UF IFAS Extension UNIVERSITY of FLORIDA

ENH 1110

Design Strategies for a Sustainable Home Landscape[1]

Gail Hansen de Chapman[2]

For many homeowners the concept of a sustainable landscape is a yard that needs little water or maintenance to survive. A common image of such a yard typically includes a small lawn, few ornamental plants, a large natural area, and/or a fair amount of rocks and gravel or other hard surfaces. Unfortunately this image often gives the false impression to many homeowners that a sustainable yard must look desert-like, have large hard surfaces, or look wild and unkempt. The reality is a sustainable yard can be lushly planted, attractive, *and* undemanding.

The key concept is to choose the right plant and the right hardscape material (hardscape includes built structures, such as decks, patios, ponds, walkways, garden walls, and rock gardens), then put these in the right place for the right purpose. Doing so means your yard will be sustainable because it is functional, environmentally sound, low maintenance, cost effective, and visually pleasing. Visual appeal (and perceived value) is a concern for many homeowners.

The good news for homeowners who prefer a more manicured look is that there are ways to be Florida-friendly without compromising aesthetics. Drought-tolerant landscape plants with a "neat" growth habit are available. The "wild" appearance of certain native plants can be controlled with architectural features (arbors and fences) and selected maintenance practices. Natural areas can be made more attractive by removing debris and sprawling plants. And construction materials — such as pervious paving — can reduce the visual and ecological impact of large paved areas, such as driveways.

These and many other strategies can be incorporated in your yard to make it more sustainable. The list below offers a wide variety of ideas to choose from with links to other EDIS publications and various websites for additional information. Pick a few strategies that are best suited to your yard and your capabilities. Start small. Even if you can only use a few ideas you will be contributing to the ecological health of your neighborhood. Don't try to do everything at once — choose one or two things you can do now and consider items you can implement later. Over time, each small improvement will create a truly sustainable yard, but the biggest impact in the shortest time will be your plant choices, which is a good place to start.

Select the Right Plants

- First, identify the plant material you currently have and remove the invasive exotics. Simply removing invasive plants will make your yard more sustainable and often times more aesthetically pleasing. For a list of invasive plants, see the Florida Exotic Pest Plant Council website, http://www.fleppc.org/list/list.htm.
- Relocate or remove plants that have been planted in the wrong location, especially large-growing foundation shrubs. They won't do well if they lack moisture, air circulation and space to grow.
- Think about the yard over many future years and seasons. Although all newly installed plants will require water; choose plants that need little water once established. For more information, see *Irrigating Landscape Plants during*

1. This document is ENH 1110, one of a series of the Environmental Horticulture Department, UF/IFAS Extension. Original publication date January 2009. Reviewed April 2018. Visit the EDIS website at http://edis.ifas.ufl.edu.

2. Gail Hansen de Chapman, assistant professor, Department of Environmental Horticulture, UF/IFAS Extension, Gainesville, FL 32611.

Reviewed: 06/2022

Establishment (available on line at http://edis.ifas.ufl.edu/ep113).

- Group plants by similar water and soil needs, and limit the use of plants that need a lot of water to very small, highly visible areas of the garden. Typical areas include the front-entry door, the area adjacent to the pool enclosure or patio, or a driveway entrance.
- Plant more trees. They need less water once established and provide shade, which reduces temperature and evaporation of moisture creating a pleasant microclimate. See *Specifications for Planting Trees and Shrubs in the Southeastern U.S.* (available online at http://edis.ifas.ufl.edu/ep112).
- Consider vegetation that will produce food for wildlife for your family. For more information go online to *Edible Landscaping*, http://edis.ifas.ufl.edu/ep146 and *Your Florida Dooryard Citrus Guide*, http://edis.ifas.ufl.edu/features/handbooks/dooryardcitrus.html.
- Use compost bins for all plant waste. To construct a bin see *Construction of Home Compost Units* (online at http://polkhort.ifas.ufl.edu/documents/publications/Composter%20construction.pdf).
- Use your house, fences, walls, and trees to create microclimates for different plants. For example, the north side of your house will provide deep shade, fencing can be used to block cold winter winds, and stone or concrete garden walls can absorb and re-radiate heat for a warm spot at night.

