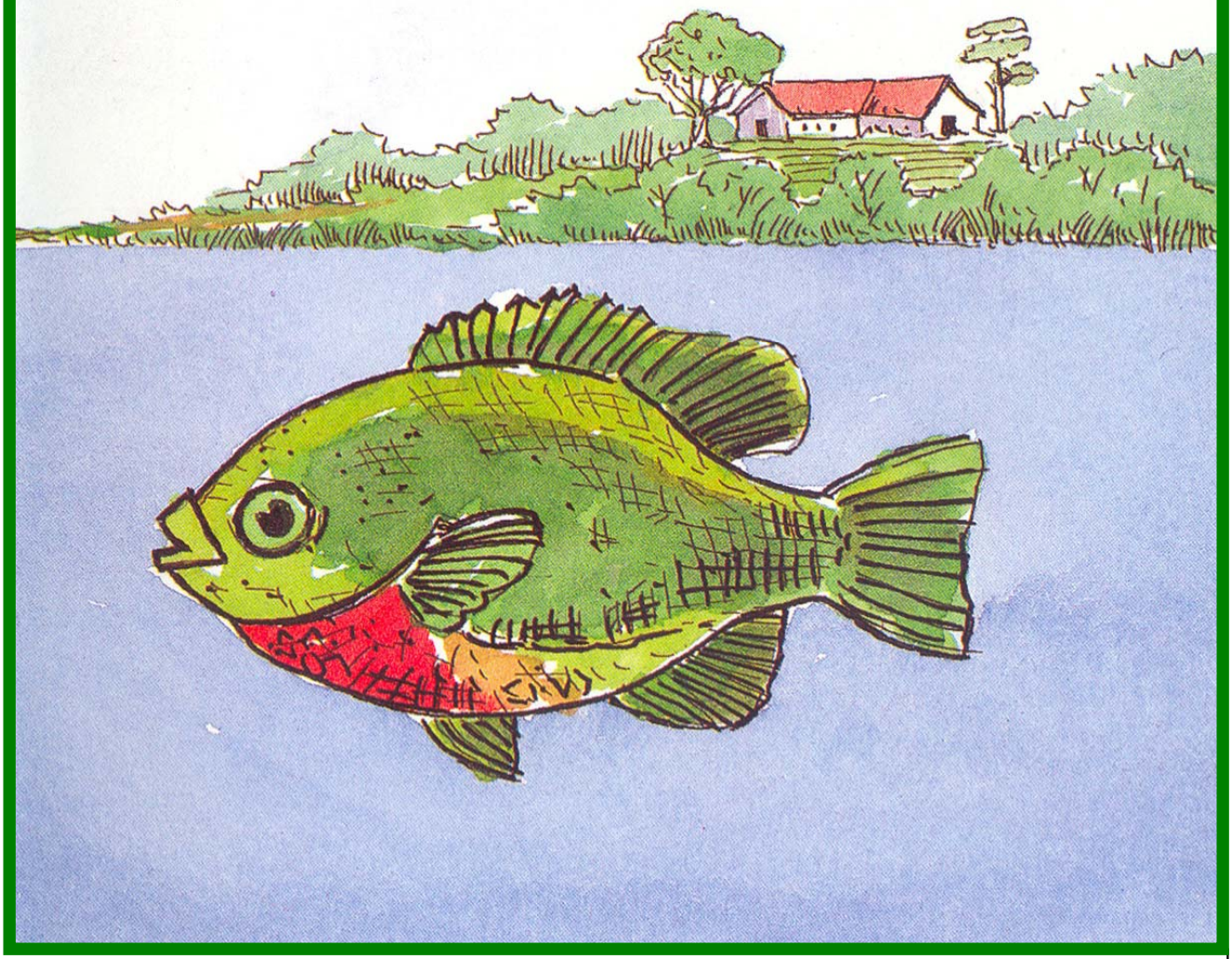
Greener By The Yard



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Emily Kling	Alabama Cooperative Extension System
Ed Tunnell	Alabama Cooperative Extension System
Tina Lynn	Weeks Bay Watershed Project
Maureen Nation	Weeks Bay Reserve
Ernest Ehlers	Baldwin County Master Gardener
Ron Heveren	Baldwin County Master Gardener
Jan Gwin	Weeks Bay National Reserve Volunteer
John Griggs, III	Baldwin County Master Gardener.

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IM Lavender Agency
203-A Oak Street - P.O. Box 884
Bay Minette, Alabama 36507

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Week Bay Reserve, Alabama Department of Conservation and
Natural Resources, State Lands Division
Michael Shelton, Watershed Coordinator

