

**Think Globally; Act Locally
Your Home**

David L. Faulkner

“Conservation is a state of harmony between men and land.” - Aldo Leopold

Practicing conservation improves resource usage, helps create and sustain a healthier environment, and can diminish the build-up of greenhouse gases and global change. Just as any act that destroys a part of the strand of life has damaging effects that ripple throughout the world's ecological system, the opposite is also true. Every individual act that improves part of the web of life imparts direct effects that contribute to making the world a better place. Awareness and understanding of how individual actions collectively affect natural resources can lead to more informed choices and enhancement of the natural environment.

This issue of *Horizons* focuses on some of the choices you can make in your home and yard that can lead to lower costs for you and help improve the environment at the same time. Some of the suggestions might require minor expenditures, but most are changes in the way you think. In other issues of *Horizons*, I will focus on conservation measures that you can take in your community and at work and in support of policies that can help improve the air, soil, and water quality.

Inside your home

Water

Reduce water use in the home. You can do many things that will reduce your water usage in your home. These actions will use less energy and reduce both your electric and water bills. Take shorter showers; be efficient in washing your hands; turn-off the water while brushing teeth, gargling, and shaving; rinse dishes in a bowl of water instead of a constant stream; install low-flow shower heads and toilets or place objects in the tank that displace some of the water used with

every flush. Minimize use of the garbage disposal and the water it uses by recycling kitchen scraps into mulch beds and compost piles. A dripping faucet can waste 20 gallons of water or more a day; it's easy to fix.

Energy

Replace conventional incandescent and halogen lights as they burn out with florescent, compact florescent, and the new light-emitting diode (LEDs) type lights. Florescent lights and LEDs have higher initial costs than incandescent lights but are generally less expensive than halogen lights. They more than pay for themselves over time through lower operating costs and much longer useful lives.

Conserve energy by turning off lights when they are not needed and by using programmable thermostats that control both the trigger temperatures and the hours of the day when heating and cooling will be turned on and off. Get an energy audit to determine weaknesses in your insulation and heating and cooling systems that can be cost effectively improved. Many utility companies offer energy audit services to their clients. Some even have on-line tools to help you evaluate your home energy conditions and potential savings.

Recycle

Recycle or properly dispose of all used oil and anti-freeze when maintaining your vehicles and gas powered equipment. Designated recycling centers will take them either for free

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or a small charge. Even small amounts of oil can be very damaging to water quality in our streams and water bodies. And pets are attracted to and like the taste of anti-freeze, but anti-freeze can be lethal.

Recycle or properly dispose of all unneeded solvents, cleaners, and other household chemicals. Don't flush them down the toilet or dump them in the landfill. Consult your local health department or county government agencies such as Cooperative Extension for information about proper disposal of toxic chemicals that could be very harmful to the environment.

Recycle all food and drink containers, packaging, cardboard, and grocery bags. If you have the blessing of living in a community with curb-side recycling, take full advantage of it. If you don't have this convenience, take your recyclables to local schools or other civic groups that use recycling as a fund raiser or to public or private recycling stations. Since recycling can be inconvenient, limit the amount of recyclable materials you need to deal with in the first place. Durable shopping bags and baskets can be used many times. Many grocery stores sell cloth bags with their logo, as do many environmental groups to promote conservation. Some grocery stores will even give you a discount for using your own bags.

Use nickel-metal hydride (NiMH) rechargeable batteries instead of nickel-cadmium (Ni-Cad) batteries in battery operated toys and tools. NiMH batteries weigh less, last longer, and are far less damaging to the environment if disposed of improperly compared to the Ni-Cad batteries. Properly dispose of all batteries, especially motor vehicle and Ni-Cad batteries, when their usefulness is over.

Recycle draft print-outs from home computer work twice. The first recycling is when you reuse this paper by printing on the opposite side. The second recycling is when you put the paper in a recycling bin.