Keep up the Maintenance

- Remember native plants that look untamed in their natural habitat may have a more appealing, ornamental look when trimmed and cared for. For those concerned with security, good maintenance provides a visible indicator that the landscape is intentional and the house is inhabited. For tips on pruning, see *Pruning Landscape Trees and Shrubs* (http://edis.ifas.ufl.edu/mg087).
- Use other design cues and maintenance strategies to indicate that the yard is being cared for and to broaden the aesthetic appeal, including the following:
  - Small (minimum 4-foot wide) areas of neatly mown turf by plant beds or along roads and walkways give the entire yard a more manicured look.
  - Mix common, easy-to-recognize plants with natives, and/or mix naturalistic plantings with formal plantings for a touch of manicured look.
- Use "naturalistic" pruning techniques that maintain a neat, but un-sheared plant. Use the natural form or habit of the plant as your guide for the trimmed form, and don't shape shrubs to look like balls or formal square hedges.
- Use plants with the appropriate size and habit to avoid constant pruning.
- Use mulch to control weeds. See *Mulches for the Landscape* (http://edis.ifas.ufl.edu/mg251).
- Group trees together in large, self-mulching beds for natural areas.
- Use fences and other hardscape elements to "control" the wild appearance of some natives. Sometimes a structural element is all that is needed for a more manicured look.

Manage Stormwater

- Look at existing drainage patterns. Use swales, dry wells, French drains, dry creek beds, berms, and low retention areas to slow the movement of water off your property and allow water to be retained on-site, where plants can absorb it. For more information, see the Low Impact Development (LID) Urban Design Tools website (online at http://www.lid-stormwater.net) and the U.S. Environmental Protection Agency LID website (online at http://water.epa.gov/polwaste/green/).
- Use a rainwater catchment system — such as rain barrels or collection tanks — to harvest water from the roof for later use. For more information about building your own cistern or rain barrel, see *Cisterns to Collect Non-Potable Water for Domestic Use* (available online at http://edis.ifas.ufl.edu/ae029).
- Install paved areas to have the appropriate slope direction and gradient (minimum 2 percent slope) to direct stormwater to planted areas.

Protect the Soil

- Protect topsoil from compaction and excessive erosion; for example, avoid driving with vehicles on any planted area, especially under trees, and provide an intentional water course (a dry creek bed or gravel swale) to capture and direct water flow.
- It's also a good practice to get a soil test before adding fertilizers or amendments. To learn how to test the pH in your soil, read *Soil pH and the Home Landscape or Garden* (available online at http://edis.ifas.ufl.edu/ss480).
- It's much easier to grow plants adapted to the existing soil conditions than to change the soil. If improvements are needed, keep plant beds small and amend the entire planting bed, not just the hole for the plant. For more information on amending soil, see *Soils and Fertilizers*

for Master Gardeners: *Soil Organic Matter and Organic Amendments* (available online at http://edis.ifas.ufl.edu/mg454).

- Use compost and mulch to build healthy soil and improve plant resistance to pests and diseases.
- Limit the widespread use of gravel, rocks, and other inert mulches. Although they work well to keep weeds down, these mulches do not return organic matter to the environment.
- Look for mulch that is certified to be free of CCA-treated wood contaminants. More information can be found on the trade association website for mulch — the Mulch and Soil Council (http://www.mulchandsoilcouncil.org/).

Use Small but Functional Turf and Paved Areas

The shape of the lawn affects water use. Avoid irregular shapes and long, narrow areas (less than 4 feet wide), which are difficult to irrigate efficiently. Design the turf area to be large enough to be functional, but with the smallest-possible perimeter, such as a simple square or circle. More information on design can be found at SULIS- the University of Minnesota website for landscape (http://www.sustland.umn.edu/design/module1.htm).

• Design paved areas so that the paving modules (such as bricks or pavers) do not require excessive cutting and waste of material.