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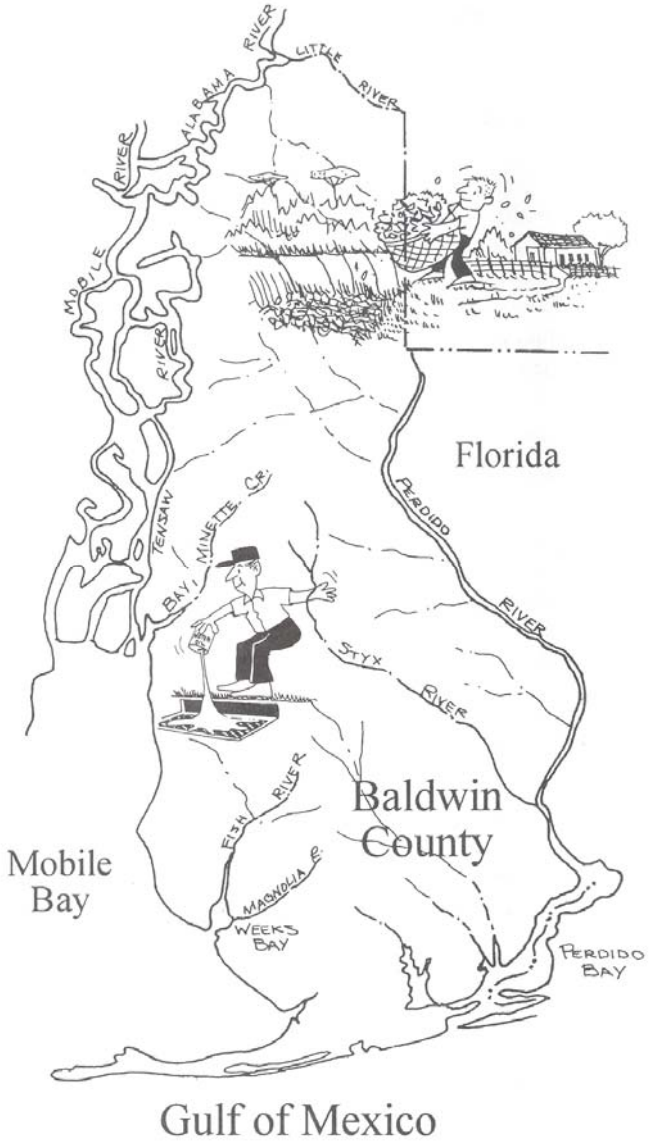
GREENER BY THE YARD

A clean environment is important to us.

We all value clean water and the aesthetic, health, recreational and economic benefits it provides. Unfortunately, it is these very uses that affect water quality. There are a number of simple practices each of us can adopt to improve the quality of our ground water, rivers, bays, and estuaries. Individually, the contribution of these practices may seem small, yet, if enough people take these steps, the effect can be significant.



Water pollution originates from either point sources or nonpoint sources.

Point source pollution comes from specific locations, i.e., manufacturing or processing operations which discharge waste materials directly into surface waters. These discharges are now regulated and monitored by state and federal environmental agencies Yet, in spite of these restrictions, pollution of our waters continues.

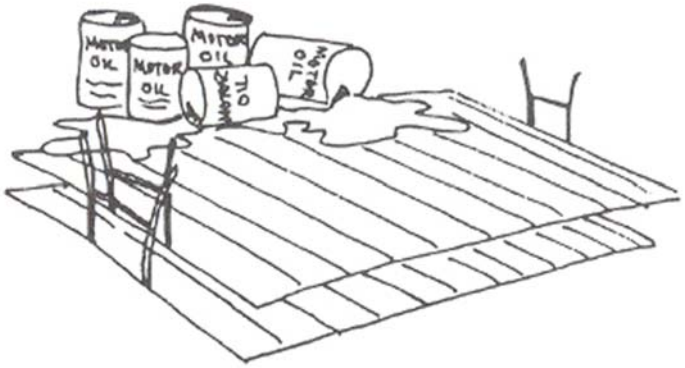
Most of the pollution presently entering our surface and ground water now originates from nonpoint sources, i.e., residential, urban, and farm areas. Nonpoint source pollution is caused by rainfall moving over the ground, carrying natural or man-made pollutants into the surface water system. Nonpoint source pollutants may come from a variety of activities over a broad geographic area.

This handbook briefly describes simple practices that can be adopted to protect our water resources. These practices are aimed at reducing the amount of storm water runoff from your property and improving the quality of this runoff. Additional information on each of these practices can be found in the Alabama Cooperative Extension System publications listed at the end of this handbook.

STORM DRAINS

We are most familiar with the storm drains...

... that are located in urban areas and along the edges of paved streets. However, ditches and swales serve as storm drains in rural areas. Storm drain systems rapidly remove excess water from roadways, parking lots, and other paved or unpaved areas. Storm water that enters these drains does not undergo treatment at a waste-4 water treatment facility, but instead is discharged directly into a local body of water, such as a stream, estuary, lake, or bay.



Any pollutants that enter a storm drain...

... are directly discharged into our waterways. One of the most harmful substances commonly discharging through storm drains is the used motor oil that washes off parking lots and roads. A widespread source of water contamination also comes from the waste oil deliberately poured down a drain or onto the ground surface. The five quarts of motor oil from your car is capable of making an oil slick the size of two football fields or polluting a million gallons of drinking water. For proper disposal, motor oil should be placed in a sealed metal or plastic container, and then taken to a recycling center or auto repair shop.

Another common pollutant...

... that enters local water bodies through storm drains is pesticides. Pesticides are a chemical group, which herbicides (which kill plants), insecticide kill insects), and fungicides (which kill fungi). The correct application of these chemicals will prevent them from leaving your property. Follow label instructions carefully and dispose of these products as recommended (or offer excess amounts to friends and neighbors, who may need them). You will find more on disposal and pesticide alternatives in the "Lawns and Lawn Care" chapter of this book.

Seemingly harmless, materials...

... such as lawn fertilizers, leaves, and grass clippings may also cause problems if they enter storm drains or are carried by ditches into waterways. Fertilizer can cause accelerated algae and aquatic weed growth. In decomposing, these weeds, leaves, and other organic matter may result in oxygen depletion, and may cause a release of ammonia in waterways. This can kill fish and other aquatic organisms. Even water carrying large amounts of clay and slit can have damaging effects. This sediment is capable of clouding the water, inhibiting plant growth, covering fish spawning areas, and gradually filling in water bodies.

The general rule for pollution prevention...

...stop man-made chemicals or eroded soil from entering storm drains or other drainage ways. Proper storage, use, and disposal of fertilizer, prevention of soil erosion, and proper disposal of pet wastes from driveways and walkways will minimize the amount of pollution in runoff.

In addition to minimizing pollutants,...

