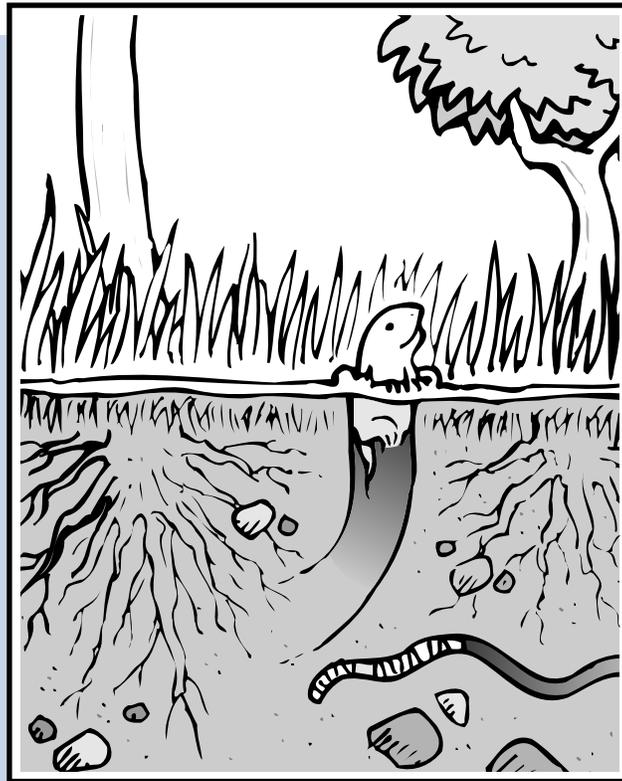




Community Partners for Clean Streams



SERIES #5: Maintaining Landscapes



COMMUNITY PARTNERS FOR CLEAN STREAMS

NOTE: This handbook is one in a series of handbooks that describe specific practices businesses can use to protect water quality. A complete list of all handbooks and fact sheets available through the Community Partners for Clean Streams program is provided on the inside of the back cover. To obtain other handbooks in this series contact the Program Manager at the address or phone number provided below.

Becoming a "Community Partner for Clean Streams"

We hope you'll join with the Washtenaw County Drain Commissioner's office and other area businesses and institutions by participating in the Community Partner for Clean Streams program. Through this program, businesses help protect the Huron River and local streams.

To participate in the program, fill out the checklist in the back of this handbook. Send it to the address below and our staff will work with you to become a Community Partner for Clean Streams. In return for your effort, we'll publicly acknowledge your business through newspaper articles, displays and speaking engagements. We'll also encourage consumers to look for the Community Partners logo at your business when they select services.

Washtenaw County Award for "Environmental Excellence"

By becoming a Community Partner, your business will have completed the water quality criteria for Washtenaw County's "Environmental Excellence" award. This annual award is presented to businesses in the County that proactively protect the environment. For more information about this award program, contact the Community Partners Program Manager:

**Community Partners for Clean Streams Program Manager
Washtenaw County Drain Commissioner's Office
110 N. Fourth Ave.
Ann Arbor, MI 48107-8645**

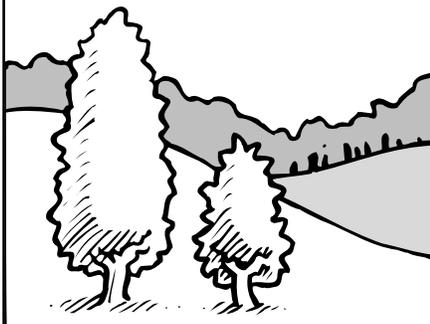
**Phone: (313)994-8344 or 994-2525
Fax: (313)994-2459**

Maintaining Healthy Lawns, Shrubs and Trees

Why be concerned?

Landscaping practices affect both the quantity and quality of stormwater runoff. Compacted soils, thatch build-up, and overwatering increase the volume of runoff. Fertilizers and pesticides impair stormwater quality. Good soil preparation and low-maintenance plantings reduce the need for irrigation, fertilizers and pesticides. In addition, to protecting water quality, minimizing the use of water and chemicals makes good economic sense. For example, one Michigan company reduced the annual cost of maintaining its landscape from \$2,500/acre to \$500/acre by replacing its traditional landscape with native plantings.

Washtenaw County MSU Extension has a variety of publications and services available to help develop an environmentally responsible program for any landscape. The Extension Service handles over 5,000 requests every year for information about everything from how to select appropriate plantings to the identification and treatment of specific plant diseases and pests. For more information, call MSU Extension at (313) 971-0079.



