such as insect field guides or gardening books) and pest specialists at your County Cooperative Extension Service or local plant nurseries. These resources are usually listed in the telephone book.

2 Decide how much pest control is necessary. Pest control is not the same as pest elimination. Insisting on getting rid of all pests inside and outside your home will lead you to make more extensive, repeated, and possibly hazardous chemical treatments than are necessary. Be reasonable. Ask yourself these questions:

- ◆ Does your lawn really need to be totally weed free?
- ◆ Recognizing that some insects are beneficial to your lawn, do you need to get rid of all of them?
- ◆ Do you need every type of fruit, vegetable, or flower you grow, or could you replace ones that are sensitive to pests with hardier substitutes?
- ◆ Can you tolerate some blemished fruits and vegetables from your garden?
- ◆ Is anyone in your home known to be particularly sensitive to chemicals?

3 Choose an effective option. Use the information gathered in Step 1, your answers to the questions in Step 2, and guidance in the sections titled “Preventing Pests,” “Using Non-Chemical Pest Controls,” and “Using Chemical Pest Controls” to determine which option you want to choose. If you’re still uncertain, get further advice from the free sources listed in Step 1.

4 Evaluate the results. Once a pest control method has been chosen and implemented, always allow time for it to work and then evaluate its effectiveness by taking the following steps:


- ◆ Compare pre-treatment and post-treatment conditions. Is there evidence of a clear reduction in the number of pests?
- ◆ Weigh the benefits of short-term chemical pesticide control against the benefits of long-term control using a variety of other treatments, including non-chemical methods.

It’s easier to prevent pests than to control them. You may not need to worry about the four pest control steps just mentioned **IF** you make the effort to prevent pests in the first place.



The first step in pest control is to identify the pest.

Preventing Pests

 **PESTS SEEK PLACES TO LIVE** that satisfy basic needs for air, moisture, food, and shelter. The best way to control pests is to try to prevent them from entering your home or garden in the first place. You can do this by removing the elements that they need to survive. Take the following preventive actions:

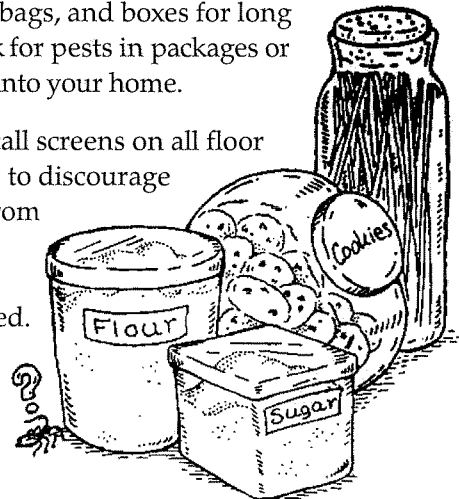
Indoor Prevention

◆ **Remove water.** All living things, including pests, need water for survival. Fix leaky plumbing, and do not let water accumulate anywhere in or around your home. For example, do not leave any water in trays under your houseplants, under your refrigerator, or in buckets overnight. Remove or dry out water-damaged and wet materials. Even dampness or high humidity can attract pests.

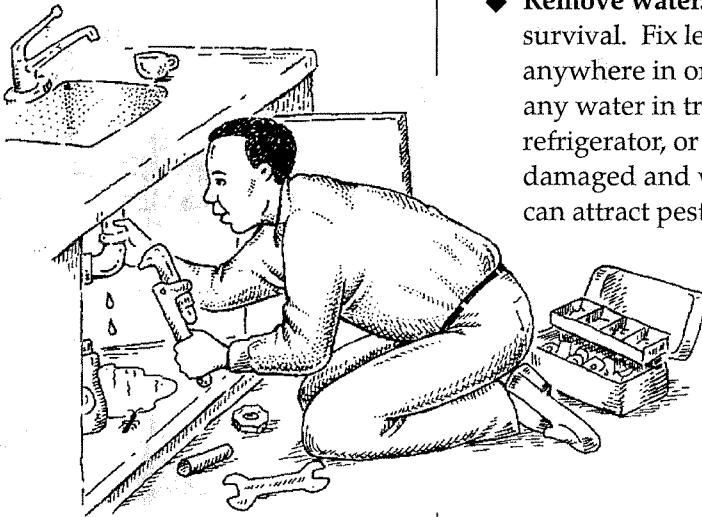
◆ **Remove food.** Store your food in sealed glass or plastic containers, and keep your kitchen clean and free from cooking grease and oil. Do not leave food in pet bowls on the counter or floor for long periods of time. Put food scraps or refuse in tightly covered, animal-proof garbage cans, and empty your garbage frequently.

