Managing At-Risk Species on Southeastern Public Lands: A Case Study on Embedded and Ephemeral Wetlands in Florida

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MAIN QUESTIONS OR ISSUES THAT YOU ADDRESSED

- Why is managing for at risk species in southern pine grasslands and embedded wetlands on public lands important?
- What are Florida examples of success stories?
- What are obstacles to at risk species management on public lands?
- What are keys to success?

LOCATION AND ECOSYSTEM INVESTIGATED

The National Wildlife Refuge Association, in partnership with the US Forest Service and US Fish and Wildlife Service completed an Assessment of At Risk Species on Southern National Forests, National Wildlife Refuges and Other Public Lands (https://www.fws.gov/southeast/pdf/report/nwra-at-risk-report-2017.pdf), finding southern pinelands were a hot-spot for at risk species. Pineland ecosystems throughout the Southeastern US have been shaped by fire frequency and depth to the water table. In many cases fire return intervals less than five years produced grass and grass-like dominated wetlands and upland communities. Modern prescribed fire programs in Florida have been focused on upland plant communities during wetter conditions. These wetter conditions reduce the risk of escaped fire and provide enhanced smoke management capabilities. Unfortunately, this has also excluded fire in many embedded and ephemeral wetland communities within the SE pine ecosystem. Fire excluded wetlands have shifted to shrub and swamp forest communities resulting in degraded habitats for many endemic plants and animals. Examples of at risk species include Florida bog frog, gopher frog, ornate chorus frog, pine barrens treefrog, reticulated flatwoods salamander, tiger salamander, and chicken turtle. Restoring short return interval fire to these imperiled wetlands will require significant resources and innovations in current prescribed fire programs.

This research was presented at the 7th International Fire Ecology and Management Congress, which was held in Orlando, Florida, November 28-December 2, 2017 and was hosted by the Association for Fire Ecology, in cooperation with the Southern Fire Exchange.

KEY FINDINGS OF YOUR RESEARCH

Success Stories

In the Florida panhandle the Gulf Coastal Plain Ecosystem Partnership (GCPEP) is working to restore embedded and ephemeral wetlands using an integrated management approach. The partnership uses heavy machinery, intensive labor, and chemical treatments, in conjunction with prescribed fire to restore wetland habitats and site conditions to a plant community structure that can be maintained by frequent Rx fire. The Wetland Ecosystem Support Team, is a strike team that will increase the amount of prescribed fire and other restoration actions that occur across the GCPEP landscape. The partnership includes private organizations, businesses, and local, state, and federal agencies who provide enhanced resources needed for successful and timely restoration of proper fire return intervals on ephemeral and embedded wetlands.

On the Ocala National Forest, the US Forest Service is utilizing a unique team approach along with an established short return fire interval program on upland habitats to reintroduce fire to embedded wetlands. A management team led by the Fire Management Officer, Fuels Management Specialist and the Forest Biologist works cooperatively to develop goals and strategies that include burning wetland habitats. Prescriptions are broadened with clear objectives that include wetland parameters. These parameters include managing wetlands as a fire-maintained community, providing a diverse prey base and enhanced forage for herbivores. The team incorporates ecological goals for both uplands and wetlands along with key components to monitor and measure results. This approach will help ensure that both wetlands and uplands are benefitting from burns.

The St. Johns River WMD began efforts in 2000 to reintroduce fire as a land management practice on the Julington Durbin Preserve in Jacksonville. This preserve is located within the wildland urban interface with hundreds of residences and I-95 just to the east. Fire had been excluded from both upland and wetland habitats for several decades. Initial efforts included the 2004 mechanical removal of sand pines planted by the previous owner. Prescribed fires were preceded by a robust public relations effort including kiosks and posted signs on the popular passive recreation area. Experienced burners using precise prescription parameters have conducted a series of restoration burns on both upland and wetlands within the preserve. Each successive burn is "moving the needle" a little each time. As of 2017, after five prescribed burns, both upland and wetland habitats have been restored to short return fire interval communities.

HOW DID YOU ANSWER THE MAIN QUESTIONS OR INFORM THE ISSUES?

Obstacles

- In order to function, isolated wetlands need to burn when they're dry. These conditions increase the risk of escaped fire and/or smoke management issues.
- Human population growth, habitat fragmentation and altered hydrology have also adversely impacted wetlands.
- Restoring proper fire return intervals requires multiple actions over an extended time frame.
- Many landowners lack resources to restore proper fire intervals on embedded wetlands.
- Severely degraded wetlands will require integrated management including clearing, muck removal and/or hydrological restoration before they can be burned.
- The current knowledge base is inadequate to implement a successful restoration program.

HOW MIGHT/WILL IT INFLUENCE FIRE MANAGEMENT DECISIONS OR PRACTICES?

Keys to Success

- Recognize that we all have a wildlife stewardship obligation.
- The state of Florida recognizes the importance of prescribed fire. Florida Law states "… The application of prescribed burning is a land management tool that benefits the safety of the public, the environment… Most of Florida's natural communities require periodic fire for maintenance of their

ecological integrity. Prescribed burning is essential to the perpetuation, restoration, and management of many plant and animal communities."

- Expand the concept of prescribed burn teams to include more partners during the planning, execution and evaluation of all Rx burns.
- In addition to fire, selective mechanical and/or chemical treatments are important restoration tools when wetlands have been impacted by multiple factors (fire exclusion, altered hydrology, habitat fragmentation, and other human disturbances).
- Take advantage of wildfires and use them as the first step in restoring desired fire return interval. • Keep burning landscapes already maintained by fire at proper fire return intervals. • Demand research that is management oriented. Partner with researchers throughout the planning, execution and evaluation of each prescribed fire.
- Prepare a range of prescriptions in advance to take advantage of every burn opportunity and always burn within prescription.
- Have flexibility within each prescription to adjust operations during the burn in order to meet objectives, provide safely and maintain control of your fire.
- Have clear measurable objectives and methods that will allow you to achieve those objectives.
- Include smoke management plans and mitigation actions to address smoke management issues.
- Vision: Have a vision of both fire restored and fire maintained habitats and how they will benefit wildlife, the environment and people.

Who Is the Main End-user of Your Research?

- Fire practitioners
- Forest Service biologists
- Land managers on public lands

For more information or advice on fire application for at risk species management practitioners can reach out to: Vernon Compton - Longleaf Alliance, vernon@longleafalliance.org, Carrie Sekerak, csekerak@fs.fed.us , David Quisenberry, Mike Drayton - US Forest Service, Steve Miller - St. Johns River WMD, srmiller@sjrwmd.com , James Schortemeyer - Florida Fish and Wildlife Conservation Commission, schortfire@aol.com

Congress Session

Fire Management & Use