Three Steps to a Strong Soil Foundation

1. Have the pH and fertility of your soil tested by MSU Extension - your soils may not require *any* fertilizer. If, based on soil testing, it's determined that fertilizing is required, follow the recommendations in **Series #5, Fact Sheet 5.2**.

2. Test soil compaction. Compacted soils are unhealthy for plants and can generate as much runoff as pavement. To test for soil compaction, try sinking a screwdriver into the ground without pounding. If the screwdriver doesn't penetrate easily, aerate the soil with a hand or mechanical corer. Don't use spike type rollers: these actually make compaction worse. Sometimes, aeration is the only thing that's needed to turn a problem landscape into a thriving one.

3. Examine soil texture and drainage. Neither very sandy nor heavy clay soils provide a good foundation for lawns or other plantings. To examine soil texture, squeeze a hand full of soil into a ball. If the soil falls apart it's too sandy; if the soil stays in a clump it has too much clay. In general, soil with a good texture will stay pretty spongy.

To improve soil texture and drainage, amend soils that have too much sand or clay as follows:

Sandy soils: add compost or other organic matter to hold nutrients and prevent leaching.

Clay soils: add organic matter and sandy loam for coarseness. Don't use sand, since mixing sand with clay will produce a soil similar to concrete.



Water With Care

Overwatering sandy soils can cause nutrients to leach away too quickly. Since heavy soils are easily saturated, overwatering clay soils can cause plants and microorganisms to drown. (Microorganisms both aerate the soil and help to break down thatch.)

Proper watering will depend on a number of factors including soils and current weather patterns. In general:

- Adjust timers on automatic sprinkler systems every week or so, depending on the weather. (If soils are healthy, turf grass should only need about 1 1/4" of water a week in warm weather.)
- Avoid overspray onto impermeable surfaces.
- Maintain irrigation systems. This may involve repairing leaks, broken heads, and risers, as well as adjusting application patterns and rates to minimize runoff.

Non-Toxic Pest Control

Maintaining a healthy landscape will enable plants to resist pests and crowd out weeds. If you must actively control pests, select the least toxic methods available. For more information about controlling weeds and pests, see **Series #5, Fact Sheets 5.3 and 5.4**.

Converting Lawns to Low-Maintenance Plantings

Reduce the need for fertilizers, pesticides, mowing, and watering by replacing turf grass with lower maintenance plantings. Most lawns have areas that aren't suited for growing grass (for example, steep slopes or areas that are very wet or shaded). While it's possible to grow grass in these places, higher water and chemical inputs are usually needed to compensate for inhospitable conditions.

(continued from other side)

Examine your lawn for opportunities to convert it to other plantings. These can range from expanding flowerbeds and other plantings to using turf *only* where it's the best plant to fulfill a particular function, such as active recreation. In areas that must be maintained as lawn, plant grass species that are well adapted to our local climate. If you need assistance identifying the plant species that are best suited for a specific site and purpose, contact MSU Extension.

High Mowing, Deep Roots

High mowing will keep lawns thick and healthy and significantly help to shade out weeds. Adjust mowers so that only the top one-third of the grass blade is cut and/or leave grass at least 3" high after cutting. Shorter grass blades won't produce enough carbohydrates to feed root growth. (In well prepared soil, roots should be 4" to 6" deep.)

Recycle Clippings

If left on the lawn, clippings provide important moisture and nutrients (clippings can provide up to half the nitrogen needed by your lawn). Since they're about 85% water, clippings quickly break down and *don't* cause thatch.

If your grass grows vigorously, you may need to periodically collect clippings. If they haven't decomposed before the next mowing, remove clippings and recycle them by using them as mulch, adding them to soil or mixing them in with compost. As the season changes and grass growth slows, clippings can again be left on the lawn.

Managing Thatch

Thatch is the woody remains of grass (roots, stems, and sheaths). Thatch builds up when there aren't enough microorganisms in the soil to break woody grass remains down

Don't use insecticides and keep soil aerated to encourage microorganisms and reduce thatch. If thatch builds up over 1/2", aerate the soil and sprinkle compost or sifted topsoil over the lawn (a practice called top dressing) instead of fertilizing.

"WEED & FEED" COMBINATIONS: A Dangerous Diet

Many lawn care companies routinely combine fertilizers and pesticides in a series of applications throughout the spring, summer and fall. These multi-step programs are promoted as the sure and easy path to a "perfect" lawn. The pressure to have a perfect lawn, however, has clouded a number of issues and literally mixed ingredients that should be kept separate:

Routine insecticide application.

