



## WILD Horticulture Series: An Ecological Approach to Introducing Florida-Friendly Landscaping

MAXINE HUNTER\* AND AMANDA MAREK

*University of Florida/IFAS, Marion County Extension, 2232 NE Jacksonville Road, Ocala, FL 34470*

**ADDITIONAL INDEX WORDS.** climate change, drought, environmental horticulture, integrated pest management, nutrients, water conservation, wildlife conservation

The WILD Horticulture Series (Water and wildlife conservation, Integrated pest management, Landscape services, Done right!) has been established by the University of Florida/Institute of Agricultural Sciences Marion County Extension to offer conjoined programs in ecologically friendly gardening techniques. Attendees learn about gardening through Florida Friendly Landscaping's nine principles while also learning about native ecosystems as a whole, wildlife, alternatives to traditional gardening such as hydroponics, and new ways implement best management practices in the residential landscape. These classes are held monthly at several community center locations within home owners associations in Marion County, Florida. A total of 13 classes have been provided since September of 2017 with a total of 262 attendees. Post class surveys have stated that 95% of attendees were satisfied with the course and learned new information. Attendees will be sent six month follow up surveys to evaluate changes they have made in their landscape that will benefit local ecosystems, attract wildlife, reduce water consumption and non-point source pollution, or reduce landscaping costs to the resident

As part of the Florida-Friendly Landscaping™(FFL)program, we look for new ways to encourage residents to participate in ecologically sound horticultural practices in their own backyard landscapes. There are magnificent natural resources, particularly in Marion County, FL, that involve water and freshwater springs that connect to the Floridan Aquifer system. In recent years, Marion County has experienced periodic droughts and a significant increase in water consumption leading to numerous sinkholes developing in residential neighborhoods. Global climate change is set to impact rainfall rates, causing increased frequency and severity of low flow in some regions (Easterling et al., 2000; Sheffield and Wood, 2008). Regions most likely affected are those that already have low rainfall and intermittent periods of drought (Easterling et al., 2000; Sheffield and Wood, 2008). Fig. 1 shows 18 years of drought data and significant fluctuations for the state of Florida, including times of severe drought. Marion County's population was 331,421 in 2010 with a recreational water usage total of 7.09 million gallons per day (5.54 million gallons per day fresh ground water); in 2015 the population had grown to 343,254 but recreational water usage decreased to 6.71 million gallons per day (3.71 million gallons per day fresh ground water). The population in Marion County is expected to experience rapid growth with a total population of 490,241 by the year 2040 (Marion County Growth Services, 2015). This increase in population means a significant increase in demand on water resources, sinkholes, and nutrient runoff into springs. It is vital with the expected growth and development that new residents are educated about our natural resources and protection of our water sources.

### Objectives

The WILD Horticulture Series (Water and Wildlife conservation, Integrated pest management, Landscape services, Done right!) was established by the University of Florida/Institute of Food and Agricultural Sciences (UF/IFAS) Marion County residential horticulture extension agent and the FFL extension

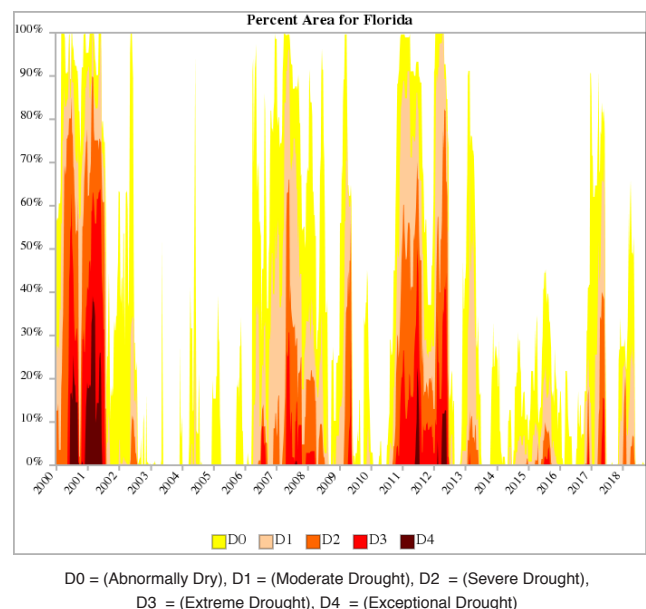


Fig. 1. Drought fluctuation data from the National Centers for Environmental Information from 4 Jan. 2000 to 17 July 2018 for the entire state of Florida. <<https://www.drought.gov/drought/data-maps-tools/tools>>

\*Corresponding author. Email: maxine32666@ufl.edu

Table 1. Class topics in the WILD Horticulture Series (Water and wildlife conservation, Integrated pest management, Landscape services, Done right!) presented by the University of Florida/Institute of Agricultural Sciences Marion County Extension Office, Ocala, FL.

