Measuring Visitation in Wildlife Management Areas Throughout Florida

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Every public land management agency in Florida provides unique nature-based recreation opportunities for Florida citizens and visitors. However, unlike most natural resource management activities (e.g., ecosystem restoration, timber harvesting, and wildlife management), recreation management does not result in clear outcomes for the agency or customer (i.e., recreationist). Researchers from the University of Florida’s School of Forest Resources and Conservation have been working for the past decade to identify and measure the many positive outcomes (economic, social, personal, and environmental) that are derived from recreation participation on public lands. However, a basic indicator of recreation quality is measuring the number of people who are visiting a specific area, and many agencies continue to struggle to generate an accurate number of visitation on their properties.

UF researchers have recently begun a project with the Florida Fish and Wildlife Conservation Commission (FWC) to provide an accurate estimate of visitors to Wildlife Management Areas. The FWC has installed over 140 vehicle and pedestrian counters in approximately 39 of the WMA’s where the FWC is the lead management agency. Although the counters provide some indication of the amount of use a specific area receives, correction coefficients must be calculated and applied to counter data if the FWC would like an accurate number of visitors to those areas. For example, a vehicle counter will measure the number of times a single vehicle triggers the counter, but estimates of people per car and how many times a single car might trigger a counter must be known to calculate an estimate of visitor numbers.

Working with FWC personnel, UF researchers clustered the WMA’s into similar categories and conducted a stratified random sample of vehicle and pedestrian counters. Researchers identified 32 counters throughout the state to conduct observation surveys. At each counter, UF surveyors record the number of cars (and in some cases, pedestrians), triggering the counter being sampled. They also stop vehicles to identify how many people are in the car and if the driver plans to cross the counter again. Other demographic and user data are also collected to better report who is visiting each site being sampled. Based on the data collected, researchers will develop correction coefficients for the counters sampled and these coefficients will be applied to monthly counter data to better quantify use at a particular area. The correction coefficients can also be used at unsurveyed counters that are expected to record similar use patterns in other WMA’s in order to improve the accuracy of their visitation counts. To learn more about this study contact Dr. Stein at tstein@ufl.edu.
Ecosystem carbon dioxide fluxes after disturbance in forests of North America


Disturbances are important for renewal of North American forests. Here we summarize more than 180 site years of eddy covariance measurements of carbon dioxide flux made at forest chronosequences in North America. The disturbances included stand-replacing fire (Alaska, Arizona, Manitoba, and Saskatchewan) and harvest (British Columbia, Florida, New Brunswick, Oregon, Quebec, Saskatchewan, and Wisconsin) events, insect infestations (gypsy moth, forest tent caterpillar, and mountain pine beetle), Hurricane Wilma, and silvicultural thinning (Arizona, California, and New Brunswick). Net ecosystem production (NEP) showed a carbon loss from all ecosystems following a stand-replacing disturbance, becoming a carbon sink by 20 years for all ecosystems and by 10 years for most. Maximum carbon losses following disturbance (g C m\(^{-2}\)y\(^{-1}\)) ranged from 1270 in Florida to 200 in boreal ecosystems. Similarly, for forests less than 100 years old, maximum uptake (g C m\(^{-2}\)y\(^{-1}\)) was 1180 in Florida mangroves and 210 in boreal ecosystems. More temperate forests had intermediate fluxes. Boreal ecosystems were relatively time invariant after 20 years, whereas western ecosystems tended to increase in carbon gain over time. This was driven mostly by gross photosynthetic production (GPP) because total ecosystem respiration (ER) and heterotrophic respiration were relatively invariant with age. GPP/ER was as low as 0.2 immediately following stand-replacing disturbance reaching a constant value of 1.2 after 20 years. NEP following insect defoliations and silvicultural thinning showed lesser changes than stand-replacing events, with decreases in the year of disturbance followed by rapid recovery. NEP decreased in a mangrove ecosystem following Hurricane Wilma because of a decrease in GPP and an increase in ER.

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CFEOR Outreach Highlights

Summary of a CFEOR Workshop on Groundcover Restoration

A CFEOR workshop on groundcover restoration was presented Thursday, November 18, 2010 at the Sandhill Lakes Mitigation Bank, Greenhead, FL. Presenters included: Bill Cleckley, Director, Division of Land Management and Acquisition, NWFWMD; Holly Ober, Assistant Professor, Dept. of Wildlife Ecology and Conservation, University of Florida; David Clayton, Environmental Scientist, NWFWMD; John Valenta, Associate Lands Manager, NWFWMD and Justin Davis, Fisheries and Wildlife Biologist, FWC. The workshop had over 50 attendees and workshop topics included upland groundcover habitat restoration, FWC management activities, habitat restoration on an old agricultural field and seed bank research plots. Attendees also received the CFEOR handbook on groundcover restoration. To learn more click here.

CFEOR represented along with other Florida forestry cooperatives in a tour with deans and executives from the University of Florida.

On November 4-5, 2010 Leda Kobziar, CFEOR Co-Director, represented CFEOR in a regional tour for University of Florida deans and recently appointed Jack Payne, Senior Vice President for Agriculture and Natural Resources at the University of Florida. The tour, hosted by the Florida Forestry Association, included brief presentations from various forestry research cooperatives including Conserved Forest Ecosystems: Outreach and Research Cooperative, Forestry Biology Research Cooperative, the Cooperative Forest Genetics Research Project as well as visits to different forestry operation sites throughout Florida.
Upcoming Events

- 15th Annual SW FL Invasive Species Conference, December 1, 2010 at the Florida Gulf Coast University in Ft. Myers. This free event is an exceptional resource for invasive species information for land managers and other specialists. Earn CEU’s in hands on workshops. For details and to register go to: http://www.floridainvasives.org/southwest/Conference2010/index.html

- Forest Stewardship Videoconference: Greenbelt Update – Conservation Use Assessments, December 14, 2010 2-4 pm, ET, G001 McCarty Hall, UF Campus, Gainesville, broadcast to UF-IFAS Extension facilities across Florida. For details and registration on-line go to: http://fsp-videoconference121410.eventbrite.com/

- Forest Stewardship Workshop: Invasive Exotic Plants and Their Control, January 12, 2011. 9 am - 3 pm ET, Trout Lake Nature Center, Eustis, FL. Lunch, materials, FDOACS pesticide applicator CEUs and SAF CFEs will be provided. For details and registration on-line go to: http://fspworkshop011211.eventbrite.com/

- CFEOR Tour of Green Circle Bio-Energy Plant, January 20, 2010, 10am – 12pm, Cottondale, FL. Details and registration go to: http://www.sfrc.ufl.edu/CFEOR/Upcoming20Events.html#green