Outside your home

Lawn

Plant multiple lawn species rather than a monoculture. Although attractive, establishing and maintaining a monoculture lawn usually requires repetitive and costly additions of fertilizers, lime and herbicides, and sometimes also requires pesticides, fungicides, and aeration. If you are willing to accept a more diverse lawn cover (not as neat and pretty as a golf course, but ecologically healthier and more valuable to nature), especially if you incorporate legumes such as clovers, you will have a more self-reliant lawn that

needs very few inputs to maintain itself. The legumes will fix nitrogen (the single most important plant nutrient) from the soil air and increase the natural fertility of your lawn. These lawns are more resistant to diseases and insects and are less susceptible to the damaging effects of droughts, especially if a mixture of warm season and cool season grasses are used. The warm season species will go dormant during cool parts of the year in many locations, but you can over-seed with a plant material such as annual rye grass to provide seasonal green cover throughout much of the winter. Whether a strategy such as this will work for you is a function of your climate more than any other factor, but no worries, plant materials and planting options are available for each climate zone. Visit the NRCS Plants database web-site (<http://plants.usda.gov>) for help in selecting plants that will serve your particular needs.

Plant native or naturally adapted lawn and garden species. Avoid the need for expensive irrigation systems by planting grasses and ornamental plant species that are either native to your area or are naturally adapted, non-invasive, and thrive without added water. This practice can save you a lot of money as the initial investment cost of irrigation systems, especially those with automated timers and on-off switching valves can be quite expensive and the recurrent cost of maintaining them, such as replacing sprinkler heads damaged by the lawnmower, and paying for irrigation water itself adds up. In a state such as Virginia that receives on average over 40 inches of precipitation that is fairly well distributed over the year, irrigation systems for homeowners are unnecessary.

Mow your lawn with the highest setting your mower allows to create more natural shading which is especially beneficial for cool season grasses as the summer progresses. Higher cutting allows healthy re-growth to occur more rapidly as more vegetative material remains, more water infiltrates, soil temperatures remain cooler, and less surface evaporation occurs. Protecting the base of your lawn grasses by not damaging the vegetative parts where growth is initiated is very important for maintaining a healthy ground cover.

Leave mower clippings where they fall on the lawn to help build soil organic matter. As organic matter builds up on the surface of your soil, the below ground volume of organic matter also increases as a healthier growing environment is created. Increased soil organic matter creates conditions favorable for the development of soil aggregates. Soil aggregates are naturally forming clumps of soil which help to create pores in the soil profile. Increased organic matter and soil porosity promote a healthier soil environment by allowing greater infiltration of rainfall and air and greater nutrient and water storage. More water, air, and nutrients

are available in healthy, high quality soils. Improvements to soil quality also aid uptake of water and nutrients by lawn plants and helps them to be healthier. A mulching mower works best for recycling grass clippings. It shreds cut lawn material into finer pieces than a standard mower. Finer pieces drop to the surface of the soil more easily and get incorporated into the soil better than clippings from standard mower blades. Special mulching blades can be added to most mowers. But any mower can function as a mulching mower as long as you don't bag and remove the clippings from your yard.

Compost

Compost all organic materials like kitchen scraps, leaves, and so forth to reduce the amount of materials that enter our landfills. Their organic matter nature and nutrient contents mean that they are an important resource for your garden, flower beds and lawn. Garbage disposals simply transfer vegetable trimmings to your septic tank or local water treatment plant. Reducing the waste disposal costs will also contribute to saving tax dollars.

Replace commercial fertilizer on your lawn, flower beds, and garden with organic compost. Using compost will recycle all the nutrients your lawn and household produces back into the soil profile. If you aren't exporting your organic matter and associated nutrients, then you probably don't have a need for external fertilizer inputs and your costs are reduced. You essentially need only to monitor the pH of your soil to maintain a healthy growing environment. You can add lime if and when it is needed for acidic soils and appropriate amounts of acid-forming fertilizers or mulches for alkaline soils. Mulching organic wastes and compost around your flower beds and garden plants will benefit them also.

Bury pet waste, not cat litter, under mulch in your flower beds but not in your vegetable garden.

Soil

Keeping your soil resources in place coupled with vegetating riparian areas with trees, shrubs, forbs,¹ and grasses are the most important conservation actions you can take as a homeowner to improve the quality of our streams and receiving water bodies and the associated wildlife and aquatic habitat. Vegetation along stream banks, ponds, lakes, bays, and estuaries and intermittent drainage-ways and associated areas, such as wetlands, trap eroded soil particles and nutrients. They also help to trap and break down pollutants such as oil, pesticides, and other

chemicals that can be very damaging to the natural environment. Simply put, permanent vegetation—trees, shrubs, forbs, and grass complexes—enhances the ecological functioning and aesthetics of your landscape.

