ABOUT THE LOUISIANA YARDS & NEIGHBORHOODS (LYN) PROGRAM

The focus of this program is to encourage homeowners to create and maintain landscapes in ways that minimize environmental damage. This will include looking at water quality and conservation, reducing stormwater runoff and decreasing nonpoint source pollution of surface water, enhancing desirable wildlife habitats and creating functional, attractive landscapes.

The program, which is implemented through the parish LSU AgCenter Extension agents with the support of Louisiana Master Gardener volunteers, provides education and outreach activities in the community to help residents reduce pollution, conserve water and enhance their environment by improving home and landscape management.

This integrated approach to landscaping emphasizes seven interrelated principles:

1. **Right plant right place**
2. **Watering efficiently**
3. **Maximizing mulch and recycle yard waste**
4. **Fertilizing appropriately**
5. **Managing yard pests**
6. **Protecting surface waters and wetlands**
7. **Providing for beneficial wildlife habitat**

Photo: LSU AgCenter

This LYN handbook provides helpful ideas, information and techniques to create and maintain a more environmentally friendly landscape. You will learn the basics of designing a landscape using carefully selected plants suited to Louisiana growing conditions. This handbook also contains information on cost-saving, energy-efficient landscape maintenance to help you reduce water, fertilizer and pesticide use. The information provided in this handbook will be helpful to individuals designing new landscapes or making changes to existing ones while achieving an attractive, functional and environmentally responsible landscape.

HOW TO USE THIS BOOK

This handbook is organized into two sections. The first section contains background information that will help you as you make plans to create a Louisiana-Friendly Yard. The second offers detailed description of landscape ideas and practices that explain and illustrate the seven basic LYN principles.

The information contained in these pages describes the fundamentals of creating a low environmental impact landscape. More gardening and landscaping information is available through other LSU AgCenter publications. Publications are available through your local parish LSU AgCenter Extension office or online at **www.lsuagcenter.com**.

Photo: UF/IFAS Florida Yards and Neighborhoods Handbook

LOUISIANA NEIGHBORHOODS: CONNECTING OUR YARDS TO LOUISIANA'S WATER

It is important to remember that our yards and neighborhoods are channels to our waterways. What you do in your landscape certainly needs to take this into consideration. The health of Louisiana's **estuaries**, rivers, lakes and **aquifers** depends partly on how you maintain your yard and gardens. You don't even have to live on the water to make a big difference. Rain that falls on yards, roads and parking lots can wash into waterways or leach into ground water, carrying pollutants – including fertilizer, pesticides, animal waste, soil and petroleum products. In particular, improperly applied fertilizers and pesticides from urban and suburban residential areas can play a role in polluting Louisiana's waters.

Louisiana is rich in natural habitats that function well in preserving the quality of the environment. Unfortunately, when land is developed for residential use, land is covered by

estuary: The wide lower course of a river where it flows into the sea. Estuaries experience tidal flows and their water is a changing mixture of fresh and salt.

aquifer: An underground layer of permeable rock, sediment (usually sand or gravel), or soil that yields water. The pore spaces in aquifers are filled with water and are interconnected, so that water flows through them.

impervious surfaces, such as asphalt and concrete, and neighborhoods with landscapes that make use of few native plants and bear little resemblance to native Louisiana habitats. Expansive planting of high-maintenance lawns have formed the dominant landscape in most of our communities for years, but that may be changing. You can be a part of the movement in Louisiana to have a more environmentally friendly landscape.

Look around your neighborhood or nearby parks to see if any natural landscapes remain. Can your own landscape be redesigned to replace a piece of what has been lost?

The ideal Louisiana-Friendly Yard — the smart way to garden — should reflect the beauty of natural habitats and ecosystems in our state. To be truly effective, these landscapes must be created and sustained by landscape practices that have a low impact on the environment. What are some of these practices?

- Cooperate with pre-existing natural conditions instead of altering them or changing them to suit the desires of the gardener or needs of plants not suited for those conditions.
- Conserve water and energy – both indoors and out.
- Use more native species in your landscape. Plant native and non-native trees, shrubs, vines and ground covers that require minimal water, fertilizers and pesticides under the right growing conditions.
- Choose plants that are appropriate and attractive but also provide environmental benefits.
- Tolerate some pest damage in the landscape and focus on gardening techniques that reduce pest problems. Use pesticides only when necessary and according to label directions. Always choose the least toxic products that will do the job.

