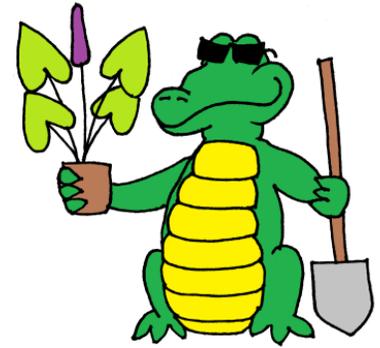


## UF/IFAS Aquatic Restoration Mini-Course



**1:00-1:05 Welcome/opening remarks**  
*Lyn Gettys, University of Florida*

**1:05-1:30 Nursery production of emergent aquatic plants for restoration projects**  
*Gil Sharell, Jr., Aquatic Plants of Florida*

Collaborative initiatives to preserve, manage and restore our State's natural water systems have increased demand for emergent aquatic plants. Production facilities are turning to innovative technologies and techniques to improve cultivation, control operating costs, and reduce native plant casualties. Mr. Sharell will discuss new industry opportunities while sharing a short film on the development of sustainable, inland marine and freshwater farming.

**1:30-1:55 Production of SAV sod for aquatic restoration**  
*Lyn Gettys, University of Florida*

Lake restoration projects can be challenging due to the limited availability of submersed native plant material, the difficulty of installing plants in an underwater environment, and the instability of many submersed sediments. Dr. Gettys will discuss a novel technique for producing SAV "sod" which is grown in mesocosms, easily installed in the field and results in an instant population of submersed native vegetation that quickly establishes and expands from the transplant site.

**1:55-2:20 Recovering Lost Treasures: Aquatic Resource Restoration**  
*Stephen Montgomery, Allstate Resource Management*

Aquatic resources in South Florida have great ecologic, financial, and cultural importance. Our lakes, canals, and wetlands are the foundation for sustainable existence. They create a complex watershed that requires management in order to function properly. Invasive species can cause detrimental effects and when regular maintenance efforts fall short, degradation of the resource starts to occur. Badly degraded waterways and wetlands require direct, specialized efforts to recover before they become irrevocably damaged and lost. The techniques and tools used in aquatic restoration are situation specific and careful planning is needed to

coordinate an appropriate response. This presentation will review how to develop restoration work plans and which techniques and tools are best suited to various problems.

**2:20-2:45 Establishment and management of vegetation-based treatment systems for phosphorus removal in the Everglades**

*Lou Toth, South Florida Water Management District*

The Everglades Stormwater Treatment Areas (STAs) are comprised of over 60,000 acres of constructed wetlands that remove phosphorus from agricultural runoff prior to discharge into the Everglades Protection Area. STAs have compartmentalized flow ways with cells that are managed for dominance by either emergent or submerged vegetation. Lou Toth will describe the processes by which these vegetation types provide water quality treatment, and how these systems are established and maintained in the STAs.

**2:45-3:00 Break and network opportunity – refreshments provided for all attendees**

**3:00-3:25 Techniques for on-site restoration of submersed areas**

*Jim Anderson, Seagrass Recovery*

Seagrass Recovery was founded to develop new technologies for restoring marine resources, focusing on seagrass communities. The first equipment to be developed was a sea tractor called the Fertigator, which is an aquatic adaptation of liquid-nutrition equipment used for sod farming. It injects a nontoxic and nonpolluting nutritional supplement into seagrass sediments to encourage sediment stabilization and plant growth resulting from enhanced microbial activity. A planting boat (JEB) was developed to plant seagrasses mechanically and government-sponsored research has shown that this method works as well as hand planting. Although useful, JEB plantings are subject to displacement so a fleet of boats, which can salvage large seagrass beds by moving and planting 20-sq. feet of sod from a donor bed to a new site, was developed. Erosion from propeller scarring and other damage to estuarine bottoms is corrected by inserting substrate-filled cloth tubes along the length of the scar, which stabilizes exposed sediments and allows seagrasses to grow over the scar. Newly planted SAV is protected by an exclusion cage that stays in place when installed like a crab trap but can be removed once the SAV is established. This

has already been demonstrated to protect *Vallisneria* plantings in a turbid river, and interest is being shown by agencies for other types of aquatic systems. All of the above approaches are incipient technologies that should be developed further in the same way that automobiles and computers have increased in efficiency.

**3:25-3:50 Ecological Restoration along Howard Frankland Bridge in Tampa Bay, Florida**

*Bruce Hasbrouck, Faller, Davis and Associates*

Causeways create unique opportunities for restoration projects. Construction of the causeways in Tampa Bay, Florida impacted submerged aquatic vegetation from the dredging and filling operations many years ago as well as the continued erosion along the shorelines. Upland areas associated with the highways created ample opportunities for nuisance species growth. The presentation will present some restoration projects that include seagrass bed creation, construction of rock groins for wave energy dissipation, large-scale nuisance species removal, native plant installation, and the use of native grasses for stormwater treatment.

**3:50-4:15 A Behind-the Scenes Look at Developing a Management Plan for Orange Lake**

*Bruce Jagers, Florida Fish and Wildlife Conservation Commission*

Restoration projects are often high visibility and garner a great deal of public attention, particularly when aquatic resources are involved. This presentation will outline the process undertaken by the FWC's Orange Creek Basin Working Group to begin development of a management plan for Orange Lake. This has included engaging stakeholders and identifying fish and wildlife species, habitat types, public use of Orange Lake, and many other factors that must be considered before specific restoration projects can be identified and developed.