Protect soil from water and wind erosion and temperature extremes by keeping it covered at all times with either living vegetation or organic mulches. Vegetation and plant residues absorb much of the energy of rain-drops and wind, thereby preventing or reducing erosion. In addition, green vegetated surfaces such as lawns are about 8° F cooler than bare soil. They are far cooler than concrete and much cooler than black asphalt pavement. Keeping as much of your yard covered with vegetation will decrease the ambient, micro-environment temperature during the hot summer months. With some trees providing shade, you will also reduce your air conditioning bill.

Use the conservation practices of nutrient management, no-till gardening, mulching, crop rotation, and cover crops in your yard and garden to add value to your home by stabilizing the landscape, beautifying the environment, and attracting wildlife. Most conservation practices function to prevent water erosion by maximizing onsite infiltration—greater infiltration equals less rainfall that runs off in concentrated flows. Increased infiltration “walks” surplus water off your land. Use of conservation practices minimizes the risk of gully erosion and prevents the loading of streams with sediments, organic matter, pesticides, and other chemicals used in yards and gardens.

Plant shade areas, living fences, windbreaks, and hedgerows to improve the aesthetics of your property as well as to serve many practical needs such as screening off unsightly views, producing cooling effects, providing wildlife habitat, and providing buffers that diminish the effects of strong winds that carry unwanted smells from adjacent properties. Trees and shrubs are wonderful in so many ways; plant as many as you can use.

Control or prevent erosion and sedimentation during construction by using Best Management Practices (BMPs). Areas disturbed by earth movement and construction easily contribute soil, nutrients, and other pollutants to our roads, streams, and water bodies. Many simple practices from rapid seeding of vegetative covers and mulching to silt fences and storm-water runoff management with sediment and debris basins can help minimize the damaging effects of construction. Grading concrete or paved blacktop areas towards your lawn allows the plants and soil to have an opportunity to absorb

¹ Forbs are herbaceous, i.e., non-woody, plants other than grasses.

and break-down any pollutants that runoff. Local NRCS, Soil and Water Conservation District, or local erosion and sediment control authority can provide more ideas and information on erosion and sedimentation control regulations and BMPs.

Reducing noise and air pollution

Use hand-powered tools whenever possible. Brooms, rakes, and hand weeding tools provide you with light cardiovascular exercise without generating the greenhouse gases that electric and gas powered equipment do. Neither do rakes, brooms, and hand powered weeding implements generate the noise pollution that electric and gas equipment do.

Irrigation

Facilitate groundwater recharge by limiting the amount of impervious (built-on and paved) surfaces on your property and by installing gravel filled “tube-wells” that help surplus rainfall soak deeper into the soil instead of running off. These tube wells can be as large or small as you want to make them and as few or as many as your climate and geography call for. Depending on size, you can hand-dig or use a backhoe, then back-fill with gravel, and place soil and vegetation on top. The idea is to allow surplus water to have the opportunity to percolate to the deeper levels of your soil profile where it can be stored for slower release into adjacent streams and water bodies, or simply reside for your trees and deep rooted grasses, shrubs, and garden crops to take advantage of as dry periods ensue. Gravel-filled trenches along walkways and driveways will have effects on groundwater recharge similar to gravel-filled tube wells as runoff is collected in these areas and soaks into the soil profile.

Use rainwater to irrigate. A roof-runoff collection system will capture rainwater for use as a source of water for supplemental irrigation. Commercial rain barrels and cisterns are available that can be positioned to collect rainfall from gutter downspouts. Home-made ones can also be assembled from common metal or plastic barrels and other materials. Rainwater, which is generally much better for gardens, lawns, and flower beds compared to municipal water because it does not contain additives, is generally less damaging to earthworms, macro-invertebrates and other soil dwelling micro-environment organisms. (Acid rainfall from air pollution is an exception).

Irrigate sparingly if you must irrigate at all, especially on lawns. Repetitive, frequent irrigation weakens plants by encouraging their root systems to remain close to the surface.

