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IFAS Extension

Resource Efficient Landscapes and Irrigation

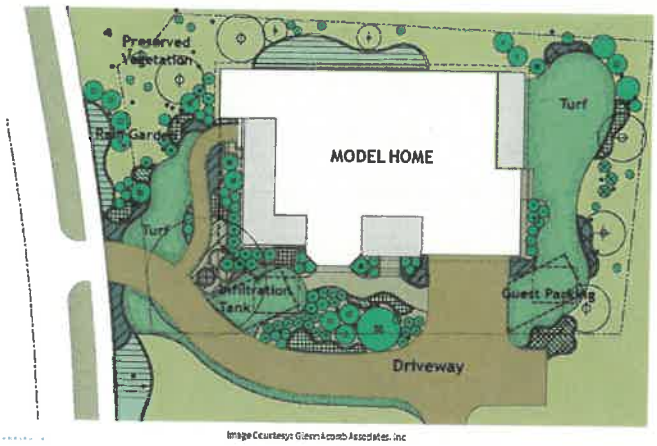


Image Courtesy: Glenn Acomb Associates, Inc



Landscape design for a resource efficient landscape in the Madera subdivision in Gainesville, FL. Photo illustrates the front yard portion of the installed landscape.

Definition:

Resource efficient landscapes in Florida are those Florida-friendly landscapes that minimize environmental impacts to the greatest extent possible. According to the Florida Statutes (FS 373.185), " 'Xeriscape' or 'Florida-friendly landscape' means quality landscapes that conserve water and protect the environment and are adaptable to local conditions and which are drought tolerant. The principles of Xeriscape include planning and design, appropriate choice of plants, soil analysis which may include the use of solid waste compost, efficient irrigation, practical use of turf, appropriate use of mulches, and proper maintenance."

Objectives:

Resource efficient landscaping entails use of a number of principles and practices that reduce the nutrient, water, and energy inputs and outputs resulting from residential landscapes. The two core goals of resource efficient landscaping and irrigation are nutrient source control and efficient irrigation application.

Overview:

A principal component of resource efficient landscapes is the adoption of the highest standard (gold level) of the Florida Yards and Neighborhoods (FYN) program, which requires practices such as appropriate fertilization and use of the "right plant, right place" philosophy. In the last few years, FYN's target audience has expanded to include builders, developers, landscape architects, landscape maintenance professionals and real estate professionals. Currently, FYN has coordinators working (either full or part-time) with builders and developers in nearly two dozen counties, and the state office provides support for those counties that currently do not have a staff person formally in the Builder/Developer Coordinator role.

Additional principles that can help reduce the water quality and quantity impact from landscapes are preservation or planting of tree canopy, reduction of high maintenance turfgrass, use of appropriately sited native plants, and use of reclaimed water for irrigation. All of these integrate with the "reduce, reuse, recycle" philosophy. Technologies such as soil moisture sensors and micro-irrigation can help reduce overwatering. Stormwater and graywater reuse systems can replace potable water use and help mimic natural

Applications

- **New construction**
- **Retrofits**
- **Commercial**
- **Residential communities**

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hydrological function. Dual metered and piped reclaimed water systems recycle treated wastewater back onto urban landscapes in a controlled and distributed pattern.

Benefits

- Reduction of pollutant load
- Reduced water consumption

Water Protection Benefits:

Water conservation implications – The average Florida household uses approximately 50% of its water for outdoor irrigation. In most cases this is potable water, which is of a quality far above that required for landscape irrigation. Matching landscape design and installation to local soils and natural hydrology can significantly reduce, or eliminate, potable water consumption.

Stormwater implications - Quantity

Reducing excessive landscape irrigation minimizes the amount of water running off of the landscape into the stormwater management system. This can translate to reduced nutrient and contaminant concentrations in stormwater runoff.

Stormwater implications - Quality

Nutrients added to urban landscapes are likely to be one of the greatest contributors to non-point source nutrient pollution in Florida. For example, high nutrient loading from urban fertilizer use has been implicated as a driving factor contributing to the algal blooms in 2004 and 2005 in the St. Johns River. Limiting or eliminating fertilizer in residential landscapes and applying it correctly when used can help to preserve existing water quality. Additionally, reducing excessive landscape irrigation can translate to reduced nutrient and contaminant concentrations in stormwater runoff.

Design Considerations:

Landscape plant suitability is integrally connected to groundwater elevation, slope, soil composition, and a variety of other localized characteristics. Resource efficient landscaping and irrigation can be applied to any home site. The plant palette available depends on climate and varies widely from the Panhandle to south Florida and from coastal to interior regions. Numerous resources exist for assistance in selecting the right plants for a landscape. Additionally, plant water requirements vary, being lower in cooler northern areas and higher in warmer southern areas.