Date	Topic	Number of participants
September 2017	Yards to Parks: Invasive plants know no boundaries	3
October 2017	Hydroponic Gardening	17
November 2017	Digging into Florida-Friendly Landscaping	21
December 2017	Attracting Safe and Friendly Wildlife	15
January 2018	Gardening in Winter	11
February 2018	Migrating birds	23
March 2018	Planting for Pollinators	8
April 2018	Wildflowers for your Garden	21
May 2018	Bats: Friend or Foe?	20
June 2018	Florida Snakes	52
July 2018	Save Water for the Fishes—How to Water your Lawn Efficiently	14
August 2018	Safer Pesticides	15
September 2018	The Most Common Landscaping Mistakes and How to Avoid Them	42
October 2018	Understanding Florida Hydrology	17
November 2018	Providing Habitat for Winter Wildlife in your Backyard	na
December 2018	Nuisance Wildlife	na
<b>Total Attendance</b>		<b>279</b>

na = Not applicable.

agent to offer conjoined programs in ecologically friendly gardening techniques. Programs offered through this series enhance homeowner knowledge of native wildlife, natural resources, and opportunities to enjoy Florida's natural ecosystems without disrupting them. In addition to the specialized topic for each class, the agent reminds homeowners to utilize the Master Gardener Plant Clinic to help diagnose problems, calibrate their irrigation system, reduce water usage, and decrease fertilizer use when appropriate. Participants are also educated about invasive plant and wildlife species, proper identification, and removal. In the 1980s, twenty-five exotic species of amphibians and reptiles had become established with breeding populations in south Florida (Wilson and Porras, 1983), and that number has increased substantially. Among these were nineteen lizards, one crocodilian, one snake, three frogs, and one turtle. Wilson and Porras (1983) point out that most of the exotics are strictly confined to urban and/or agricultural areas or canals with very few able to survive in natural areas.

### Materials and Methods

Both of the extension agents who started the WILD Horticulture series are UF/IFAS Wildlife Ecology and Conservation graduates, and are very passionate about Florida's natural resources. The WILD Horticulture series was developed as a way to attract new attendees and larger audiences to extension programs. Florida attracts over 4.3 million wildlife watchers per year and wildlife activities exceed \$10.1 billion dollars per year in economic impacts for the state (Florida Fish and Wildlife Conservation Commission, 2015). Attendees learn about gardening through Florida Friendly Landscaping's nine principles (Right Plant, Right Place; Water Efficiently; Fertilize Appropriately; Mulch; Attract Wildlife; Manage Yard Pests Responsibly; Recycle; Reduce Stormwater Runoff; and Protect the Waterfront) while also learning about native ecosystems, wildlife, alternatives to traditional gardening such as hydroponics, and new ways implement best management practices in the residential landscape. Attendees are provided UF/IFAS extension publications appropriate for each class and reference information as needed.

These classes are held monthly at several community center locations in home owners associations (HOAs) in Marion County, FL, including Master the Possibilities in the On Top of the World community, which has over 18,000 residents. Marion County is part of three large watersheds, home to three first magnitude springs, and is experiencing significant population growth. Therefore protecting our water resources is essential. Educational approaches focused on the interactions between home owner practices and natural resource quality is essential to maintaining healthy, happy living conditions as the population continues to rise in central Florida.

### Results and Discussion

A total of 13 classes have been held since September of 2017 with a total of 262 attendees. Class topics are indicated on Table 1. Post class surveys have stated that 95% of attendees were satisfied with the course and learned new information. Follow up surveys were sent via email to 136 participants and were conducted six months after the initial class that the participant attended. Only 10 of the 136 participants responded; therefore, the extension agents will resend follow up surveys and look into alternate distribution methods. Of the 10 respondents, 100% said they gained knowledge about Florida's wildlife and natural resources and ways to protect them. Three of the 10 respondents stated they have reduced or intend to reduce their water use for irrigation, six say that they have reduced or intend to reduce pesticide use, seven say they intend to plant FFL plants, six have reduced or intend to reduce the amount of turf in their landscape and eight have reduced or intend to reduce their use of fertilizer in their landscape. These behavioral changes are incredibly important to the longevity of healthy Florida ecosystems.

### Conclusion

There is a need and interest among homeowners to learn about FFL practices and Florida's wildlife and natural resources. Human activity is a major contributor of wildlife habitat loss and fragmentation. The loss of natural habitat caused by fragmenta-

tion is one of the major threats to the long-term conservation of species (Keller et al., 2004). Species such as the Florida scrub lizard (*Sceloporus woodi* Stejneger) are endemic to Florida and are listed as threatened in the state; helping homeowners learn to distinguish between and not fear beneficial wildlife species will help these creatures survive in our ever changing landscape. By offering a holistic program that intertwines gardening with wildlife and the environment, extension clientele can learn landscaping practices that also benefit local ecosystems and peaks multiple interests. The WILD Horticulture program attracts participants that may not otherwise attend horticulture programs. The WILD Horticulture Series will be continued into the foreseeable future at On Top of the World with the possibility of additional HOAs in 2019. It may be beneficial to take advantage of Marion County's abundant parks, natural areas, and gardens to incorporate field trips.

## Literature Cited

- Easterling, D., G. Meehl, C. Parmesan, S. Changnon, T. Karl, and L. Mearns. 2000. Climate extremes: observations, modelling, and impacts. *Science* 289:2068–2074.
- Florida Fish and Wildlife Conservation Commission. Economics of Fish & Wildlife Recreation in Florida. 2015. <<http://myfwc.com/about/overview/economics/>>
- Keller, I., W. Nentwig, and C. Lurgiader. 2004. Recent habitat fragmentation due to roads can lead to significant genetic differentiation in an abundant flightless ground beetle. *Mol. Ecol.* 13:2983–2994.
- Marion County Growth Services. 2015. Census 2010 TF 1 and University of Florida, BEBR Report 169, p. 48, June, 2014. <<http://www.marioncountyfl.org/home/showdocument?id=6802>>
- Sheffield J. and E. Wood. 2008. Projected changes in drought occurrence under future global warming from multi-model, multi-scenario, IPCC AR4 simulations. *Climate Dynamics* 31:79–105.
- Wilson, L. and L. Porras. 1983. The ecological impact of man on the south Florida herpetofauna. University of Kansas Museum of Natural History Special Publication 9.