Surface roots are the first to die during a prolonged drought. Prolonged droughts periodically occur in most areas and sooner or later usually result in local governments imposing mandatory water use restrictions. When irrigating, especially during the summer, apply water either late in day or early in the morning to reduce evaporation losses. During the spring and the fall, don't water at all unless absolutely necessary and obviously in the winter irrigation isn't needed as most plants are dormant. If you must buy an irrigation system, soaker hose and drip irrigation systems are the most efficient means to deliver any needed water to your lawns and plants. Drip systems may have higher initial costs, but their low operating costs will usually pay for them over time.

Install or replace a septic tank system for waste disposal, if necessary, with one that is properly sized along with an adequate drain field. Do not site the drainfield in areas where the depth to groundwater, bedrock, or other restrictive soil layers, such as shrink/swell soil, is very shallow (less than 36 inches). Installing septic systems improperly or where they can't function properly will lead to surface and/or groundwater contamination. Proper maintenance should also be performed periodically to prevent tree roots from disrupting the functioning of your system. Under-sized systems and poorly functioning systems from inadequate design or maintenance sometimes need to be pumped out or have the lines cleaned of roots, which can be very costly. In addition, the odors from improper maintenance and malfunctioning drain fields certainly will not be enjoyable for anyone.

Keep clean water clean. This simple concept cannot be over emphasized when considering how one can minimize the negative effects of your daily actions on water quality. Divert clean water from roof-tops, patios, driveways, and other collection surfaces safely away from areas susceptible to erosion by using downspouts, splash deflectors, earthen diversions and water-bars, grassed waterways, and so forth. Diversions are low mounds of earth designed to control where runoff goes and the speed it moves to prevent erosion; water-bars are basically baby diversions. Directing clean water from impervious areas, away from dog kennels or barnyards laden with manure will also prevent damage to down-slope water quality. Keeping clean water clean is analogous to the proverbial “An ounce of prevention is worth a pound of cure.”

Weed and Pest control

Use environmentally safe ways of controlling weeds and pests. Many earth-friendly management techniques and alternatives can be found in organic gardening publications from the public and private sectors. Only an estimated 1 percent of all insects are bad for lawns, flower beds, and

gardens. The rest are beneficial insects, such as ladybugs that eat aphids, lacewings that eat many caterpillars, and praying mantises that eat all kinds of insects. Many pesticides are not very selective in what they kill and have other negative effects on the environment. Chrysanthemum-derived pesticides, citric acid, diatomaceous earth, and boric acid all are earth friendly and can help control unwanted pests. Dishwashing liquid also can be used when diluted (3 to 6 tablespoons per gallon of water) to control some insect pests. Lemon juice and vinegar will control some weeds. To control ants use red cayenne, habanera, or other hot peppers ground up and dissolved in water.

Encouraging wildlife

Install bird feeders, bird homes, bird baths, and bat and butterfly houses and plant vegetation (especially flowering shrubs) that provide cover, nesting and brooding areas, seeds, nectar, and other vegetative parts beneficial to wildlife and beneficial insects such as ladybugs and butterflies. American Cranberry bush, Bittersweet, Cherry, Crabapple, Firethorn, Flowering Dogwood, Hawthorn, Highbush Blueberry, Holly, Red Cedar, and Winterberry, among many others are very good for providing wildlife habitat. Nectar producing plants, such as Black-eyed Susans, are especially important for bees and butterflies. Butterflies are important pollinators and add beauty and wonder to your environment.

Plant beneficial plants that serve different environmental functions. Some plant vegetation is known to repel nematodes, damaging insects, and slugs. Marigolds repel root damaging nematodes while beautifying your environment with their flowers. Other plants with repellent properties include garlic, onions, nasturtium, geraniums, turnips, and tansy. You can also plant specific species that damaging pests love to attract them away from your vegetable garden or that will attract beneficial insects that will feast on the harmful ones.

Conclusion

Practicing conservation in your daily life will benefit your checkbook and the environment. It will cost you only a bit of time to change your thinking and to plan your actions. You don't have to implement all these conservation practices at one time. Start with one and add others as you become comfortable with each practice.

Conservation means not being wasteful of our resources and not polluting nature around us. Simply put, conservation pays and after you get started in and around your home, even if you rent, conservation becomes easy. Changing one's outlook and daily habits is the most difficult part, but the rewards are worth the investment. So use a conservation mindset and take daily actions to reduce your bills, and provide a better place for you, your family, the community, and the world: Think globally, act locally.

Notices

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