- Design paved areas to accommodate the required level of use and no more; paved areas should only be large enough for the intended activity.
- Use decks, patios, ponds, retaining walls, garden walls and rock gardens to add interest and create spaces, but find a good balance between these hardscape elements and planted areas.

Use Reclaimed, Recycled or Local Hardscape

- Reclaimed materials are the greenest option. Reusing material reduces waste and the need for virgin resources and uses no manufacturing energy.
- Use reclaimed or repurposed metal for fencing and structures. Metal is durable and long lasting, does not leach pollutants, can be recycled, and is low maintenance.
- Use materials made from recycled plastic, such as recycled plastic lumber (RPL). More information can be found at the California Integrated Waste Management Board website — http://www.calrecycle.ca.gov/Plastics/Recycled/Lumber/.
- Use reclaimed brick, concrete and aggregate. The primary environmental impact related to stone is mining and transportation energy. Reusing bricks or broken concrete from your old patio can reduce mining activity.
- Choose woods that are labeled from a sustainable timber production and (with the exception of wood that contacts the ground) woods that are not chemically treated. For more information on certification, go to the Forest Stewardship Council online at http://fscus.org/faqs/what_is_certification.php. The best wood is naturally durable hardwoods from a source as close to the site as possible.
- If pre-treated wood is necessary, use wood treated with low VOC paints, stains and preservatives. Solvents used to thin paints and stains should be vegetable-based, rather than mineral-based. Paint and stain pigments should be made from inorganic earth and mineral pigments, and preservatives should be water borne and include zinc, copper, or fluoride compound salts. The website of the independent, non-profit Green Seal organization has more information on environmentally friendly paints and solvents at http://www.greenseal.org/.
- Design wood structures to shed rainwater. Any wood that becomes wet and does not dry out is vulnerable to decay and insect attack. Protect endgrains with caps, and do not set post ends in concrete footings that hold water.
- Use joinery and hardware, such as carriage bolts, that allow a structure to be dismantled and reassembled for repair and replacement or recycling.

Install Efficient Irrigation

• Irrigation systems are designed to work in an overlapping layout and are most efficient in small areas with a simple form.

- Design the irrigation system so that turf zones are separate from shrub and groundcover zones. Better yet, use manual hose end sprinklers and take the time to learn the soil/water requirements. For more information, see *Let Your Lawn Tell You When to Water* at http://edis.ifas.ufl.edu/ep054 and *Conserving Water in the Home Landscape* at http://edis.ifas.ufl.edu/mg217.
- Micro-irrigation systems apply water directly to the soil, so little water is lost to evaporation. To learn more, read *Microirrigation in the Landscape,* available online at, http://edis.ifas.ufl.edu/wi007.

Use Natural Pest Control

- Use artificial habitats — such as bat boxes and bird houses — to encourage natural insect control. See *Landscaping Backyards for Wildlife: Top Ten Tips for Success* online at http://edis.ifas.ufl.edu/uw175.

Design for Energy Efficiency

- Plant appropriate trees for each side of the house. Year-around shade trees on the east and west side will block seasonal sun, and deciduous trees on the south side will allow sunlight in the house in winter and block the sun in the summer. For detailed information, see *Enviroscaping to Conserve Energy: a Guide to Microclimate Modification* at http://edis.ifas.ufl.edu/eh143.
- Use landscape, such as trees and shrubs, to slow wind and mitigate temperatures. Winds that skim across asphalt or other hard surfaces tend to pick up and transport summer heat into the yard and home, while winter winds tend to carry heat away from homes.
- Cool breezes should be funneled into the house in the summer for passive cooling. Climbing plants can be helpful because they create a layer of still or slow-moving air around the building, yet still allow wind flow through windows and doors.

Reduce Light and Noise Pollution

- Light pollution (a night sky filled with light) has become a problem in urban areas. Reduce the use of lights at night to reduce light pollution. To learn more about the Dark Skies Initiative see the International Dark-Sky Association website — http://www.darksky.org.
- Loud, noisy power tools, such as leaf blowers, contribute to noise pollution, especially on weekends. Switch to hand tools such as rakes.

Resources

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