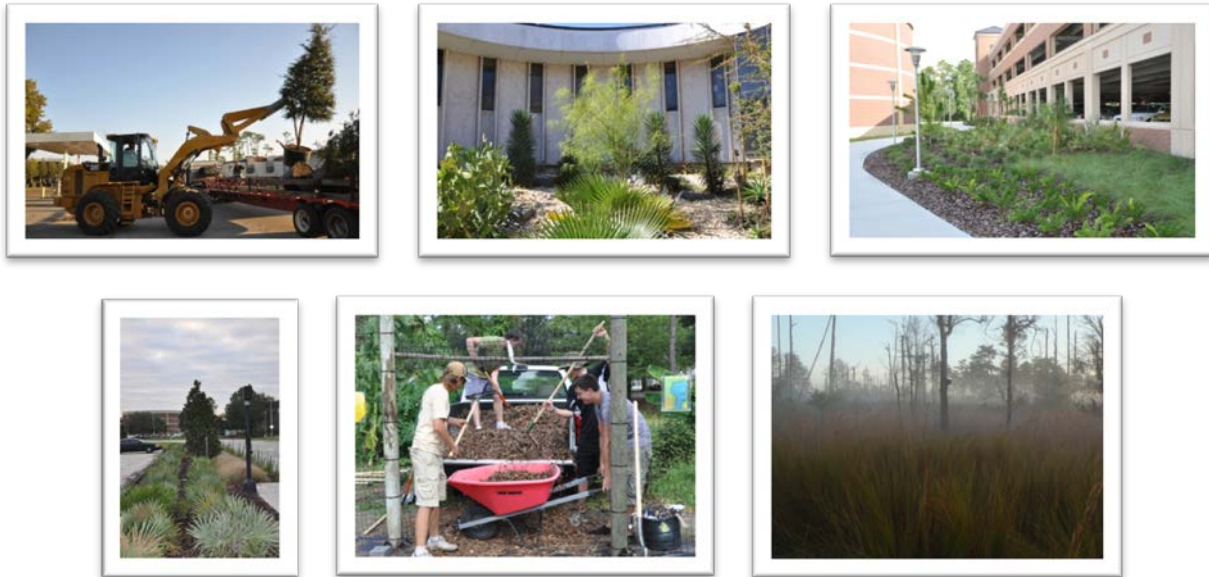


2011-2012 Annual Report



Department Mission and Vision

Landscape and Natural Resources enriches the community by creating and maintaining an inviting and sustainable outdoor environment, providing high quality service for operational activities, and generating research and educational initiatives that guide conservation and stewardship of natural resources. We support the mission of UCF through a comprehensive outdoor laboratory that creates opportunities for relevant, experience-based learning; urban ecology research; and human connection with ecosystems and landscapes. Our inclusive program supports regional, state, national and global efforts to develop sustainable urban environments.

Our program will expand UCF's vision by representing new types of partnerships that bridge the educational, research and operational goals of the University. These meaningful partnerships will create inclusive interdisciplinary strategies which will be a model of sustainability for the campus and community.



Contribution to UCF Goals

Offer the best undergraduate education in Florida

Landscape and Natural Resources (LNR) hosts internships, supports service-learning and volunteer courses, and hosts research projects across campus. This year, we hosted five (5) independent student projects (4 undergraduate, 1 graduate) which were completed by LNR interns. Project topics were: Bat ecology and life history; Agricultural history of UCF area; Plant pathology; Urban forestry and campus tree survey; and preparation of a grant (boardwalk installation). Seven (7) classes, reaching 1,408 students, were conducted in the campus natural lands in disciplines of Biology, Entomology, Engineering, Ecology, Anthropology, and Plant Taxonomy. Approximately 1,115 volunteers contributed 4,240 hours of service to LNR and the Arboretum, supporting landscape, natural lands, and organic garden projects on campus.



Become more inclusive and diverse

LNR supports a diverse work force, comprised of 57 full time staff and 3 student interns. The Department created an "English as a Second Language" landscape course, which taught fifteen LNR employees landscape-related conversational English. LNR established weekly meetings with supervisors and Senior Groundskeepers to develop standard operating procedures for the department.

