Can wiregrass reproduce without fire?

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Limited wiregrass (*Aristida stricta* Michx.) seed supplies make it difficult for public and private land holders to establish new plantings. The growing-season fires that improve wiregrass seed set are difficult to use for consistent and successful seed production. Eliminating the fire requirement may benefit wiregrass seed producers. Through funding from the Northwest Florida Water Management District, we are testing cultural methods to improve reproductive yields without fire.

Wiregrass plants from the Econfina watershed were transplanted at a rate of 15 per each 1.2 x 1.8 m plot (6.7 plants m⁻²) at UF North Florida Research and Education Center (NFREC), Marianna in spring, 2007. The plots received no previous care other than minor, manual weeding. Treatments began in spring 2009. All plots received a single application of 56 kg ha⁻¹ nitrogen fertilizer, based on evidence that wiregrass productivity is nitrogen-limited (see *Updates Nov. 7, 2008*). The 2009 treatments were 1) Control with no treatment applied; 2) Mow once in March at a 10 cm stubble height; 3) Mow + Ash, where a single March mowing was followed by the application of 6,000 kg ha⁻¹ wood ash; 4) Burn, applied once in early March. Seed heads were harvested (cut with clippers) in late September through early October, at seed head maturity. After 4 to 6 weeks, the air-dried seed heads were weighed.

The data are presented below (Fig 1), with each box representing the 25th to 75th quartile and the line transecting each box representing the treatment median value. Coinciding with a previous field study, we found that removing past season vegetation (mowing or burning) improved seed head production. Although the 75th quartile was greatest with the Burn treatment, the greatest median value was with the Mow + Ash treatment. Others have reported growth advantages from using char-type products in crop production systems but the mechanism(s) behind our positive wiregrass reproductive response is still under study. Data on harvested seed germination and inorganic tissue composition are currently being evaluated. We may soon find that substituting wood ash or other charred materials for fire will benefit wiregrass seed producers when growing-season fire is not a viable option.
**Recent Research Findings**

**Winter Use of South Florida Dry Prairie by Two Declining Grassland Passerines**


Grassland-obligate birds are undergoing some of the steepest population declines of all North American passerines. Few studies have addressed these species' patterns of habitat use in their winter ranges in the southeastern United States. The dry prairie of south-central Florida constitutes one of the largest areas of contiguous grassland remaining within this region and during winter supports a diverse group of migratory grassland-obligate birds. Modern land-use of this region has altered the ecosystem's natural fire regimes and shifted the vegetative community away from graminoids and forbs toward overabundance of woody-stemmed species such as the saw palmetto (*Serenoa repens*). Simultaneously, the prairie's historic range has decreased with urban development and conversion to agriculture. In order to understand how these changes affect overwintering grassland birds, we documented the dry prairie's winter bird community and evaluated the effects of habitat characteristics and time since fire on the occurrence of the Grasshopper Sparrow (*Ammodramus savannarum pratensis*) and Sedge Wren (*Cistothorus platensis*), two winter residents. We surveyed birds via flush transects and used an information-theoretic approach to select models that best predicted the species' occurrence. Time since fire was the best predictor of the Grasshopper Sparrow both years of our study, and occupancy by the Grasshopper Sparrow was six times more likely if transects were burned within the previous year. The Sedge Wren favored longer intervals between fires, and its response to habitat covariates in the two years differed. These results highlight the need for dry prairie to be managed with natural (1–3 years) fire-return intervals to maintain wintering habitat for declining grassland birds.

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**Upcoming Events**

- **4th International Fire Ecology & Management Congress: Fire as a Global Process**  

- **UF Fisheries and Aquatic Sciences Seminar Series, Challenges of Sustaining Clean and Healthy Water for Communities: Emerging Chemical and Microbial Source Tracking Tools and Environmental Management**  

- **Climate and Sustainability Conference: Managing Climate Change with Sustainable Initiatives**  
  Dec. 4, 2009. Scientists, entrepreneurs and leaders from academia, industry and government will share research and development information on innovative solutions in alternative renewable energy technologies, policies, and resource management strategies that will help to mitigate the impact of climate change. Fort Myers, FL. http://lee.ifas.ufl.edu/AgNatRes/Sustainability/Climate_and_Sustainability_Conference.pdf
• **Best Management Practices (BMP) Training and Certification**  
  [http://lee.ifas.ufl.edu/Hort/HortClasses/BMP2009Agenda.pdf](http://lee.ifas.ufl.edu/Hort/HortClasses/BMP2009Agenda.pdf)

• **Natural Areas Training Academy: Conservation Site Assessment and Planning**  
  Dec. 8-10, 2009. The purpose of this workshop is to introduce the participant to assessment and planning techniques being successfully used in Florida. Ordway-Swisher Biological Station, Melrose, Florida. Go to [http://nata.snre.ufl.edu/](http://nata.snre.ufl.edu/).

• **The Florida Natural Resources Leadership Institute: Extension Education in Natural Resource Dispute Resolution and Collaborative Decision-making**  
  January 27, 2009 at 1:55 - 2:45 PM. Dr. Laila Racevskis, UF Department of Food and Resource Economics. 112 Newins-Ziegler Hall.

• **Florida Native Plant Society Call for Papers and Posters FNPS 2010 Conference First Notice**  
  The 2010 Annual Conference of the Florida Native Plant Society will be held in Tallahassee, Florida May 20-23. Scientific paper and poster sessions will be held Friday May 21 and Saturday May 22. The Call for Papers and Posters is attached. Please note that the deadline for abstracts is **February 1, 2010**. Contact Paul Schmalzer at paul.a.schmalzer@nasa.gov

• **Sustainable use and depletion of natural resources: lessons for the energy system**  
  Feb. 24, 2009 at 1:55 - 2:45 PM. Dr. Stephen Humphrey, UF School of Natural Resources and Environment. 112 Newins-Ziegler Hall.

• **Forest Stewardship Property Tour at Saturiwa Conservation Area, Property of Mike Adams, 2009 Forest Stewardship Landowner of the Year, St. Johns County.**  

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