Louisiana-Friendly Yard — *the smart way to garden*

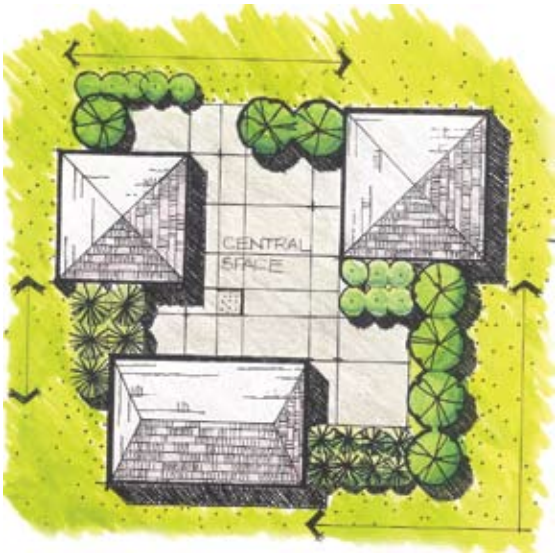
CREATING YOUR LOUISIANA-FRIENDLY YARD

A Louisiana-Friendly Yard doesn't merely offer a good-looking landscape, it also becomes an asset to the local environment, protecting natural resources and preserving our state's unique beauty. An important part in creating a Louisiana-Friendly Yard is recognizing that the home landscape is connected to and a part of a larger natural system.

Designing a landscape more in harmony with the environment requires commitment and careful planning and largely depends on what you and your family require from the landscape. You should consider:

1. Your family's needs and desires.
2. The conditions of your site.
3. Maintaining a healthy environment.

Understanding a few basic concepts will help you make environmentally appropriate decisions when planning your landscape and avoid potential problems.



Drawing: UF/IFAS/ FYN Handbook

PROPER PLANNING IS CRITICAL

A key to creating a successful landscape design is relying on a commonsense planning process. Using a step-by-step process, where the next step builds on the one before, you can develop your own plan that will create an attractive, functional and environmentally sensitive landscape.

First, think of the style you want your landscape to have. Look at other gardens and figure out what style you are most comfortable with. Gardening books, magazines and books on landscaping present photographs that can inspire you and help you make a decision. The style you choose is generally a matter of taste, but should strongly be influenced by the architecture of the house. The chosen style will guide the more aesthetic aspects of the landscape design. Styles generally fall in one of several categories, such as formal, informal, naturalistic, ethnic or ecological. Next, follow the steps outlined on the next page. For a complete list, refer to Right Plant, Right Place beginning on page 19.

1. Decide what your landscape needs to provide.

Most people focus primarily on the appearance of their landscape and how it beautifies the home and grounds. Early in the planning process, it is also important to look at what the landscape needs to provide and how it will function. Examples of needs include a play area for kids, shade, privacy, colorful flowers, growing vegetables and outdoor living. The Louisiana Yards & Neighborhoods program adds one more need — protecting the environment, which includes creating wildlife habitat and lowering maintenance — particularly, reducing water, fertilizer and pesticide use and preventing erosion.

Photo: John Wozniak, LSU AgCenter

2. Study your site. The site is what is enclosed by your property lines. Walk your property and become familiar with the grounds. Notice the compass directions. Which areas are shady or sunny, wet or dry? Soil tests will help you learn about soil characteristics on your site. Note existing features such as trees, buildings, beds, fences, walks and the like. What do you want to change, get rid of or keep? Draw up a simple sketch of the property showing the relevant features.

Drawing: UF/IFAS/ FYN Handbook

3. Draw a land-use plan. Draw up a simple sketch of the property showing the relevant features (house, existing trees, beds, patio, etc.). Better yet, draw up a scale drawing. A scale drawing is much more effective when you actually start to do the design. If you have the survey completed for your mortgage, photocopy it — it is really helpful at this stage. You will be playing with various ideas, and need copies to try those ideas out. Never draw on the original.

In this step you decide how much space different activities and areas will need and where in the landscape they will be located. At this time you will see how many things in your list you will actually be able to fit into the landscape. On your scale drawing copy, draw circles or ovals to indicate where and how large areas will be. For instance, a circle would represent where and how large the vegetable garden would be, where the play area would be, where the patio would be and so forth. Try several arrangements until you find the best one.

4. Shape the spaces. Now, decide exactly what shape the areas will have. If you indicated flower beds with an oval to show where and how big they will be, at this point you decide how they will actually be shaped. Although you don't actually select the plants at this stage, you should decide on the characteristics that the plants should have (size, flower color, evergreen, etc). This is a creative stage. It will be guided by the previous steps as well as the style you have decided for the garden.