Be America's leading partnership university

LNR expands UCF's vision by representing new types of partnerships that bridge the educational, research and operational goals of the University. These meaningful partnerships create inclusive interdisciplinary strategies which are a model of sustainability for the campus and community. In addition to the ten partnerships LNR maintains with external agencies, from the Water Management District to the Arbor Day Foundation, we continually create meaningful partnerships with internal groups to support our mission, and to facilitate theirs.

This year, in partnership with 18 student groups and clubs, LNR's adopt-a-road and pond programs helped remove over one hundred 50-gallon bags of recyclable trash and almost two hundred, 90-gallon bags of trash on campus. This effort helped save the University approximately 3,500 hours of cleanup time from everyday debris around ponds and roads, saving the department money, while improving student engagement. We also hosted one (1) Eagle Scout Project, which helped build an educational kiosk at the entrance to trails in the natural lands.

Department Highlights

Landscape

The Department completed forty (40) campus enhancement projects, including tree plantings on the Memory Mall; refurbishing 11 landscapes; removal and replacement of hazardous trees; and installation of appropriate tree species in sidewalk cutouts across campus. These projects improved major focal points; reduced maintenance by replacing aged or inappropriate plant material; and increased the campus tree canopy.

LNR also oversaw the design and implementation of new landscape construction projects on campus this past year, including: Technology Commons; Partnership II Canopy and Entrance; and the Garage B Solar Field. The projects tied into existing landscape themes emphasizing Florida-Friendly™ plant material, which requires lower maintenance and fewer inputs of water and chemicals.



LNR also completed a major infrastructure project to install new reclaimed water pumps and infrastructure to the campus core. This project converted 95% of campus irrigation from potable water to reclaimed water, greatly improving our sustainable use of water resources.

LNR initiated an experiment on the Memory Mall this year to test the costs and benefits of organic versus synthetic fertilizer for managing high maintenance turf. Data from the first five months shows that the plots treated with organic fertilizers had a greater presence of weedy species, probably due to lack of herbicide use, but turf growth and coverage was similar in synthetic and organic treatments. The presence of fungus was not significantly altered by either treatment, and non-harmful insect species were noted more often in the organic plots. This ongoing experiment will help LNR develop efficient and sustainable methods to support healthy turf on campus.

Natural Resources



Approximately 60% of UCF's campus is natural lands that are actively managed through prescribed burns, mechanical mulching, and invasive species treatments. Fourteen acres were burned, and 38 acres were mechanically mulched, to improve habitat quality in the campus natural lands.

Recreational opportunities, combined with management and research activities, help create opportunities for relevant, experience-based learning, urban ecology research, and human connection with ecosystems and landscapes. New

signage was added, identifying the Arboretum natural lands, and educational signage was added along trails. Additionally, four miles of trails were blazed and color-coded to inform visitors of trail locations. LNR hosted five (5) internships and supported seven (7) classes, in various disciplines, using the natural lands.



Another responsibility of LNR is to facilitate and conduct environmental compliance projects on campus. In compliance with the Clean Water Act, LNR completed the National Pollution Elimination System (NPDES) requirements and audit. Actions for this permit include six (6) minimum control measures: Public education and Outreach; Public Involvement; Illicit Discharge Detection and Elimination; Construction Site Runoff Control; Post-Construction Stormwater Management; and Pollution Prevention.

Three (3) ongoing mitigation projects were overseen by LNR, including the Environmental Lift, and mitigation in areas P-3, and W-9B. Seventy-five acres were spot treated for invasive, nuisance species, improving habitat quality. Sixty monitoring plots are surveyed twice annually to document plant community changes, and two active research projects are underway to evaluate changes in these populations given different management activities.

Urban Forestry

LNR is working toward a more diverse and appropriate tree canopy on campus, with a preponderance of native trees and understory plantings. Native plantings create a favorable canopy, while reducing irrigation needs. Since March 2011, fifty (50) diseased trees were removed, 162 palms were pruned, 246 trees were pruned, and 17 trees were air spaded to improve root vigor and plant health. Sixty (60) trees and palms were planted this year across campus.