...take steps to reduce the amount of water runoff that enters storm drains or other drainage ways. Decrease surface runoff by following these suggestions:

- plant trees, shrubs, and other ground cover
- maintain a healthy lawn
- direct downspouts away from paved surfaces to vegetated areas
- use porous materials for walkways and patios
- construct terraces on sloping ground
- divert storm runoff away from erosion-prone areas
- wash your car on the lawn rather than the driveway
- use home irrigation practices that reduce direct runoff from paved areas.

HAZARDOUS WASTE DISPOSAL

The average household produces about 5.5 pounds of hazardous waste annually. Thousands of common household products contain toxic substances: bleach, paints, paint removers, motor oil, drain cleaners, ammonia, and pesticides, just to name a few. This material, if not stored and disposed of properly, can pollute our water.

One approach to the elimination of hazardous waste is to decrease the amount that you have in your home. Don't buy excess amounts of household products and, when possible, replace the toxic items with safe, nontoxic alternatives.

Considering the vast number of materials that could be hazardous, no single method of disposal can be recommended. However, the Alabama Cooperative Extension System, in Circular ANR-790, has compiled a fairly detailed listing of household products and their method of disposal. Some recommendations include:

- **Automotive-Related Materials**

Take to a local recycling center or an auto service station

- **Pesticides**

Follow label instructions for disposal. Amounts less than one quart should be wrapped in several layers of paper, tied securely and added to home refuse. For larger amounts, pour the pesticide into an absorbent material (such as sawdust, kitty litter, or clay soil), shovel it into a plastic bag, and place it in a trash container.

Never rinse or flush waste pesticide down a drain or toilet.

- **Aerosol Cans**

Never discard when under pressure. Spray the contents until pressure is released, and then discard with household refuse.

- **Paint**

Small amounts of latex paint should be evaporated until dry, and then discarded with household wastes. Oil paints should be taken to a recycling center.

- **Swimming Pool Chemicals**

Swimming pools require large amounts of chlorine and other chemicals. When drainage is necessary, pour the water slowly onto a large expanse of lawn.

Never drain directly into a waterway or street.

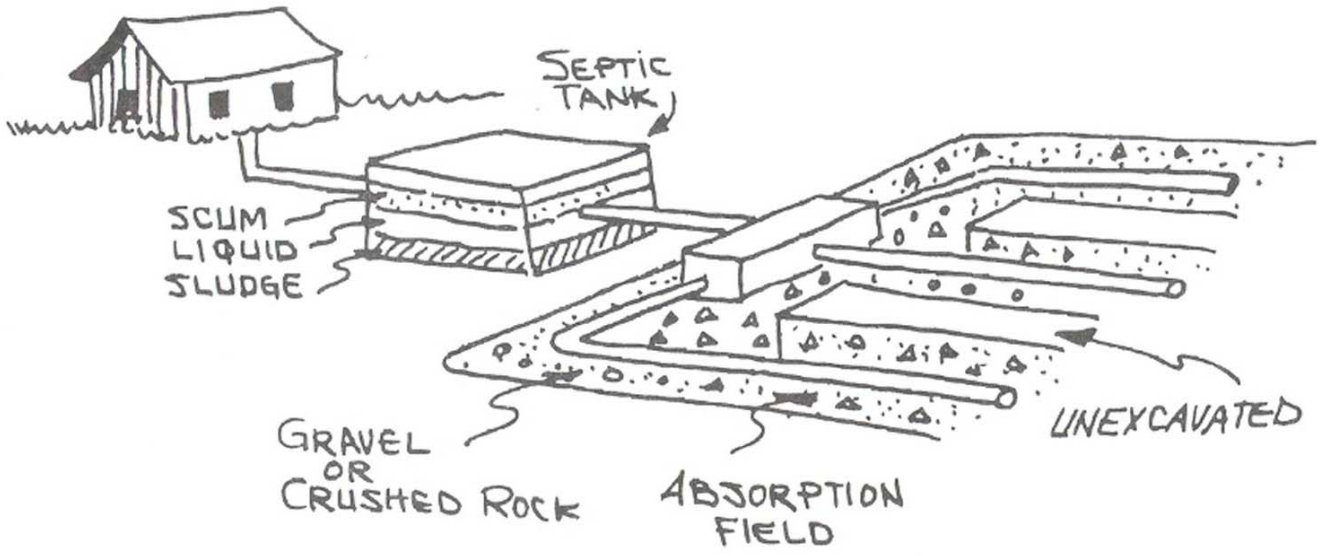
- **Fertilizers**

To dispose of excess fertilizer if not saved and applied to lawn, wrap in newspaper and then in plastic before adding to home refuse.

THE SEPTIC SYSTEM

Well over 17,000 households in Baldwin County rely on septic systems to treat and dispose of household wastewater. The conventional septic system consists of two key components - a septic tank and a drain field. In these systems waste water from the home flows through drain pipes by gravity and goes directly into a septic tank, where most solids settle and are biologically converted to liquids and gases. When everything is working well, the liquid leaving the tank and flowing to the drain field will contain very few solid materials

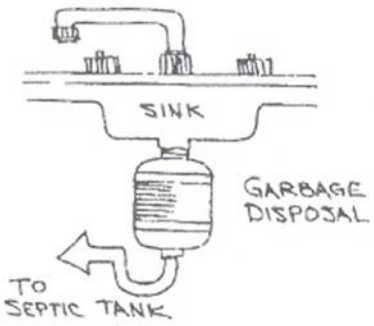
The liquid then flows from the tank to the soil absorption field (drain field) where it is allowed to soak into the ground. The drain field is a network of buried perforated pipes that permit the effluent from the septic tank to be absorbed by the surrounding soil. The size of the drain field varies, depending upon the soil capacity for absorption. Organisms in the soil remove most of the disease causing microorganisms and some suspended solids and nutrients. The treatment of the wastewater in the soil takes time and soils should be neither too sandy nor clayey. Sandy soils will allow water to pass through too fast, while clayey soils may accept only small amounts of wastewater. Therefore, siting your septic tank is a critical decision and is carefully regulated by the Baldwin County Health Department.