Drawing: UF/IFAS/ FYN Handbook

5. Select the materials. At this point, you select the components that will be chosen to create the landscape. If, for instance, in step 1 you listed privacy, in step 2 you decided what view needed to be blocked; in step 3 you chose the location of the privacy screen; in step 4 you determined the size of the screen (how tall, how wide), and also decided the composition of the screen. You may choose to plant a hedge or build a lattice fence or a brick wall. Go through the rough plan selecting what plants will be used, surfacing materials, etc. Cost is a factor that enters into which materials you select. When choosing plants, consider the limitations of your site, maintenance requirements and wildlife value.

Photo: Johnny Morgan, LSU AgCenter

Site Analysis

To choose the right plants for your landscape it is important to determine your site characteristics. Remember, conditions may differ at various points in your yard. Some characteristics to consider include:

Soil

- ☐ texture
- ☐ pH
- ☐ fertility

Drainage

- ☐ well-drained
- ☐ poorly drained

Light

- ☐ full sun (8 hours or more of direct sun)
- ☐ part sun (around 6 hours of direct sun or a western exposure)
- ☐ part shade (around 4 hours of direct sun or an eastern exposure)
- ☐ shade (around two hours of direct morning sun or dappled light through the day)
- ☐ full shade (no direct sun)

Temperature

- ☐ exposure to freezing temperatures
- ☐ exposure to extreme heat

Structural Limitations

- ☐ power lines
- ☐ underground utilities
- ☐ septic tank,
- ☐ roof overhangs
- ☐ paved surfaces

Other

- ☐ exposure to strong winds
- ☐ exposure to wet/dry seasonal extremes

SOIL – THE FOUNDATION OF HEALTHY PLANTS

A wide variety of soil types are in Louisiana. Talk to your parish county agent about what the soil is like where you live. A soil test, available through your parish LSU AgCenter Extension office, will tell you a lot about the type of soil(s) your site has.

Improving the Soil

It is best to use plants that are compatible with the soil you have on your site. To grow some types of plants, such as bedding plants or vegetables, you will need to add **organic matter**, such as compost, to the bed each time you prepare it for planting. Organic matter retains moisture, improves drainage, provides nutrients and attracts beneficial organisms like earthworms. Other sources of organic matter include aged or composted manure, leaf mold (partially decayed leaves), peat moss, composted finely ground pine bark and soil conditioner.

organic matter consists of plant and animal material that is in the process of decomposing.

Add organic matter to a prepare a bed for planting by spreading a layer 2 to 4 inches thick over the bed, and then mixing it into the upper 8 inches using a tiller, shovel or digging fork.

In beds with permanent plantings, such as shrubs, apply organic matter as mulch 2 to 3 inches deep around existing shrubs in spring. Check the mulch in late summer/fall, and replenish as necessary to keep the recommended depth (see Maximize Mulch and Recycle Yard Waste starting on page 39 for more information on mulching). As mulch decays, it will be gradually incorporated into the soil of the bed by the action of earthworms.

Photo: Mark Claesgens, LSU AgCenter

Soil pH

The pH of the soil indicates how acid or alkaline the soil in your garden is. The pH of the soil has a strong influence on how readily available mineral nutrients in the soil are to plants.

You can determine the pH of your soil by having it tested through your local LSU AgCenter Extension office. Home soil test kits are available as well, but you must use them carefully to get accurate results.

Knowing your soil's pH also will help you make better use of plant reference guides, which often utilize this information along with other requirements for plants listed. Most plants are adaptable and actually will tolerate a wide range of pH levels. They will do best, however, when planted into their preferred soil pH. The soil pH can be modified, but this is really only a temporary solution, so it is best to choose plants that are adapted to the native pH of your soil.

Compacted Soil

Many new homes are built on a raised platform of compacted fill dirt brought in by construction companies. Such compacted soils don't provide a healthy environment for plant roots and may limit healthy growth. To deal with this situation, loosen the soil to a depth of at least 8 inches and incorporate generous amounts of organic matter to landscape beds before installing the plants.

DECIDING WHICH PLANTS TO KEEP

If you decide that you want to change your landscape, it is important not to simply remove everything that is there. In established landscapes, retaining trees, shrubs, perennials and other plants will save money – and it also preserves established wildlife habitats. Larger, older plants also create a feeling of maturity that newly planted landscapes lack. The trick is knowing which plants to keep. Following these simple guidelines will help you make decisions in determining what plants to retain and which ones to remove.