Since most insects found on a lawn are beneficial, insecticides should rarely be part of a lawn care program. Research indicates that only about one lawn in 200 will need an insecticide application in a given year. Even on lawns where harmful insects exist, better horticultural practices or other natural controls can be used to reduce their threat.

Routine herbicide application.

Weeds aren't the cause of an unhealthy lawn, they're the *result* of one. The best defense against weeds is a thick healthy lawn that comes from proper watering, fertilizing and mowing. Routine herbicide applications are unnecessary and their effects can be misleading. For example, "Weed 'n' Feed" products are widely used to kill dandelions in the spring, when the flowers are most noticeable. While the curling weeds seem to indicate that the herbicide's been effective, in fact, it probably killed only the top of the weed, not the roots.

Routine nutrient application.

Most commercial fertilizers contain phosphorus, a major water pollutant. Yet many soils already contain enough phosphorus for a healthy lawn. This underscores the need for soil testing before applying fertilizer. Low-phosphorus or phosphorus-free fertilizers can provide necessary nutrients while avoiding the threat to water quality.

Given the amount of damage that lawn care chemicals cause to human health and the environment, changing our aesthetic values is one of the most important things we can do to protect water quality.

Composting

Consider installing a compost facility at your business site. If you're a landscaping contractor, encourage your clients to compost, as well. Be sure to locate your compost area so that it doesn't leach into a stream or storm drain.

If you don't compost on-site, try to take plant waste to a municipal composting facility. For locations, call one of the numbers listed under "Getting Help."



Maintaining Vehicles and Equipment

Keep vehicles and equipment clean and regularly inspect them for leaks (if allowed to leak, pollutants will soak through the soil or wash off with storm water). Don't clean vehicles or equipment where wash water will run into a storm drain or stream. If you aren't sure where a drain leads, call the Drain Commissioner's office and request that it be dye-tested. For more information about maintaining equipment and vehicles, see **Series #3**.

GETTING HELP

MSU Extension Office for
Washtenaw County (313) 971-0079

City of Ann Arbor Natural Areas
Preservation Coordinator (313) 994-4834

City of Ann Arbor
Solid Waste Department (313) 994-2807

City of Ypsilanti Recycling,
Compost and Trash (313) 480-1030

Washtenaw County DPW
Solid Waste Program (313) 994-2398

Community Partners
for Clean Streams (313) 994-8344

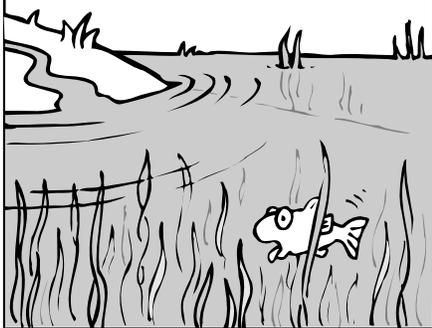


Using Fertilizer

Why be concerned?

Excess fertilizers can wash into waterways, stimulating nuisance weed and algae growth. Excessive plant growth can choke slow moving waters, and take up oxygen in the water needed by fish and other aquatic life.

Most commercial fertilizers contain phosphorus, a major water pollutant in the Huron River. High phosphorus levels have stimulated nuisance weed and algae growth in Barton Pond, Geddes Pond and Ford Lake.



In addition, slow-release fertilizers provide plants with a lower concentration of nutrients over a longer period of time. Fast-release fertilizers do the opposite.

- Use slow-release fertilizers on sandy soils, to ensure that concentrated amounts of nutrients aren't available for leaching.
- Use fast-release fertilizers on heavy, clay or compacted soils - the longer a fertilizer granule remains undissolved, the greater its chances of being washed into waterways.

If a slow-release fertilizer is required, consider using an organic fertilizer such as manure or meal. Compared to synthetic fertilizers, most organic fertilizers contain relatively small concentrations of nutrients and release these nutrients more slowly. If manure is applied in hot weather, till it well into the soil to avoid ammonia volatilization.

Since it's a pollutant of concern in the Huron River, avoid the use of phosphorus unless it's specifically recommended based on soil testing.

Fertilizing Shrubs and Trees

Healthy trees and shrubs do *not* require annual fertilizing. If woody plants appear unhealthy, it may be due to poor soils, insects, disease or current weather patterns. Fertilizers should be applied only when a tree or shrub is growing poorly and the problem can't be traced to other causes. For help diagnosing problems before applying fertilizer, contact Washtenaw County MSU Extension.