Septic tank problems and solutions

Poor design, construction, or maintenance will cause your septic system to fail. Maintenance is critical in making sure your septic system works well over time. Recommended maintenance includes the following:

- Pump out your tank regularly (every three to five years depending upon usage) to remove accumulating sludge. Keep a record of your pumping schedule.



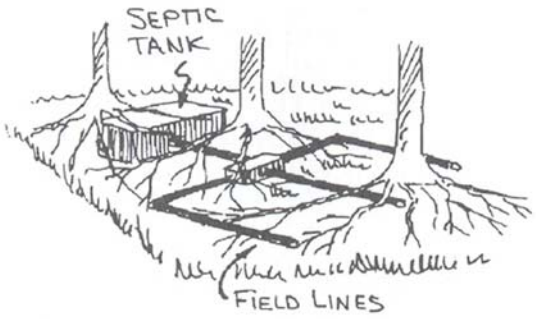
- Do not use a garbage disposal; it adds grease and solids to the system, which shortens its life and requires annual pump out.

- Maintain the ecology of your septic tank to keep helpful bacteria healthy and thriving. Avoid concentrated bleaches, drain cleaners, paint thinners, and medicines from entering the system. Use biodegradable soaps and detergents.

- Distribute laundry washing throughout the week to balance water use and prevent overloading the system.

- Keep solids such as cigarette butts, tampons and paper towels out of septic tank.

- Protect the drain field from heavy vehicles which may result in soil compaction or crushed drain pipe.

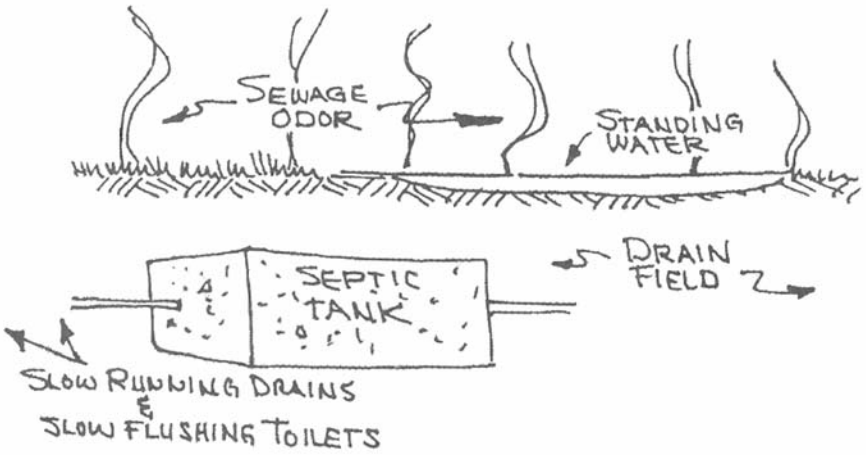


- Protect the system from expansive plant roots. Drain fields should have good surface drainage and should be covered with grasses, not deeper-rooted shrubs and trees.

• • • WARNING • • •

KNOW THESE SIGNS OF SEPTIC TANK FAILURE:

- Slow running drains/slow flushing toilets
- Sewage odor near septic tank or drain field
- Sewage on the ground over drain field
- Standing water or sewage



LAWNS AND LAWN CARE

As the population of Baldwin County increases, more and more of the land is converted to homes, lawns and driveways. Most of the rain that falls on our property eventually finds its way into the Bay. What we do on our land directly affects the quality of our waters.

Getting Started...

Appropriate Plants for Baldwin County Landscapes

All plants have different needs. Matching your plants to site specific soils, thermal patterns, shade levels, and nutrient requirements reduces the amount of irrigation, fertilizer, and pesticides that will be necessary to keep it healthy. Using native plants also increases your plants' resistance to disease. If a lawn area is to be part of your landscape, the Alabama Cooperative Extension System recommends the four warm climate turf grasses that do well in South Alabama. The right one for you will depend upon the conditions present on your property.

Bermudagrass

Bermudagrass and Bermudagrass hybrids are adapted to many soil conditions and make a good turf if fertilized and mowed properly. This grass thrives in hot weather, but performs poorly in shade. It spreads rapidly with above- and below-ground runners, but is difficult to control around garden plots, walkways, etc. It requires frequent mowing and fertilization, and is easily established.

Centipede

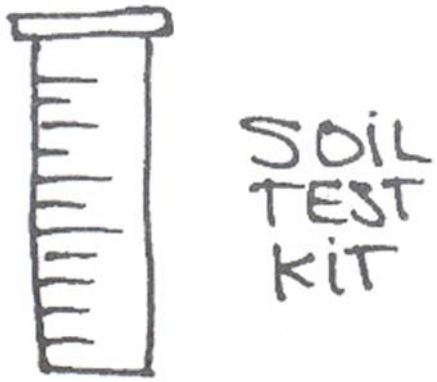
Centipede is the ideal grass for the homeowner who wants an attractive lawn with minimum care. Compared to other warm season grasses, centipede grass requires less fertilization and mowing. It is somewhat shade tolerant and resistant to most insects and diseases. However, it takes longer to become established than Bermudagrass and St. Augustine.

Zoysiagrass

Zoysiagrass produces an excellent turf when properly established and maintained. It grows well in full sun and partial shade. It is slow to become established (and thus more costly), less drought tolerant than Berrnudagrass, hard to mow (because of leaf stiffness), and is only recommended if you are willing to carry out a high level of maintenance.