- Keep healthy plants that show good form and are growing in appropriate locations. Consider pruning healthy, overgrown shrubs or trees if the only reason they are on your remove-list is due to appearance. Pruning is less costly than replacement, especially when dealing with mature plants.

- Retain trees with long life spans. Some examples are live oaks (*Quercus virginiana*), Southern magnolia (*Magnolia grandiflora*) and baldcypress (*Taxodium distichum*). Mature short-lived trees are less desirable, including water oak (*Quercus nigra*), silver maple (*Acer saccharinum*) and flowering pear (*Prunus calleryana*).

- When developing wooded lots, save clusters of trees and the plants growing beneath them rather than individual trees. Trees growing close together in forests often grow tall and narrow. When the site is cleared, an isolated tree becomes vulnerable to wind damage and could snap during high winds. For this reason, it is best to leave trees in clusters. The cluster should include the trees along with any ground covers or native shrubs growing beneath them. Such a grouping is more resistant to high winds (and generally looks more attractive).

Photo: Mark Claesgens, LSU AgCenter

To determine which plants to remove, consider this checklist:

- ✔ Unhealthy and invasive plants are not worth saving. Read more about invasive plants on pages 65-66.
- ✔ Foundation plants located too close to walls block air currents and prevent access for home maintenance.
- ✔ Discard tightly spaced plants. Over time, tight spacing fosters moisture problems, which can lead to **disease** problems and stress the plants.
- ✔ Plants under eaves often prove problematic; they may not receive adequate rainfall or may be damaged by the force of rainwater dripping from a gutter. Consider carefully before keeping these plants.

Once you know which plants you intend to save, ensure that roots are not damaged through construction activities or soil compaction, which slows growth. Avoid disturbing the root zone of these plants in any way. This includes driving over them with heavy vehicles, digging into the root zone area or mounding soil against the base of plants. To protect trees, construct barricades at the edge of the canopy drip line to prevent construction equipment from driving over roots. Even though this does not protect the entire root system, it will improve your trees' odds for survival.

Trees particularly sensitive to soil compaction include beech *(Fagus spp.)*, dogwood *(Cornus spp.)*, sassafras *(Sassafras spp.)*, tupelo *(Nyssa spp.)*, pine *(Pinus spp.)*, white oak *(Quercus alba)*, black oak *(Quercus velutina)* and most nut trees, such as black walnut *(Juglans nigra)*, hickory *(Carya spp.)* and pecan *(Carya illinoinensis)*.

Disease: an interaction between an organism and its environment that results in an abnormal condition; can be caused by living organisms (fungus, bacteria, nematode, virus) or nonliving factors (cold, chemical injury, nutrient deficiencies, soil pH).

LANDSCAPE DESIGN

Landscape design combines art and science to create functional, aesthetically pleasing and ecologically sound surroundings that complement a home or other structure. Many elements of art — including color, form, line and texture — interact within a landscape to produce the design principles of unity, balance, simplicity and focus.

In a landscape, plants fulfill dual roles: they form eye-pleasing scenes and are a key to reducing energy use and protecting our natural resources. For example, landscape designers often recommend grouping plants into masses to unify the design of plant beds. Groups of three, five or seven plants are visually pleasing to the eye — but this design technique provides environmental benefits as well. Trees planted in groups provide more atmospheric cooling than the same number of evenly spaced, isolated trees. And, as already noted, trees planted with accompanying shrubs and groundcovers beneath them form effective windbreaks.

For an overview of the artistic elements of landscape design, search for appropriate articles on the LSU AgCenter Web site **(http://www.lsuagcenter.com)**, or consult a professional landscape architect.

Louisiana Yard Tip:

Choose two or three colors that complement each other, and repeat this color combination throughout the landscape. This creates a scene that's visually attractive, and the repetition of color draws your eye through the planting beds so that you take in the entire scene and not just one small piece of it.

Photo: John Wozniak, LSU AgCenter

PROPER TREE PLANTING

Once you determine which plants you want to add to your Louisiana-Friendly Yard, it is time to break ground and start planting. Begin your landscape renewal by putting hardscape, such as walkways, irrigation systems or patios into place first; then plant trees. Because trees are a more permanent addition to the landscape, site selection and proper planting techniques are essential. (This section is adapted from Dr. Ed Gilman's Web site, **http://hort.ifas.ufl.edu/woody/planting** reprinted with permission.)

1. **Look up.** If a nearby wire, security light or building could interfere with the tree as it grows, find a new planting site.