If trees or shrubs do need fertilizer, apply it when the plants are dormant, in late fall or early spring. Fertilizing in *early* fall or *late* spring stimulates growth that depletes stored food supplies and weakens the plants ability to survive harsh winters and summers.

Applying Fertilizers

When applying fertilizers, follow the label directions *exactly* and keep fertilizers off paved areas. If you use a liquid fertilizer, be careful to avoid overspraying and drift. The fertilizer may land on an area that drains straight into a storm drain or stream.

Soil Testing: The 1st Step

Before applying fertilizer, have your soil tested by Washtenaw County MSU Extension. Based on soil testing, an Extension agent can tell you the exact types and amounts of fertilizer your soil will need to support the desired use. Depending on the plantings and use desired, your soil may not require *any* fertilizer.

Fertilizing Lawns

Lawn fertilization programs should begin in early October, *not* in May. Spring applications can actually harm lawns by promoting more blade growth than root growth. Shallow root systems can't sustain lawns through a drought or harsh winter. Fall fertilizing promotes deep, healthy root systems and hardy lawns.

Choosing the Right Fertilizer

In general, nitrogen promotes leafy top growth, phosphorus promotes root growth and potassium improves overall durability.

By leaving clippings on the lawn, nitrogen applications can be reduced by up to 50%. Contrary to popular belief, grass clippings *don't* cause thatch. Thatch is the woody remains of grass (roots, stems, and sheaths), which can build-up due to compacted soils and improper insecticide use.

Combining Fertilizers and Pesticides

Using fertilizer-pesticide mixes usually leads to unnecessary pesticide applications. For more information about using fertilizer-pesticide combinations, see **Series #5, Fact Sheet 5.1.**

GETTING HELP

MSU Extension Office for
Washtenaw County (313) 971-0079

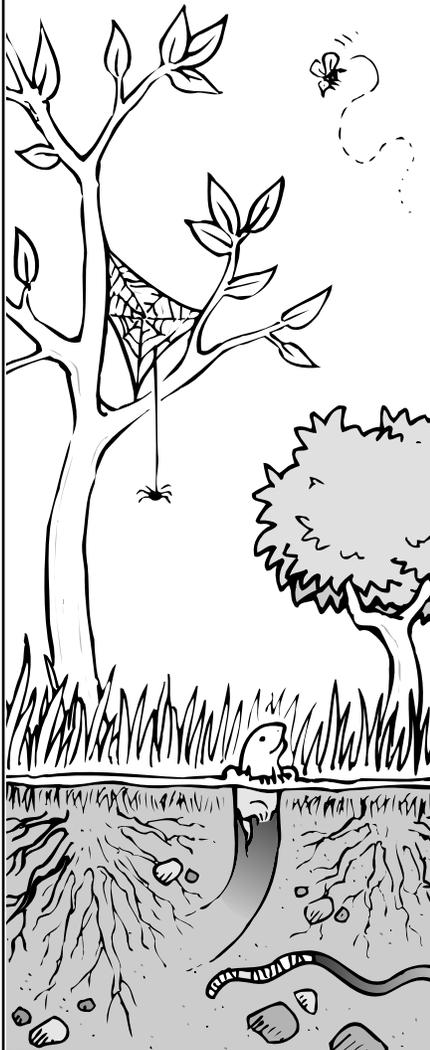
Community Partners for
Clean Streams (313) 994-8344



Integrated Pest Management

Why be concerned?

Synthetic pesticides are poisonous substances. Scientists know that many of them are harmful to plants, animals and people. (Many of our most commonly used pesticides are carcinogenic and/or neurotoxins.) Integrated Pest Management (IPM) is an alternative to purely chemical pest control, providing a safer, less expensive and more consistent eradication of any pest over the long term.



What is Integrated Pest Management?

IPM recognizes that pests are an integral part of the natural system, and works to keep them at tolerable levels by using cultural, mechanical and biological controls instead of chemical ones, whenever possible. The IPM practitioner closely watches the landscape and manages it in a way that provides optimum growing conditions for those plants desired since healthy plants are less susceptible to pests. This includes working to eliminate conditions favorable to pests and to promote natural controls such as beneficial insects.

When pest controls are needed, the pest and its stage of development are identified, and the least toxic control possible is used. Pesticides are used only as a last resort and only in a way that maximizes their effectiveness and minimizes damage to the environment.

