Ecosystem services are the benefits that humans receive from the natural environment. Forest ecosystems and wildlife habitat provide many benefits such as food, fiber, nutrient cycling, clean water and recreation. Habitat management may be perceived as positive or negative by society depending on how people value the resulting changes to the ecosystem. Research is needed to assess the tradeoffs in ecosystem services that occur as a result of habitat management.

I am a PhD candidate in the CFEOR fellowship program at the UF, School of Forest Resources and Conservation (Figure 1.) working with CFEOR Co-directors, Dr. Damian Adams and Dr. Holly Ober. My research will assess how the presence of gopher tortoise habitat can indicate the habitats for other species and tradeoffs among wildlife habitat diversity. Ultimately, this research will be used to assess tradeoffs amongst related ecosystem services as well as assess the impact of landowner incentive programs that help provide gopher tortoise habitat.

To identify key wildlife habitats, wildlife presence locations for gopher tortoise (n = 4618), Florida black bear (n = 336) and red-cockaded woodpecker (n = 9695) were used. Additional environmental data came from existing sources including: land cover, vegetation type, fuels, soil, canopy closure, vegetation height, species richness, and canopy closure. Maximum entropy modeling was used to evaluate the known locations of wildlife and create models with probability of habitat occurrence.

All three models sufficiently predicted the probability of occurrence of potential habitat. Habitat distribution maps was created for each species using the probability of occurrence across the historic range of the longleaf ecosystem in Florida. A comparison of the distribution maps revealed some observable patterns; a high probability of tortoise habitat correlated with an increase in the probability of endangered red-cockaded woodpecker habitat, but a decrease in the probability of threatened black bear habitat (Figure 2).

This ongoing research identifies how the management for gopher tortoise habitat and longleaf restoration may impact overall species diversity; and current research will determine the related consequences to ecosystem services. While this study will not confirm a direct cause and effect relationship among forest management, habitat, or ecosystem services; it does provide new information on relationships among a diversity of wildlife species in relation to habitat conditions, providing a solid basis for further study on the benefits provided by ecosystem services.
Prior Prevalence of Shortleaf Pine-Oak-Hickory Woodlands in the Tallahassee Red Hills

Andre F. Clewell, Castanea 78(4):266-276. 2013

Shortleaf pine-oak-hickory woodlands provided the principal vegetation cover in the Tallahassee Red Hills prior to land clearing for plantation agriculture in the 19th century. Ample historical documentation and extant remnants of that community, including old-growth, support this conclusion. This woodland was maintained by surface fires and consisted principally of open stands of shortleaf pine, post oak, Spanish oak, black oak, mockernut hickory, and dogwood. The species-diverse and predominantly herbaceous ground cover was dominated by grasses, legumes, and composites. Coppice sprouting of trees and shrubs after fires was common. In the absence of fire, shortleaf pine-oak-hickory woodlands convert to oak-hickory forest with similar tree species composition and loss of herbaceous species. Within the past 130 years, nearly all stands of shortleaf pine-oak-hickory woodlands and oak-hickory forests have been extirpated or compromised beyond recognition by intrusions of offsite tree species that are typical of moist soils at less elevated landscape positions.

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Recent Research

Upcoming Events

- Conservation Site Assessment & Planning– Natural Areas Training Academy, Anytime February-March 2014 and two day field trip on March 18-19. For more information go to http://csap2014.eventbrite.com

- Cogongrass Workshop, January 14, 2014 from 9:00 am to 5:00 pm, UF/IFAS North FL Research and Education Center, 155 Research Road, Quincy, FL 32351. To be broadcast via Polycom to 6 other Florida locations. Details to come.

- 67th Society for Range Management Annual International Meeting, Technical Training and Trade Show will be held in Orlando, February 8-13, 2014. To learn more go to http://www.rangelands.org/orlando2014/index.html

- The 4th UF Water Institute Symposium, February 11 - 12, 2014 at J. Wayne Reitz Union, UF Campus, Gainesville, Florida. To learn more go to http://waterinstitute.ufl.edu/Symposium2014/index.asp

- Forest Stewardship Workshop: Longleaf Pine Forest Restoration & Management in the Santa Fe River Springshed, February 28, 2014 from 8:30 am – 3:00 pm at O’Leno State Park, 410 S.E. O’Leno Park Road, High Springs, FL. Learn more at http://sfrc.ufl.edu/extension/florida_forestry_information/events_calendar/files/longleaf_alachua022814_announcement.pdf
**Upcoming Events**

- **Ignition Planning & Prescribed Fire Techniques for Wildlife**
  *May 5-8, 2014* at the Cecil Commerce Center, 13561 Lake Newman Street, Jacksonville, Florida. This training combines classroom lectures, panel discussions, and field exercises on the use of Prescribed Fire as a management tool for a variety of wildlife and habitats. A full agenda and registration info is available on the chapter website: [http://fitws.org/](http://fitws.org/)

- **Mark your calendars-ACES: A Community on Ecosystem Services Conference**
  *will be held December 8-11, 2014* in Washington DC. For more information go to [http://conference.ifas.ufl.edu/aces/](http://conference.ifas.ufl.edu/aces/)

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**CFEOR Mission:**
To develop and disseminate knowledge needed to conserve and manage Florida’s forest as a healthy, working ecosystem that provides social, ecological and economic benefits on a sustainable basis.

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