2. **Dig a shallow hole that is as wide as possible.** Shallow is better than deep! Many people plant trees too deep. Dig a hole that is 1½ to 3 times the width of the root ball. Use even wider holes for compacted soil and wet site. Make sure the depth of the hole is slightly LESS than the height of the root ball, especially in compacted or wet soil. If you inadvertently dig the hole too deep, add soil to the bottom of the hole.

Break up compacted soil around a newly planted tree to give emerging roots room to expand into loose soil. This will hasten root growth and encourage **establishment**.

Drip line: the circle that forms at the ends of branches of a tree where water drips off the leaves onto the ground.

Establishment: acclimating a new plant to the environmental conditions of the planting site.

A tree resembles a wine glass placed on a dinner plate. Consider the base of the wine glass as the part of the trunk where major roots flare outward. The dinner plate represents the rest of the root system, which extends far beyond the **drip line** — up to five times the canopy's diameter, depending on the species. Vertically speaking, most tree roots are located in the top 2 inches of the soil, where oxygen is available through exchange between the soil surface and atmosphere.

Drawing: UF/IFAS FYN Handbook

3. **Find the point where the topmost root emerges from the trunk.** This point is called trunk flare, root flare or root crown and should be within 2 inches of the soil surface. If the topmost root is buried within the root ball, remove enough soil from the top of the root ball so the point where the topmost root emerges from the trunk will be within 2 inches of the soil.

Loosen circling roots, especially in the top half of the root ball. Selectively remove small roots that are kinked or circling. If many roots circle the bottom or sides of the root ball, slice the root ball about 1-inch deep in four places (like at the points of a compass) from top to bottom before planting. This reduces the likelihood of roots causing problems later. If you cut large roots, the tree might go into shock and die.

Photo: UF/IFAS FYN Handbook

Rootbound (or "pot-bound") plant — thick roots encircle the rootball.

The way to avoid having to slice roots is to buy plants that are not root bound. For plants that are not too large to handle, slip them out of the pots at the nursery and inspect the roots. If plants are too heavy to lift, tilt the pot and inspect the roots as much as possible through drainage holes. Sometimes you will be able to see circling roots through the drainage holes.

4. **Slide tree carefully into the planting hole.** To avoid damaging the tree when placing it in the hole, lift it with straps or rope around the root ball, not by the trunk. Use special strapping mechanisms constructed for carefully lifting trees out of large containers.

5. **Position the trunk flare** (where the topmost root emerges from the trunk) slightly above the surface of the landscape soil. Most horticulturists agree it is better to plant the tree a little high than to plant it too deep. If the tree is a little too deep, tip it to one side and slide some soil under it; then tip it back the other way and slide some more soil under the root ball. Once the tree is at the appropriate depth, place a small amount of soil around the root ball to stabilize it. Soil amendments are usually of no benefit. The soil removed from the hole usually makes the best backfill, unless it is substandard or contaminated.

6. **Straighten the tree in the hole**. Before you begin filling the hole with soil, have someone view the tree from two directions perpendicular to each other to confirm that it is straight. Fill in with some more backfill soil to secure the tree in the upright position. Once you add large amounts of soil, it is difficult to reposition the tree.

7. **At planting time, remove all synthetic materials** from around the trunk and root ball. This includes string, rope, synthetic burlap, strapping, plastic and other materials that won't decompose in the soil.

8. **Fill the planting hole with backfill soil**. As you add the soil, slice a shovel down into it 20 to 30 times, all around the tree. Break up clay soil clumps as much as possible. Do NOT step firmly on the backfill soil. This could compact it, restricting root growth, especially in the clay soil. When the planting hole is filled with soil, the root ball should rest 1 inch (small trees) to 3 inches (larger trees) above the backfill soil.

9. **Add 10 to 20 gallons of water to the root ball**. Fill any air pockets with soil.

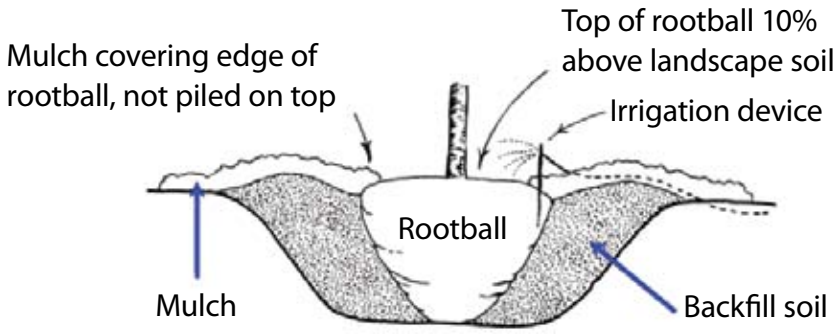
10. **Cover the backfill soil with mulch.** Apply mulch to a minimum 8-foot diameter circle around the tree, if possible. Do not construct a **berm** from soil, since this soil could end up over the root ball several months later. Water the mulch well after spreading.