Choosing plants

Choose plants that naturally tend to be free of major pests and diseases. In addition, select plants that are well-adapted to our temperate climate – and to the specific soil, light and moisture conditions on-site (for example, plants that require shade are more susceptible to pests when grown in full sun). pH levels also affect a plant's ability to withstand pests. For help identifying the plant(s) best suited for your purposes and site, contact Washtenaw County MSU Extension.



Keeping Plants Healthy

Weeds, pests and diseases are usually the *result* of poor growing conditions and unhealthy plants, not the cause of them. To keep plants healthy, use good horticultural techniques. Maintaining good soils and other cultural conditions are the foundation of any IPM program:

- Plant seeds and plants when they are the least susceptible to stress.
- Maintain a variety of plants instead of only one or two species.
- Aerate and add organic matter to the soil.
- Water and fertilize plants only as needed.
- Mow grass as high as possible and leave clippings on the lawn.
- Space, thin and prune shrubs and trees to promote air circulation.

Promoting air circulation is the first and most important thing that can be done to manage plant disease. There are *no* cures for plant diseases - they can only be prevented.

Watching Your Landscape

Monitor the site at regular intervals. Learn to identify pests and diseases, as well as beneficial insects. For each of these, become familiar with their development stages and what they need to survive. This way, you can time control actions so that they take place during the most vulnerable stage of weed, insect or disease development.

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Defining “Damage”

For each potential pest, decide when a problem is serious enough to justify taking action. For example, broadening your definition of “lawn” to include certain “weeds” can lower the need for chemical herbicides. Changing our aesthetic values is one of the most important things we can do to protect water quality.

Protecting Sensitive Areas

Consider whether the site is near a water body, a dry pond or drainage ditch, vegetable garden, children’s play area, or public place. If it is, select a pest management technique that minimizes harm to these sensitive areas.

Evaluating Your Actions

Notice whether the treatment worked and consider adjustments that might work better. Keep records of your observations, actions taken, and the results of those actions.

Chemical Pesticides: a Last Resort

In IPM, chemicals are just one small part of the whole plan. If pesticides are used, the least toxic one should be chosen and applied at the most effective time in the pest’s life cycle. For more information about using pesticides, see **Series #5, Fact Sheet 5.4**.

The Secrets of Chemical-Free Pest Control

When treatment becomes necessary, select methods that are least disruptive to natural pest controls and least hazardous to human health and the environment. Start with cultural, mechanical or biological controls.

Cultural Controls

Cultural controls are practices that will keep plants healthy such as selecting disease and pest resistant varieties and maintaining a good soil foundation. Redesigning the landscape so that it can’t support the pest can be the most cost-effective long-term cultural control strategy. For more information about maintaining a healthy landscape, see **Series #5, Fact Sheet 5.1**.

Mechanical Controls

Mechanical controls include:

- removing insect eggs, larvae, cocoons, and adults from plants by hand
- removing weeds by pulling or hoeing
- covering the garden with landscape fabric or mulch to prevent weed germination.
- removing pest-infested plant residue in the fall.

Biological Controls

Many organisms feed on or infect pests. These natural enemies frequently prevent the pest population from reaching damaging levels. Biological controls include predators, parasites, pathogens, pheromones and juvenile hormones. For more information about these and other chemical-free control techniques, contact one of the agencies listed under “Getting Help.”

GETTING HELP

MSU Extension Office
for Washtenaw County(313) 971-0079

Natural Areas Preservation
Coordinator for the
City of Ann Arbor (313) 994-4834

Community Partners for
Clean Streams(313) 994-8344

Using Pesticides

Why be concerned?

Pesticides can harm people and pets, kill helpful organisms (such as bees, earthworms, and the pest's natural enemies), and pollute ground and surface waters. The potential harm from pesticides depends on many factors such as how persistent the pesticide is, whether it affects a few or many species, and whether it accumulates in living tissue.

The risks of using a pesticide are greatest when the label directions aren't followed *exactly*; that's why not following the directions is against federal law. It's also illegal to apply pesticides for hire on someone else's property without a commercial applicator's license from the Michigan Department of Agriculture.



Choosing Pesticides

The fact that a pesticide is labeled "natural," "organic" or "biodegradable" doesn't guarantee that it's safe. For example, pesticides derived from plants such as *rotenone*, *nicotin*, *ryania*, *pyrethrum*, and *sabadilla* aren't any safer than many synthetic pesticides.

Carefully read product labels. These contain information about the pesticide's toxicity and persistence. A pesticide's persistence is the length of time it takes to break down to one-half its previous concentration (also called half-life). In general, avoid pesticides with half-lives longer than 21 days. For more specific information about choosing the least toxic pesticide, contact one of the agencies listed under "Getting Help."