St. Augustine

St. Augustine is the most shade-tolerant warm season grass known. Unfortunately it is susceptible to winter cold injury, the ravages of the chinch bug, as well as numerous diseases. Some use of pesticides is necessary to maintain this grass.

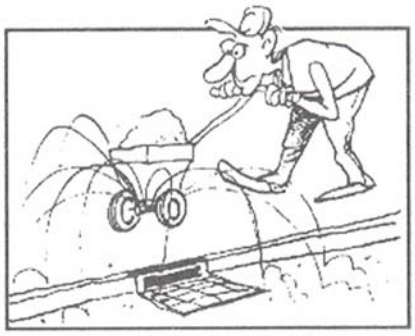


One of the main factors in developing a successful lawn is soil preparation. Each type of grass has its own nutritional and pH requirements. The Alabama Soil Testing Laboratory at Auburn University will perform a soil analysis to reveal the nutritional requirements and pH of your soil. Test kits are available at most lawn and garden stores for a modest fee.

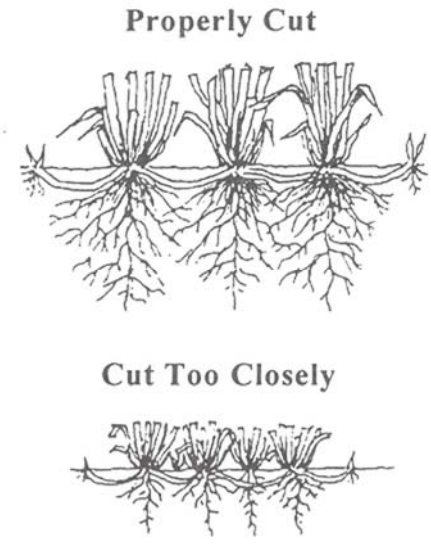
Other Turf Considerations

A healthy turf requiring minimal fertilizers and pesticides will reduce the likelihood of contaminated surface runoff. Other ways to improve the quality and reduce the amount of runoff include:

- Minimize the lawn growing area
- Strictly follow recommendations stated on the package of fertilizer or pesticide
- Apply fertilizers only when needed. The wrong fertilizer at the wrong time can cause disease, weeds or excessive top growth



- Use slow release fertilizer
- Remove fertilizers from walks and driveways in order to prevent them from entering storm drains
- Do not over water the lawn. Lawns need watering only
- When you can detect a bluish cast, or when you can see your footprints after walking across them. Water established lawns only during very dry periods and moisten soil to a depth of 4 to 6 inches.
- Do not remove cuttings after mowing



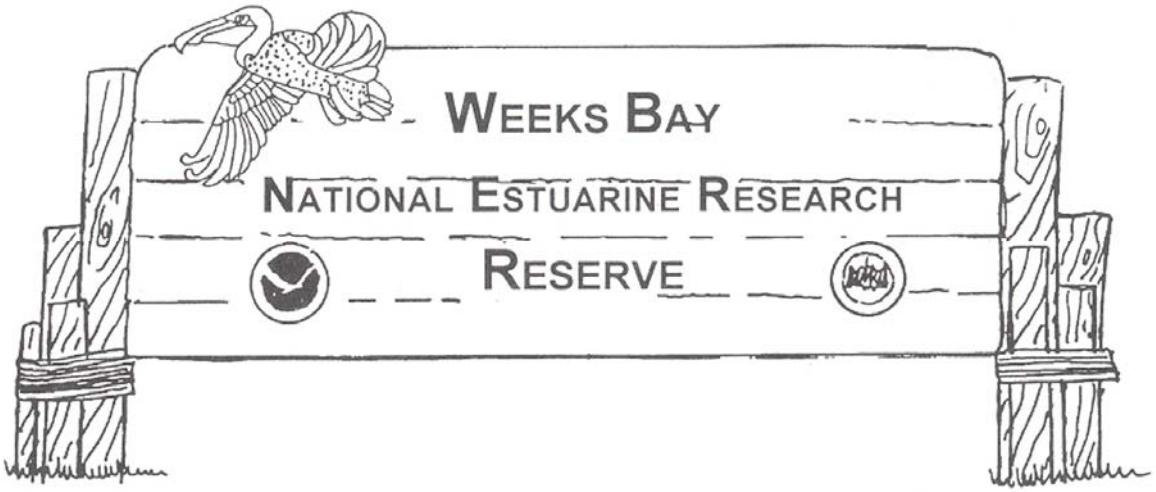
Mowing Height Affects Drought Resistance

Proper mowing helps develop deep roots. Mowing too closely encourages shallow rooting, making your lawn susceptible to damage by drought. Taller grass may also better shade soil, reducing soil temperatures and water loss.

LAWN HABITATS

A walk through a wilderness area in Baldwin County...

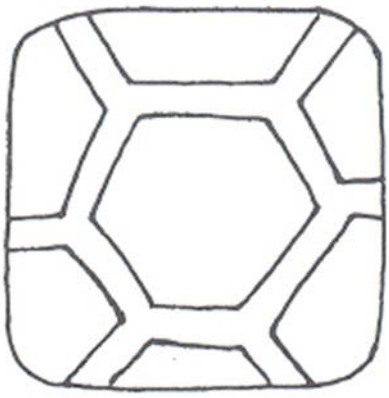
...such as Blakeley Park, Weeks Bay National Estuarine Research Reserve, or Gulf Shores State Park, instantly reveals that there is no lack of plants growing wild. But who is doing the rototilling in the spring, applying herbicides, and watering during droughts? No one, of course. What we are seeing is a no-work garden thal consists of plants that are perfectly adapted to their environment... a strong contrast to our carefully nurtured home gardens.