**4:15-4:40 Aquatic Habitat Enhancement in Public Waterbodies: Using the Tools in the Toolbox at Tropical Park and Lake Trafford**

*Rodney Hudson and Beacham Furse, Florida Fish and Wildlife Conservation Commission*

Aquatic resources with public access are utilized extensively by stakeholders for recreational purposes. The FWC is tasked with improving these areas to support

stakeholder activities and to enhance habitat for aquatic fauna. This presentation will focus on the goals, design and execution of aquatic area enhancement projects at Tropical Park and Lake Trafford, two southern Florida parks that are located in Miami-Dade (Tropical Park) and Collier (Lake Trafford) counties. Mr. Hudson will outline the techniques and strategies used to enhance these parks, including removal of invasive or undesirable vegetation and revegetation with native emergent and submersed aquatic and wetland plants.

**4:40-4:45**    **Closing remarks/adjourn**  
*Lyn Gettys, University of Florida*

## **Bios for UF/IFAS Aquatic Restoration Mini-course**

**Gil Sharell** manages family owned Aquatic Plants of Florida, Inc., a twenty-year old habitat restoration company that grows over 135 species of native plants for customers in the Southeastern US and Caribbean. He has created a seed cleaning and science business as well as co-developed a native plant tissue culture laboratory. Mr. Sharell collaborates on numerous grant funded research and development pilot projects with partners in academic, governmental and non-profit organizations. He has earned a B.A. from Stetson University and an M.B.A in Management, with Honors, from Mercer University.

**Dr. Lyn Gettys** is an Assistant Professor of Agronomy and is based at the University of Florida IFAS Fort Lauderdale Research and Education Center in Davie. She is an affiliate faculty member with the UF IFAS Center for Aquatic and Invasive Plants and the UF IFAS Water Institute. She has been working with aquatic plants since 1996 and has worked closely with FWC biologists to develop methods that can improve the success rate of lake restoration and aquatic habitat enhancement projects. Dr. Gettys began her current position in January 2012; prior to that, she worked as a post-doctoral researcher and a research assistant scientist under the direction of Dr. Bill Haller at the UF IFAS CAIP. She holds a bachelor's degree in horticulture from The University of Florida, a master's degree in plant breeding from North Carolina State University and a PhD in plant genetics from The University of Florida.

**Stephen Montgomery** earned a B.S. in marine biology from Richard Stockton College of New Jersey. He has worked with N.O.A.A.'s Sanctuaries and Reserves division, Rutgers University's marine field lab and taught biology and environmental science for five years. Stephen has sat on the board of directors for F.A.P.M.S. and S.F.A.P.M.S. and is also an S.F.A.P.M.S. past president. He has been with Allstate Resource Management for the last 13 years working as a licensed applicator, wetland mitigation department supervisor, and senior biologist.

**Lou Toth** is a Principal Ecologist in the Vegetation Management Section of the Land Resources Bureau of the South Florida Water Management District. Lou has worked on restoration and wetland management issues in south Florida for 32 years, and currently oversees vegetation management for the Everglades Stormwater Treatment Areas.

**James F. Anderson (Jim)** resides in Ruskin, Florida and has been married to Susan Anderson for 40 years. They have three daughters, all teaching in Hillsborough County schools. For much of his life, Jim was owner of Anderson and Son Nursery (1973 until 2004). In addition to growing standard ornamentals and farming sod, he has cultivated native grasses to provide sod for novel applications. Jim became involved in seagrass restoration when a local favorite fishing area was threatened with closure because of extensive propeller scarring. Repairing the damaged seagrass beds seemed more logical to him, and he began

developing technologies to address seagrass-restoration needs. He founded his company Seagrass Recovery to develop novel approaches for restoring seagrass communities or creating new ones. Jim continues to develop approaches for stabilizing shorelines and restoring Florida's native communities. Jim Anderson has worked with the USACE, NOAA, FDEP, FWC/FWRI, SFWMD, among others. Projects have been completed in Texas, Maryland, Florida, and Virginia.

**Bruce Hasbrouck** is a Certified Environmental Professional with more than 30 years of experience in environmental permitting, construction management, permit compliance inspections, NEPA/PD&E assessments and documentation, mitigation and stormwater pond designs, wetland restoration projects, design/build projects, artificial reef design and permitting, wetland mitigation monitoring and maintenance management, seagrass surveys, and photo interpretation of wetlands. His environmental consulting experience includes roadways, bridges, airports, landfills, parks, solid waste transfer stations, gas pipelines, electric utilities, residential and commercial developments, fishing piers, and water projects in the US and Caribbean. He earned a BS in Marine Biology from the University of South Carolina and a MS in Management from National-Louis University. He is a past president of the National Association of Environmental Professionals and currently serves on the local, state, and national Board of Directors.

**Bruce Jagers** is a Fisheries and Wildlife Biological Scientist III with the Florida Fish and Wildlife Conservation Commission's Division of Habitat and Species Conservation, Aquatic Habitat Restoration and Enhancement Sub-Section. Bruce Jagers works within the Aquatic Habitat Restoration and Enhancement Sub-section of the Florida Fish and Wildlife Conservation Commission. Bruce has worked for the Commission since 1986, first permitting grass carp for aquatic plant management needs in private and public water bodies and then conducting fresh water wetland, lake and stream restoration projects. He is based at FWC's Eustis Office.

**Rodney Hudson** is a Fisheries and Wildlife Biological Scientist III with the Florida Fish and Wildlife Conservation Commission's Division of Habitat and Species Conservation, Aquatic Habitat Restoration and Enhancement Sub-Section. **Beacham Furse** is a Biological Administrator and Aquatic Resources Conservation Manager for the Florida Fish and Wildlife Conservation Commission. Both are based at FWC's Okeechobee Field Office.