Developing a Pesticide Plan



For each landscape that your business is responsible for maintaining, develop a pesticide plan that lists:

- specific uses for selected pesticides;
- brands, formulations, application methods and quantities to be used;
- equipment use and maintenance procedures;
- safety, storage and disposal methods, and;
- monitoring, record-keeping, and public notice procedures.

Establish procedures for reviewing pesticide plans annually. Be sure to evaluate the effectiveness of all treatments used, public concerns, effects on sensitive areas, and any recent toxicological information.

Mixing and Applying Pesticides

- Schedule treatments to take place during the most vulnerable stage in the pest's life cycle and when least disruptive to naturally existing pest controls.

- Always wear protective clothing when handling pesticides.

- Know what to do if a spill occurs and take steps to prevent them. (For example, close containers tightly after each use, even if you plan to reopen them soon.) Be sure to have adequate clean-up materials readily available. For more information about spill prevention and clean-up, see **Series #1, Fact Sheet 1.2**.

- Mix pesticides where spills won't be able to soak into the ground or enter a storm drain or stream. When using large tank sprayers, mix only the amount needed at the job site.

- Follow the label directions *exactly*. Never use rough estimates when mixing or applying pesticides. Never mix different pesticides unless explicitly instructed to on the product label.

- Calibrate equipment frequently and be aware of weather conditions that can cause drift. Use application equipment that can be shut off immediately in an emergency.

- Apply pesticides to the problem area *only*, versus wholesale over a wider area.

- Once an application is made, evaluate its effectiveness.

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Cleaning Containers

Immediately triple rinse or power rinse empty containers in the field, at the time of application. According to Washtenaw County MSU Extension, triple-rinsing is carried out in several steps:

1. Allow the concentrate to drain from the empty pesticide container for 30 seconds
2. Fill 20% of the container with water, replace the lid and shake the container so that all interior surfaces are rinsed.
3. Drain the rinse water into the spray tank, allowing it to drain for at least 30 seconds.
4. Repeat steps #2 and #3 two more times.
5. Use the rinse water (or “rinseate”) according to label directions.

Unlike triple rinsing, pressure rinsing requires the use of a special nozzle. However, studies indicate that pressure-rinsing may be up to three times more effective than triple-rinsing and can take less time. To pressure-rinse, wear protective clothing (especially gloves and goggles) and follow these steps:

1. Allow the concentrate to drain from the empty pesticide container for 30 seconds.
2. Push the pointed pressure-rinse nozzle through the pesticide container while holding it over the spray tank.
3. Pressure-rinse the container for 30 seconds, allowing the rinse water to drain into the spray tank.
4. Triple-rinse the container cap with a slower flow of water, capturing the rinse water in the spray tank.

Disposing of Empty Containers

Be sure to dispose of containers in accordance with the label directions and with federal, state and local laws. If empty pesticide containers can't be refilled, reconditioned, recycled or returned to the manufacturer, crush, break or puncture them so that they can't be reused.

Clean and Leak-Free Equipment

- Keeping equipment free of leaks will prevent pesticides and other fluids from being deposited onto the ground.
- Clean equipment as soon as you've finished using it - don't leave equipment that contains pesticide residue at the mixing, loading or application site. You can reduce equipment cleaning by clustering jobs that use the same spray solution.
- Don't allow rinse water to flow into water systems, including storm drains, ditches, wells, and streams. Collect rinse water and apply it to a compatible site at or below the labeled rate. Don't add rinse water to a pesticide mix if it could be incompatible with the mix or if it contains a cleaning agent that could harm plants and animals.

For more information about properly cleaning and maintaining equipment, see **Series #3** or call one of the agencies listed under “Getting Help.”



Storing Pesticides

- Before buying pesticides, calculate how much you need and purchase only that amount.
- Mark the date of purchase on each container so that older materials can be used first.
- Locate storage areas at least 150 feet from any drinking water well and at least 200 feet from any area that holds water, even intermittently, such as a drainage ditch or dry detention pond.
- Store pesticides indoors, in areas designed to *completely* contain leaks and spills. Clearly mark pesticide storage areas with warning signs. For more information about properly designing storage areas, see **Series #1, Fact Sheet 1.1**.