An evaluation of UCF's tree campus, using the methodology created by Urban Forestry Effects (UFORE) model, was completed by LNR students. Results of this study found that UCF's tree canopy covers approximately 58.82% of the total campus area, and is composed of mostly (91.26%) trees native to North America. Carbon emissions sequestered from the canopy were estimated to be 4,955 metric tons, which is equivalent to 555,498 gallons of gasoline, or 972 passenger cars annually. The total amount of pollutants reduced by the urban forest was estimated at 16,284 kg/yr of which, 73% are attributable to trees and 27% to shrubs. Primary pollutants removed are ozone and particulate matter, which contribute to respiratory illness.

Staffing

LNR continues to maintain the campus grounds given a reduced staffing level. Two new positions, Assistant Director of Landscape and an Urban Forester, were created and hired this year. Five (5) replacement positions were also filled this year. In order to assess and plan for appropriate staffing levels in LNR, the Department initiated a workforce analysis this year. The first step in determining appropriate staffing levels for the landscape operations is to have an inventory of landscape assets. Advances in geospatial tools provide the opportunity to create a spatially-explicit landscape inventory in which staffing requirements are linked to individual landscape assets. We contracted with one of our continuing service contractors, Woolpert, Inc; to create a detailed landscape inventory of the entire main campus using ArcGIS geographic information system software. We are using the resulting map and database to calculate staffing needs for different levels of landscape maintenance as defined in the American Physical Plant Association's Operational Guidelines for Educational Facilities. The mapping for main campus will be completed in June 2012, after which we will expand the inventory to the Lake Nona Medical Campus and Rosen School of Hospitality. The resulting inventory and staff calculation will contribute to a complete workforce analysis of the entire department.



Other Accomplishments

Grants and Awards

For the second year in a row the Arbor Day Foundation has awarded UCF Tree Campus USA recognition. This award showcases UCF's commitment to encouraging students and university staff to care for our planet's tree resources, and foster a sense of environmental stewardship in college students. Additionally, in Partnership with the Arbor Day Foundation, LNR hosted the first-ever campus tree summit, in association with the Arbor Day Foundation's Annual meeting in Orlando. The summit focused on strategic care and management of trees on college campuses.

LNR applied for and was awarded \$21,188 from Florida Fish and Wildlife Conservation Commission to fund the treatment of upland invasive plant species in the campus natural lands. This grant helped support the continued management of the campus natural lands by reducing nuisance species, thus improving habitat quality.

Cost Effectiveness

Volunteers, coordinated in partnership with the UCF Arboretum, saved approximately \$50,880 worth of labor, which is equivalent to two full-time employee's time annually. Work performed included application of compost and mulch, weeding in landscape beds, pruning, and planting of several landscapes on campus. The LNR Adopt-a-Road and Pond program helped save \$37,020 through volunteers' efforts to remove trash and recyclable items from around pond and road edges.

LNR completed an evaluation of the cost difference between completing compliance requirements in-house versus through contracts. The data demonstrated that LNR's coordination of compliance actions are 1/3rd (P-3 Mitigation) to 1/4th (NPDES) the cost of hiring an outside contractor to do the same work (see table below).

Actions Performed by:	P-3 Mitigation Annual Cost	NPDES Permit Annual Cost
<i>LNR Staff</i>	<i>\$10,659</i>	<i>\$13,823</i>
<i>Contractor</i>	<i>\$39,330</i>	<i>\$52,260</i>
Savings	\$38,433 Per Year	\$28,671 Per Year

Employee Achievements and Awards

A goal within the Department was to offer training and certification to eligible employees to improve job knowledge and work efficiency. To achieve this, LNR hosted "Landscape Boot Camp" training for the Groundskeepers and Senior Groundskeepers, teaching basic plant biology, pruning, and maintenance methods. This six week course was taught in partnership with the University of Florida Extension Service, and was the first training course offered to LNR grounds employees. Additionally, 11 employees attended the "Green Industries Best Management Practice" training; five completed continuing education credits for their "Ornamental and Turf Applicator's License"; three obtained a "Restricted Pesticides Use License"; and five received the "Lawn and Ornamental Application License".

Assessment Data

Through completion of a department strategic plan, LNR has become more focused on planning and implementing planned goals and objectives. For additional information, see attached strategic plan, assessment plan and results.