It makes perfectly good sense to allow at least a small portion of your yard to be "wild" or "natural". Landscape architects often incorporate such areas within their garden plans - not only for contrast, but to provide a site for local and migratory birds and animals. It is particularly important to leave a vegetation buffer along stream banks and shorelines to avoid excessive runoff and erosion. See the plant list in Appendix for a recommended list of native plants for landscaping.

Permeable Paving Surfaces

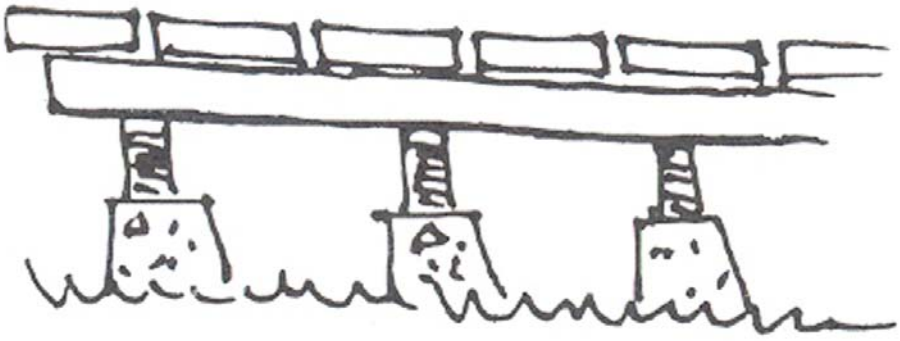
The use of permeable paving surfaces will reduce the amount of runoff from your lawn. Bricks, interlocking pavers, or flat stones are recommended for walkways and patios. If placed on a well-drained soil or on a sand or gravel bed, these will allow rainwater infiltration. New porous materials, such as porous asphalt, are similar to nonporous pavement in durability and cost. Use porous asphalt on your driveway and encourage its use on streets and parking lots in your community.



PERMEABLE PAVING SURFACE

Wooden decks can also serve as a form of porous pavement. Redwood, cedar or treated pine are as durable as most other paving surfaces. Maintaining the distance between the soil surface and the decking recommended by the county building department will minimize wood rot.

Avoid the use of landscaping plastic beneath decorative rock or bark. This plastic



prevents water from entering the soil. Instead try woven materials that accomplish the task of weed control while permitting water penetration.

Pest Management

Chemical pesticides can have many ecological side effects when used improperly: poisoning wildlife, contaminating water and the soil and harming humans (especially children). Here are some simple, natural methods we can use in our yards and gardens to minimize pests:

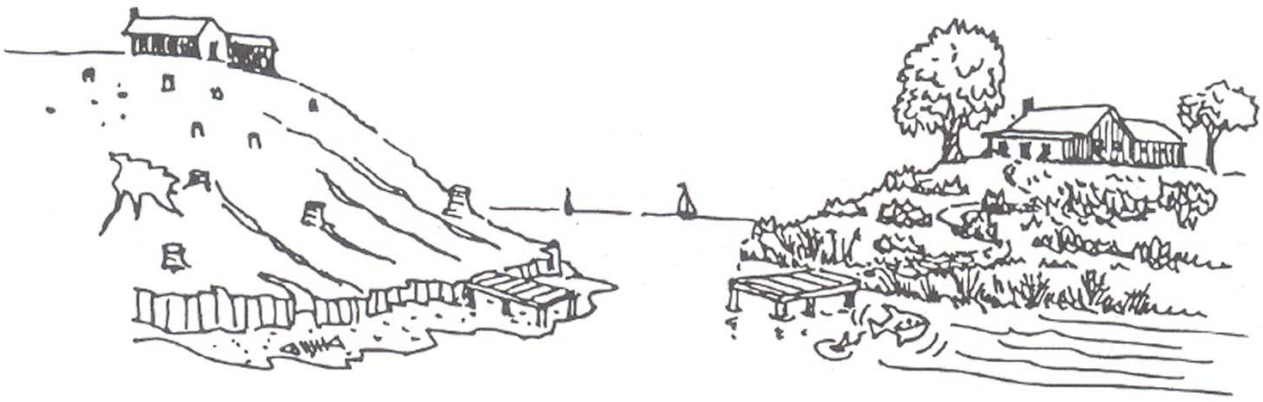
- Introduce or provide habitat for natural predators (i.e. toads, gartersnakes and beneficial insects)

- Remove eggs, larvae, cocoons, and adult forms of destructive insects by hand.
- Apply insect hormones that prevent the insect from growing into a sexually mature adult.
- Plant bed with a variety of plant types. Mixed plant beds are less susceptible to insect damage than bed with a monoculture or one plant type.
- Avoid planting and harvesting when insects are most abundant and damaging.
- Try oil sprays and organic pesticides first. If necessary, use synthetic pesticides with a short life, apply only as needed and apply during the correct part of the insect's life cycle.
- Use (when possible) biosensitive insecticides that are specifically labeled for the pest you want to control

Integrated Pest Management (IPM) is a practice that focuses on prevention by considering the ecosystems as a whole. Proper plant selection and effective maintenance will minimize the likelihood of disease or insect infestation. Identification of the insect or disease, and knowing its lifecycle, will assist in controlling damage. Contact the Baldwin County office of the Alabama Cooperative Extension System for more information on IPM.

SHORELINE LANDSCAPING

Thanks to abundant rainfall (about 63" per year) and generally low-lying countryside, large portions of Baldwin County's settled areas are either adjacent to or near bodies of surface water (streams, estuaries, bays, and wetlands). Human activities often result in the pollution of these nearby waters, unless proper conservation procedures are followed during and after site development.