GETTING HELP

MSU Extension Office for
Washtenaw County (313) 971-0079

Michigan Department of
Agriculture (800) 292-3939

Community Partners for
Clean Streams (313) 994-8344

**Community Partners for Clean Streams
WATER QUALITY ACTION PLAN**

**SERIES #5: MAINTAINING LANDSCAPES
Fact Sheets 5.1, 5.2, 5.3, and 5.4**

Completing Your Water Quality Assessment and Action Plan

To create your own "Water Quality Action Plan", please fill out the following checklist (instructions are included on the other side of this page). The "Actions" in this checklist directly correspond to recommendations made within this handbook. If you have any questions or would like help completing this form, please contact the Community Partners for Clean Streams Program Manager at (313)994-8344 or (313)994-2525. Send completed checklists to:

Community Partners for Clean Streams
Washtenaw County Drain Commissioner's Office
110 N. Fourth Ave.
Ann Arbor, MI. 48107-8645
Fax: (313)994-2459

NOTE: To become a "Community Partner for Clean Streams", all checklists that apply to your business must be filled out and returned. A complete listing of all program handbooks/checklists is provided on the inside of the back cover. To obtain copies, contact the Community Partners Program Manager.

Business Information

Business Name: _____

Type of Business: _____ No. of Employees: _____

Address: _____ Zip: _____

Contact Person: _____ Title: _____ Phone: _____

Water Quality Action Plan prepared by: _____ Date: _____

Business Activities That Can Affect Water Quality

Please check the activities that your business is responsible for:

- | | | |
|---|--|--|
| <input type="checkbox"/> Storing materials | <input type="checkbox"/> Maintaining buildings/pavement | <input type="checkbox"/> Maintaining landscapes |
| <input type="checkbox"/> Spill containment and response | <input type="checkbox"/> Maintaining constructed stormwater controls | <input type="checkbox"/> Site design and/or construction |
| <input type="checkbox"/> Managing wastes | <input type="checkbox"/> Managing employees | |



Directions for Completing this Checklist (see sample below):

1. For each action, check the appropriate box in the ASSESSMENT column (*Not Applicable, Always, or Needs Improvement*).
2. Next, check the corresponding box in the ACTION PLAN column (*Plan to Continue or Plan to Improve*).
3. For every current *and* proposed action, indicate who will do it and in when.
4. If possible, provide additional information (about both current *and* proposed activities) in the space preceded by the word "Action(s)". If insufficient space has been provided, please feel free to attach extra pages.
5. If the action requires ongoing employee training or commitment from management, check that box as a reminder to include it in you employee education activities.
6. Detach the checklist from this handbook and return it to Community Partners for Clean Streams!

EXAMPLE	ASSESSMENT	ACTION PLAN
<p>1. Steps are taken to minimize the amount of potentially polluting materials and wastes kept in storage.</p>	<p> <input type="checkbox"/> Not applicable <input type="checkbox"/> Always <input checked="" type="checkbox"/> Needs improvement </p>	<p> <input type="checkbox"/> Plan to continue <input checked="" type="checkbox"/> Plan to improve </p>
	<p>Who: <u>Purchasing Dept./Facilities Manager</u></p> <p>Schedule: <u>As applicable</u></p> <p>Action(s): <u>Deicing chemicals will be purchased in smaller quantities and stored in water-proof, leak-proof containers</u></p> <hr/> <hr/>	
	<p><input type="checkbox"/> Requires ongoing education/commitment</p>	

SERIES #5: MAINTAINING LANDSCAPES
(Fact Sheets 5.1, 5.2, 5.3, and 5.4)

ASSESSMENT

ACTION PLAN

1. Zones of mixed, undisturbed vegetation (as wide as possible) are maintained along all water bodies.

- | | | |
|--|---|---|
| <input type="checkbox"/> Not applicable | | <input type="checkbox"/> Plan to continue |
| <input type="checkbox"/> Always | ☞ | <input type="checkbox"/> Plan to improve |
| <input type="checkbox"/> Needs improvement | ☞ | |

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

2. When choosing plant materials, the lowest maintenance (including most disease- and pest-resistant) species are selected.

- | | | |
|--|---|---|
| <input type="checkbox"/> Not applicable | | <input type="checkbox"/> Plan to continue |
| <input type="checkbox"/> Always | ☞ | <input type="checkbox"/> Plan to improve |
| <input type="checkbox"/> Needs improvement | ☞ | |

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

3. Soils are amended and aerated, whenever necessary (to reduce the need for landscape chemicals).

- | | | |
|--|---|---|
| <input type="checkbox"/> Not applicable | | <input type="checkbox"/> Plan to continue |
| <input type="checkbox"/> Always | ☞ | <input type="checkbox"/> Plan to improve |
| <input type="checkbox"/> Needs improvement | ☞ | |