◆ **Remove or block off indoor pest hiding places.** Caulk cracks and crevices to control pest access. Bathe pets regularly and wash any mats or surfaces they lie on to control fleas. Avoid storing newspapers, paper bags, and boxes for long periods of time. Also, check for pests in packages or boxes before carrying them into your home.

◆ **Block pest entryways.** Install screens on all floor drains, windows, and doors to discourage crawling and flying pests from entering your home. Make sure any passageways through the floor are blocked. Place weatherstripping on doors and windows. Caulk and seal openings in walls. Keep doors shut when not in use.



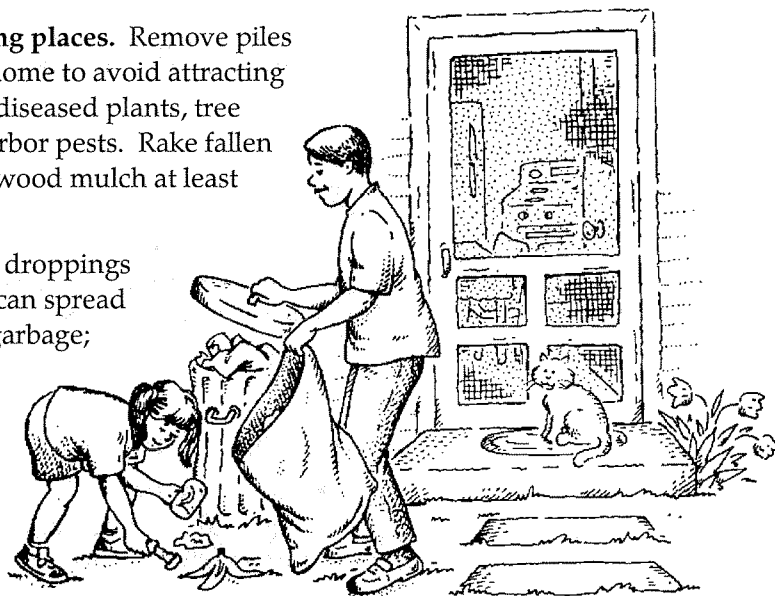
Store food in sealed containers.



Pests need water to survive. Fix leaky pipes.

Outdoor Prevention

- ◆ **Remove or destroy outdoor pest hiding places.** Remove piles of wood from under or around your home to avoid attracting termites and carpenter ants. Destroy diseased plants, tree prunings, and fallen fruit that may harbor pests. Rake fallen leaves. Keep vegetation, shrubs, and wood mulch at least 18 inches away from your house.
- ◆ **Remove breeding sites.** Clean up pet droppings from your yard; they attract flies that can spread bacteria. Do not accumulate litter or garbage; it draws mice, rats, and other rodents. Drain off or sweep away standing puddles of water; water is a breeding place for mosquitos and other pests. Make sure drain pipes and other water sources drain away from your house.
- ◆ **Take proper care of all outdoor plants.** These include flowers, fruit and shade trees, vegetable and other plants, and your lawn. Good plant health care reduces pest control needs—healthy plants resist pests better than do weak plants. Plant at the best time of year to promote healthy growth. Use mulch to reduce weeds and maintain even soil temperature and moisture. Water adequately. Native flowers, shrubs, and trees often are good choices because they adapt well to local conditions and require minimal care.



Remove breeding sites.
Clean up litter or garbage.

Gardening

- ◆ Select healthy seeds and seedlings that are known to resist diseases and are suited to the climate where you live. Strong seeds are likely to produce mature plants with little need for pesticides.
- ◆ If your garden is large, alternate rows of different kinds of plants. Pests that prefer one type of vegetable (carrots, for example) may not spread to every one of your carrot plants if other vegetables (not on the pests' diet) are planted in the neighboring rows.
- ◆ Don't plant the same crop in the same spot year after year. That way your plants are not as vulnerable to pests that survive the winter.
- ◆ Make sure your garden plot has good drainage. Raised beds will improve drainage, especially of clay soils. If a heavy clay soil becomes compacted, it does not allow air and water to get to the roots easily, and plants struggle to grow. To loosen