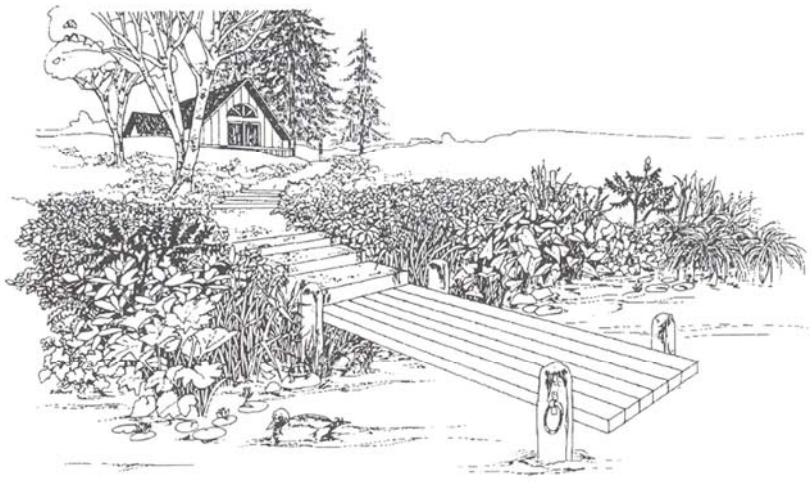
The construction of homes, industrial sites, and access roads normally requires at least partial clearing and modification of land surfaces. Exposed soil can be eroded and washed into surface waters. This erosion can be reduced by the use of temporary ground cover and sediment barriers. Moving the construction site as far as possible from the waterbody and minimizing the removal of trees and other vegetation prior to and during construction can also help. Any area in which the soil is disturbed should be immediately stabilized with seed, sod, or mulch.

It is common to see shoreline property with manicured lawns extending to the water's edge. This approach should be avoided as it encourages the movement of fertilizers and pesticides into nearby waters. The pollution hazard can be greatly reduced by leaving a 15 - 25 foot buffer zone of unmowed turf or natural vegetation along the shoreline. Grasses will grow I to 2 feet high before going to seed. The inland end of this zone (and access paths) can be mowed to produce a natural-looking curve.

The appearance of the buffer zone can be enhanced by appropriate plantings of ground covers, shrubs, and trees (see Appendix). Native plants blend in well with the natural shoreline landscape. Trees and shrubs can frame good views and screen out poor views. Such plantings will gradually form a woodland setting with openings for visual and physical access to the water.

SOURCES FOR MORE INFORMATION

Florida Lawn Handbook, Florida Cooperative Extension Service-SP45/ color photos; selection, establishment, and best management practices for maintaining warm climate turf grasses, http://edis.ifas.ufl.edu/LH030.



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LaPrade, Jesse C. and James E. Hairston. 1993. Home Environment: Self Enviroruuent Assistance. Cir. ANR-802. ACES, Auburn University, AL 36849.

The references listed below are taken from "The Water Quality and Pollution Control Handbook", Circular 790, written by James E. Hairston in 1993 for the Alabama Cooperative Extension Service, Auburn University, AL 36849. Contact your local Extension System Office for information on availability of this and other helpful publications.

Where to go for help…

The following is a partial list of environmental service agencies that have regulatory authority, provide technical assistance or disseminate useful information to residents living in coastal Alabama. For a complete listing of environmental agencies please refer to the "Alabama Coastal Counties Environmental Handbook", available through the Alabama Department of Conservation and Natural Resources, State Lands Division, Coastal Section or the Baldwin County Planning and Zoning Department.

For technical assistance on matters pertaining to erosion control, gully restoration, septic system location and wildlife habitat contact:

U.S.D.A. Natural Resources Conservation Service
207 Faulkner Drive
Bay Minette, Alabama 36507
(251)937-7174

For information on solid waste disposal contact:

Baldwin County Environmental Management Department
15140 County Road 49
Summerdale, Alabama 36580
(251)989-2320

For information on agricultural crops, pesticide application, horticulture, home economic, environmental education and youth contact:

Alabama Cooperative Extension System
302 Byrnes Street
Bay Minette, Al 36507
(251)937-7176 or (251)937-0222

For information on coastal permitting and planning contact:

Alabama Department of Conservation and
Natural Resources, State Lands Division, Coastal Section
Coastal Programs Field Office
5 Rivers Alabama's Delta Resource Center
(251)621-1219

For information on environmental laws including Clean Air Act, Clean Water Act, Safe Drinking Water Act and federal solid and hazardous waste laws contact:

Alabama Department of Environmental Management
Mobile Field Office
2204 Perimeter Road
Mobile, Al 36615
(251) 450-3400

For assistance with septic system permitting or other public health matters contact:

Baldwin County Health Department
P.O. Box 369
Robertsdale, Al 36567
(251) 947-3618

APPENDIX

RESIDENTIAL LOW MAINTENANCE PLANTS

All plants listed here grow in average yard conditions with full sun unless otherwise noted. Also given are general sizes and expected growth rate.

TREES

Long leaf pine *(Pinus palustrus)*		large, moderate
Shumard oak *(Quercus shumardii)*		large, fast
Sweetbay *(Magnolia virginiana)* moderate tolerates wet, shady conditions; evergreen		medium-large, moderate
Tulip popular *(Liriodendron tulipifera)* tolerates wet sites		large, fast
Black gum *(Nyssa sylvatica)* tolerates wet sites		large, moderate
Atlantic white cedar *(Chamaecyparis thyoides)* tolerates wet sites; evergreen		medium-large, slow
Red maple *(Acer rubrum)* fast tolerates wet sites,	some shade	medium-large, fast
American holly *(Ilex opaca)* tolerates some shade		medium, moderate
River birch 'Heritage' *(Betula nigra)* tolerates some shade		medium, fast
Silverbell *(Halesia spp.)* tolerates some shade		small, moderate
Redbud *(Ceris canadensis)*		small, moderate
Fringe tree *(Chionanthus virginicus)* tolerates wet sites		small, slow