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

4. Soils are tested before applying fertilizer to determine the most appropriate type/formulation.

- | | | |
|--|---|---|
| <input type="checkbox"/> Not applicable | | <input type="checkbox"/> Plan to continue |
| <input type="checkbox"/> Always | ☞ | <input type="checkbox"/> Plan to improve |
| <input type="checkbox"/> Needs improvement | ☞ | |

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment



5. Fertilizers are applied *only* when, and in the amounts, required (according to soil tests and plant requirements).

- Not applicable
- Always Plan to continue
- Needs improvement Plan to improve

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

6. Lawn mowing heights are set as high as possible and clippings are left on the lawn.

- Not applicable
- Always Plan to continue
- Needs improvement Plan to improve

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

7. Irrigation systems are regularly monitored, adjusted and maintained to ensure proper watering.

- Not applicable
- Always Plan to continue
- Needs improvement Plan to improve

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

8. Chemical -free methods are used to control pests, whenever possible.

- Not applicable
- Always Plan to continue
- Needs improvement Plan to improve

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

9. When pesticides must be used, they're applied *only* where needed, when target pests are most vulnerable and when least disruptive to natural controls.

- Not applicable
- Always Plan to continue
- Needs improvement Plan to improve

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

10. When purchasing pesticides, the least toxic and persistent product is selected.

- Not applicable
- Always Plan to continue
- Needs improvement Plan to improve

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

11. Comprehensive records are kept of all pesticide applications. *(Please provide a sample)*

- Not applicable
- Always Plan to continue
- Needs improvement Plan to improve

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

12. Label directions are strictly followed (e.g., estimates are never used) when mixing, applying and disposing of pesticides.

- Not applicable
- Always Plan to continue
- Needs improvement Plan to improve

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment



13. Empty pesticide containers are triple or pressure rinsed and the rinse water is managed properly (according to label directions).
- Not applicable
 - Always ☞ Plan to continue
 - Needs improvement ☞ Plan to improve

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

14. Landscaping wastes are composted.
- Not applicable
 - Always ☞ Plan to continue
 - Needs improvement ☞ Plan to improve

Who: _____

Schedule: _____

Action(s): _____

Requires ongoing education/commitment

15. Replacing turf grass with lower maintenance plantings can greatly reduce the need for mowing, watering and landscape chemicals. Has your business considered converting any portion of its lawn to lower maintenance plantings? Would your business consider serving as a model for alternative landscaping?

Additional Comments:

COMMUNITY PARTNERS FOR CLEAN STREAMS FACT SHEETS

FACT SHEET: STORMWATER RUNOFF AND WATER QUALITY

SERIES #1: HOUSEKEEPING PRACTICES

Fact Sheet 1.1: Storing Materials and Wastes
Fact Sheet 1.2: Preventing and Cleaning Up Spills

SERIES #2: MAINTAINING ENGINEERED STORMWATER CONTROLS

Fact Sheet 2.1: Catch Basin Care
Fact Sheet 2.2: Oil/Water Separators
Fact Sheet 2.3: Maintaining Stormwater Management Systems

SERIES #3: MAINTAINING EQUIPMENT AND VEHICLES

Fact Sheet 3.1: Storing and Maintaining Equipment and Vehicles
Fact Sheet 3.2: Washing Equipment and Vehicles

SERIES #4: MAINTAINING BUILDINGS AND PAVEMENT

Fact Sheet 4.1: Outdoor Pressure Washing
Fact Sheet 4.2: Maintaining Building Facades
Fact Sheet 4.3: Maintaining Paved Areas
Fact Sheet 4.4: Using and Storing Deicing Materials
Fact Sheet 4.5: Cooling Water Systems

SERIES #5: MAINTAINING LANDSCAPES

Fact Sheet 5.1: Maintaining Healthy Lawns, Shrubs and Trees
Fact Sheet 5.2: Using Fertilizer
Fact Sheet 5.3: Integrated Pest Management
Fact Sheet 5.4: Using Pesticides

SERIES #6: SITE DESIGN AND CONSTRUCTION

Fact Sheet 6.1: Designing Landscapes for Water Quality
Fact Sheet 6.2: Designing Stormwater Management Systems
Fact Sheet 6.3: Clearing and Grading Land

SERIES #7: MANAGING WASTES

Fact Sheet 7.1: Minimizing Waste
Fact Sheet 7.2: Recycling
Fact Sheet 7.3: Waste Disposal

SERIES #8: EDUCATION

Fact Sheet 8.1: Education and Community Leadership

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