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If you want to probe the deep, dark secrets of Bachman's Sparrow biology, it's best to use light from a flaming torch—preferably the type of torch used to set a prescribed fire.

The May/June 2008 issue of *Birding* highlights new research on this enigmatic species. A key finding of this recent research underscores the importance of frequent prescribed fire in maintaining suitable habitat conditions.

The open Southeastern savannas in which this endemic sparrow evolved were once dominated by longleaf pine and once spanned an estimated 90 million

acres, stretching from Virginia to central Florida to Texas. In ancient times, fires set by Native Americans and triggered by lightning limited growth of hardwood brush and trees in these forests. When longleaf forests are burned with sufficient frequency, grassland and forest elements merge in a beautiful park-like setting (see image on p. 43 of article). Along with the declining Bachman's Sparrow, these once-vast forests supported Northern Bobwhite, Red-cockaded Woodpecker, Loggerhead Shrike, Henslow's Sparrow, and Eastern Meadowlark, along with gopher tortoise and indigo snake.

Within longleaf forests, numbers of Bachman's Sparrows can change surprisingly quickly without obvious changes to the forest. We have found that counts of Bachman's Sparrows peak in the first year following a prescribed fire, are lower in the second year, and level out by the third year. Other researchers have noted similar trends. These rapid changes occur because habitat suitability for this ground-dwelling species is more affected by the vegetation structure at or below knee level than by the overstory of pines.

Bachman's Sparrows prefer to walk (or run) rather than fly, and this lifestyle is best accommodated when there is little clutter at ground level. When a longleaf savanna is burned, the vegetation grows back fresh, taut, and erect within a matter of weeks, leaving bare ground below while providing an umbrella of cover many inches above. As the months tick away, the vegetation become less vigorous, and coarse, senescent stalks of grass fold downward over the ground along with thousands of fallen pine needles and oth-



er debris. Empty spaces at ground level become cluttered about 18–24 months after a burn, and a ground-foraging animal may not have the room needed to forage efficiently.

In addition, more than 80% of the nests we find are constructed in areas burned within the past 12 months, even though we search areas burned more than 12 months previously with equal vigor. Nests tend to have a patch of bare or very sparse vegetation facing the entrances, and our measurements of grass biomass at nest sites are roughly half the measurements taken just 20 meters away. Our winter counts of sparrows also are twice as high at sites that have been burned most recently.

To prevent the Bachman's Sparrow and its lovely song from disappearing further, a focus on management of public lands is in order. In Florida, for example, burn frequencies are not sufficient to maintain this species on many public lands, and it is estimated that about \$100 million needs to be spent just to retire the fire deficit that has accumulated over the years from the lack of prescribed fire. Merely purchasing a gorgeous pine forest won't be enough because three years later, the sparrows on the forest will be packing their bags unless prescribed burning is conducted.

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