

forest, at least during some portion of their life cycle. The open-canopied species includes 4 birds, 2 mammals, 2 amphibians, and 6 snakes.

We review existing information on the at-risk species and conclude that there is little direct reliance on specific plant species but rather a strong need for the habitat structure created when longleaf pine and associated ground layer plants interact with frequent fire. In addition, some of the at-risk vertebrates have requirements that seem to be satisfied by broad categories of plants (pines, legumes, grasses, etc.) rather than specific species. However, some plant species indirectly promote open-canopied structure because of their propensity to carry fire. We highlight habitat requirements of the gopher tortoise and discuss information on habitat structure that would improve management for this species.

Although conservation biologists and land managers have long understood the relationship between habitat structure and many of the at-risk species, ecosystem-level

management is not commonly discussed. By taking this approach we focus attention on the most immediately useful types of land management actions that are likely to improve habitat. It will also aid in prioritization of conservation actions and to provide a basis for ranking sites with disparate current conditions, for example recently planted longleaf pine plantation compared to mature second-growth longleaf forests that have been subjected to fire-exclusion. We suggest that estimating time and effort required to create an open-canopy habitat will aid in prioritizing conservation efforts for at-risk vertebrates. It is apparent that maintaining vital structure of existing high-quality forest stands is critical for perpetuation of at-risk species. In addition, reclaiming fire-excluded degraded stands may often be worth the cost of restoration because forest structure will likely be re-established sooner than if the area was cleared and replanted. Planting longleaf must happen to recover this once-dominant ecosystem but many conservation benefits will be lost if existing stands of mature trees are not maintained.

Ivory-billed Woodpecker Update

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Abstract

In 2005, the Cornell Lab of Ornithology announced the discovery of Ivory-billed Woodpeckers in the Big Woods of eastern Arkansas. Following that announcement, Geoff Hill and two student took a kayaking trip down the Choctawhatchee River in Florida and heard and sighted

Ivory-billed Woodpeckers in the large forested wetland along this river. Over the past three years, Dr. Hill and his colleagues have amassed a large body of evidence to support their claims that ivorybills still persist in this remote region of Florida.

Long-term Research at the J.W. Jones Ecological Research Center: Pursuing Emergent but Unexpected Outcomes

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Abstract

Long-term research focused on the longleaf pine forest at the Joseph W. Jones Ecological Research Center is guided by the Center's mission "...to understand, to demonstrate, and to promote excellence in natural resource management and conservation on the landscape of the southeastern coastal plain." Explicit in this mission is a goal to understand the basic ecology of the longleaf pine ecosystem, but implied goals are to also develop direct, reciprocal linkages between research and operational resource management and to make this information available to a wide audience. One important

lesson realized from pursuing long-term research projects at the Center is to look for and be receptive to unexpected results and relationships. These unexpected outcomes have often provided the most interesting questions that guide additional research and can also have significant influence on practical management applications. Some specific examples of emergent outcomes and their impact will be presented in the context of long-term projects exploring ecological silviculture approaches, prescribed fire management, carbon cycling and sequestration, and restoration of biodiversity.