

## **ALTERNATIVE LANDSCAPING AS A WATER CONSERVATION STRATEGY IN EXPANDING RESIDENTIAL LANDSCAPES**

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Residential and urban areas are the most rapidly expanding land cover type globally, resulting in the replacement of natural and agricultural habitats with simplified landscaped plant communities dominated by lawns and limited ornamental species. In Florida, greater than 60% of household water usage goes towards maintaining landscaping, with most of this outdoor water usage occurring in lots built after the 1980's that have outdoor irrigation systems. The fertilizers and pesticides used in landscaping management raise further environmental concerns. Here we report on an academic-municipal-private-NGO collaboration aimed at protecting water resources in an ongoing 37,000-home development southwest of Orlando, Florida. The key water-conservation strategies being tested are drought-tolerant, native planted-dominated landscaping and soil compost amendments. Two on-site studies are revealing the benefits of these water-conservation strategies and future research needs. The first study, a manipulative field experiment aiming to identify strategies to establish native plants in degraded development soils, has determined that irrigation can be reduced by at least 75% after initial establishment of native plants and that soil organic amendments can help to maintain plant health and appearance. The second study quantifies differences in irrigation, management efforts, and resources for higher trophic levels (floral and arthropods) between yards having native-dominated landscaping and yards in a nearby development having conventional turf-dominated landscaping. Despite the water conservation potential of the native-dominated landscaping, these savings are not yet fully realized, demonstrating the need to educate on how to manage alternative landscaping styles. In addition to water conservation potential, we are also seeing benefits to arthropod communities, including a doubling of pollinator abundance in plots receiving soil-compost amendments. Our findings are informing landscaping decisions in future development phases, while showing that separate landscaping conservation goals, e.g., water conservation and supporting biodiversity, are not mutually exclusive and can be met through integrative approaches.

**PRESENTER BIO:** Dr. Iannone is an Associate Professor and State Extension Specialist who uses his background in plant community ecology, ecological restoration, and biological invasions to increase the ecological value of designed and constructed ecosystems in urban and residential landscapes.