SHRUBS

Agarista *(Agaristapopulifolia)* sun or shade, wet or dry		to 15 feet, evergreen
Florida anise *(Illicium.floridanum)* needs at least partial shade		many shapes and sizes, evergreen
Yaupon *(Ilex vomitoria)* sun or shade; wet or dry		to 30 feet, evergreen
Buckwheat tree *(Cliftonia monophylla)* tolerates wet conditions		6-15 feet, deciduous
Blueberry *(Vaccinium spp.)* sun to partial shade		2 feet, evergreen
Doghobble *(Leucothoe axillaris)* tolerates wet conditions, needs partial shade		3 feet, evergreen
Dwarf wax myrtle *(Myrica ceriferapumila)* sun or	shade, wet or dry	to 20 feet, evergreen

GROUNDCOVERS

Green and gold *(Chrysogonum virginianum*)	partial to full shade
Carolina jasmine *(Gelsemium sempervirens)*	full to partial sun
Verbena *(Verbena canadensis)*	full sun, dry conditions
*Verbena *(Verbena tenuisecta)*	full sun, dry conditions
*Creeping lily turf *(Liriope spicata)*	sun to shade, wet to dry
*Mondo grass *(Ophiopogon japonicus)*	well adapted to dense shade
*Common periwinkle *(Vinca minor)*	tolerates shade
*Bugleweed *(Ajuga reptans)*	partial to full shade
*Dwarf gardenia *(Gardenia jasminoides radicans)*	full to partial sun
Creeping juniper(Juniperus horzantalis)*	full sun, dry conditions

*non-native species

SHORELINE PLANTS

Fresh to brackish waters

TREES

Bald cypress *(Taxodium distichum)*
Pond cypress *(Taxodium distichum nutans)*
Red maple *(Acer rubrum)*
Atlantic white cedar *(Chamaecyparis thyoidev)*
Sweet bay *(Magnolia virginiana)*
Loblolly bay *(Gordonia lasianthua)*
Swamp chestnut oak *(Quercus michauxii)*
Slash pine *(Pinus eliotti)*
Loblolly pine *(Pinus taeda)*
Black gum *(Nyssa sylvatica aquatica)*
Tulip poplar *(Liriodendron tulipifera)*
Fringe tree *(Chionanthus virginicus)*
Silverbell *(Halesia spp.)*
River birch *(Betula niger)*
Parsly hawthorne *(Crataegus marshallii)*

SHRUBS

Buckwheat tree *(Cliftonia monophylla)*
Titi *(Cyrilla racemiflora)*
Groundsel *(Baccharis halimfolia)*
Yaupon *(Ilex vomitoria)*
Dahoon *(Ilex cassine)*
Possomhaw *(Ilex decidua)*
Buttonbush *(Cephlanthus occidentalis)*
Possomhaw viburnum *(Viburnum nudum)*
Highbush blueberry *(Vaccinium corymbosum)*
Swamp azalea *(Rhododendron viscosum, R. serulatum)*
Mountain laurel *(Kalmia latifolia)*
Sweet pepperbush *(Clethra alnifolia)*
Virginia sweetspire *(Itea virginica)*
Chokeberry *(Aronia arbutifolia)*
Doghobble *(Leucothoe axillaris)*
Fetterbush *(Lyonia lucida)*

GROUNDCOVERS

Carolina jessamine (Gelsemium sempervirens)
Ribbon grass *(Phalaris arundinacea)*
River oats *(Chasmanthium latifolium)*
Switch grass *(Panicum virgatum)*
Palm sedge *(Carex muskingumensis)*
Cattail *(Typhaspp.)*
Blueflag *(Iris virginiana)*
Louisiana iris *(Iris giganticaerulea)*
Spiderlily *(Hymenocallis spp.)*
Swamp lily *(Crinum anienicanum)*
Native canna lily *(Cannaflacida)*
Obedient plant *(Physostegia virginiana)*
Cardinal flower *(Lobelia cardinalis)*
Cinnamon fern *(Osmunda cinnamomea)*
Royal fern *(Osmunda regalis)*
Dwarf palmetto *(Sabalpametto)*
Arrowhead *(Sagettaria spp.)*
Lizard's tail *(Saururus cernuus)*
Pickerelweed *(Pontederia cordata)*

COASTAL PLANTS

Tolerant of moderate amounts of salt, wind and drought

TREES

Live oak *(Quercus virginiana)*
Laurel oak *(Quercus hemisphaerica*)
Souttiern niagiiolia *(Magnolia grandiflora)*
Cabbage palm *(Sabal palmetto)*
Southern redcedar *(Juniperus silicola)*
Redbay *(Persea borbonia)*
Persimmon *(Diospyros virginiana)*
Wax i-nyrtle *(Myrica cerifera)*

SHRUBS

Groundsel *(Baccharis halmifolia)*
Yaupon *(Ilex vomitoria)*
Inkberry *(Ilex glabra, compacta)*
Wild rosemary *(Conradina canescens)*
Dwarf Wax myrtle *(Myrica cerifera pumila)*
Woody goldenrod *(Chrysoma paucifloscuiosa)*
Saw palmetto *(Serenoa repens)*

GROUNDCOVERS

Sea oats *(Uniola paniculata)*
Giant dune grass *(Elytmus racemosus)* 'Glaucus'
Beach panic grass *(Panicum amarum)*
Muhly grass *(Muhlenbergia capillaris)*
American beach grass *(Ammophila breviligulata)*
Virginia creeper *(Parthenocissus quinquefolia)*
Carolina jessamine *(Gelsemium sempervirens)*
Muscadine grape *(Vitis rotundifolia)*