11. **Stake the tree, if necessary.** Staking holds the root ball firmly in the soil. If the tree moves in the wind, the root ball may shift, and emerging roots could break or the plant could fall over. Young trees might require staking until enough trunk strength develops. Remove staking materials after the tree becomes established. If not removed, ties and stakes can **girdle** a tree, which can kill it.

Berm: a raised earthen area.

Girdle: to constrict or destroy the bark in a ring around the trunk or branch of a plant, cutting off flow of nutrients and water through the bark; ultimately the plant dies.

12. **Water trees frequently so roots fully establish.** Light, frequent irrigation fosters the quickest establishment for trees. Following the initial few months of frequent irrigation, water weekly until plants are fully established. At each watering, apply about 1-2 gallons of water per inch of trunk diameter (i.e., 2-4 gallons for a 2-inch tree). Never water if the root ball is saturated. In Louisiana, trees typically require about three months per inch of trunk diameter to become established, but could take longer depending on climate, watering schedule and species. Fertilizing during the establishment period doesn't improve survival rates.



Watering Schedule

To establish a 1-gallon size plant with average water requirements:

Week 1 . . . . . water daily
Weeks 2-3 . . . . . water every two days
Weeks 4-6 . . . . . water twice per week
Weeks 7-12 . . . . . water once per week

HIRE REPUTABLE PROFESSIONALS

This handbook forms a solid resource for do-it-yourselfers, but what if you lack the time, desire or ability to tackle your own landscape work? Landscaping companies offer varying types of maintenance services. In Louisiana, the green industry is regulated, and professionals must carry a license from the Louisiana Department of Agriculture and Forestry. Professionals who do landscape maintenance must have a Horticulture License, those installing landscapes mush have a Landscape Contractor License and those drawing up Landscape Designs must have a Landscape Architect License.

Types of Maintenance Services

Fertilizer and Pest Control Companies. Some homeowners look for a company to provide all fertilization and pesticide spraying services to their lawn and landscape. These services are provided by pest control companies, who do structural and outdoor pest control. Any business that applies pesticides to lawns and ornamentals in Louisiana must be licensed by the Louisiana Department of Agriculture and Forestry (LDAF). Pest control companies generally have one or more Certified Pest Control Operators, plus technicians who operate under their license. These companies will typically be on your property every other month, but may not always need to apply fertilizer or pesticides. They will have you sign a contract stating exactly what they will provide. In addition to this, they should do the following:

Follow fertilization guidelines as developed by the LSU AgCenter's **Best Management Practices** program. These guidelines cover fertilizer rates, sources and application timings. Fertilizers containing **insecticide** or herbicide (**weed** killer) should be avoided.

Best Management Practices: methods that have been determined to be the most effective, practical means of preventing or reducing pollution.

Insecticide: a pesticide that kills insects and other arthropods.

Weed: a plant out of place; weeds are troublesome because they compete with desirable plants for water, minerals and light; sometimes weeds can harbor insect pests or diseases.

Follow an **Integrated Pest Management** (IPM) program where pest scouting and monitoring is common and **pesticides** are applied when other options will not control the pest. See descriptions of these options beginning on page 52. If pesticides are used, they should be applied at labeled rates, and a sign should be posted to alert you that they have applied a pesticide. When pesticides are necessary, least toxic products should be chosen.

Landscape Maintenance Services. These companies perform a variety of services, from mowing and edging to fertilizer applications, planting, renovating, etc. They must have a LDAF Horticulture License. **If a landscape maintenance service company does not hold a Commercial Pesticide Applicators license, they may not apply any pesticide, even a product you purchased, to your lawn.** They should follow the fertilization guidelines as described above. They should leave grass clippings on the lawn and properly dispose of any other yard waste, whether it is used on-site as mulch or compost or is removed from the yard.

Integrated Pest Management: a sustainable approach to managing pests by combining biological, cultural, physical and chemical tools in a way that minimizes economic, health and environmental risks.

Pesticide: a chemical or other substance used to prevent, destroy or repel pests.