Under ideal conditions, a resource efficient landscape and irrigation system would far exceed performance of a traditional landscape. This type of "gold standard" landscape is designed and maintained to exist predominantly on rainfall once plants are established. In this case minimal to no supplemental fertilization is used in the landscape and no pesticides are use in the landscape or only biological and biorational pesticides are used when needed. Meeting these standards achieves the highest recognition level from the Florida Yards & Neighborhoods program. This can be achieved in part by starting with adequate soil conditions (avoiding compaction and not planting on fill soil) and preserving existing vegetation or installing drought tolerant, hardy plants that are highly adapted to the site's conditions.

Design Keys

- Selection of plants appropriate to site conditions
- Maintenance practices

Operations and Maintenance:

The principles related to resource efficient or Florida friendly landscapes include putting the right plant in the right place, watering efficiently, fertilizing appropriately, mulching, attracting wildlife, managing yard pests responsibly, recycling, reducing stormwater runoff and protecting the waterfront. See the University of Florida's *A Guide to Florida-Friendly Landscaping: Florida Yards & Neighborhoods Handbook* for detailed information on designing and maintaining a low maintenance landscape using those nine principles.

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HOA or Regulatory Considerations:

F.S. 373.185 requires that "A deed restriction or covenant entered after October 1, 2001, or local government ordinance may not prohibit any property owner from implementing Xeriscape or Florida-friendly landscape on his or her land." This statute also directs the state's water management districts to design and implement incentive programs for local governments to adopt or amend existing ordinances to require Florida friendly landscaping in new developments, including providing a model Florida friendly landscaping code.

In 2002, the Florida Department of Environmental Protection, together with Florida's nursery and landscape industry and the University of Florida, created the *Guidelines for Model Ordinance Language for the Protection of Water Resources in Florida*, which provides example landscape ordinance language for local governments.

In 2006, the University of Florida's Conservation Law Clinic created model CCR language for the FYN program, which was made available as a tool for developers.

Credits in Green Building Certification Programs:

- FGBC-Home Standard (waterfront prerequisites: use of native, aquatic vegetation on shoreline, no turf adjacent to water, use of terraces, swales or berms to slow stormwater; W16 drought tolerant turf; W17 drought tolerant plants; W-18 plants compatible with local conditions; W-19 turf less than 50% of landscape; W-20 evenly shaped turf and no turf on berms; W-21 plants with similar maintenance requirements grouped together; W-22 mulch 3-4 inches deep; W-23 non-cypress mulch used; W-24 soil tested and amended where necessary; W-25 no permanent irrigation system; W-26 innovative irrigation technology; W-27 meet or exceed Water Star standards; W-28 irrigated land according to FGBC standard)
- FGBC-Development Standard (A-4 compost or mulch facility; A6 drought resistant landscape material in non-recreational common areas; CDR-2 no language in CCRs that prohibits green practices)
- Florida Yards & Neighborhoods New Construction Certification and Homeowner Recognition (points are earned for using various specific resource efficient landscaping practices)
- Florida Water Star℠ (points are earned for using various specific resource efficient landscaping practices)
- LEED for Homes (SS-2 landscaping)
- LEED for Neighborhood Development Pilot (GCT Credit 3: Reduced Water Use, no permanent irrigation system; GCT Credit 9: Stormwater Management)
- NAHB Model Green Home Building Guidelines (1.3.5 Manage storm water using low-impact development when possible; 1.3.6 Devise landscape plans to limit water and energy demand while preserving or enhancing the natural environment; 4.1 indoor/outdoor water use)

Relative Costs:

Costs for resource efficient landscapes can vary greatly depending on homeowner preferences. There is evidence that both upfront and maintenance costs for these practices can be lower when compared to those for conventional practices, particularly over time.

References and Resources:

Florida Department of Environmental Protection. 2002. *Guidelines for Model Ordinance Language for the Protection of Water Resources in Florida*. http://fyn.ifas.ufl.edu/materials/fdep%20model%20ordinance%20language%20for%20florida%20friendly%20landscapes.pdf

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Fraga, G.M. and Pagidipati, Srujani. 2006. Florida Friendly Landscaping Covenants, Conditions and Restrictions. Prepared for Florida Yards & Neighborhoods by the Conservation Clinic, University of Florida Levin College of Law. http://fyn.ifas.ufl.edu/materials/florida-friendly%20covenants,%20conditions%20and%20restrictions.doc

University of Florida IFAS – Florida Yards & Neighborhoods: http://fyn.ifas.ufl.edu

Florida Yards.Org – Florida Friendly Landscaping: The Smart Way to Grow: www.FloridaYards.org

Credits

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