

Wildlife, Habitat, and Prescribed Fire in the Southeastern Coastal Plain: Past, Present, and Future

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Abstract.—Fire has been an imperative ecological force that has shaped the natural history and culture of the Southeastern Coastal Plain. In the past, humans have influenced the “natural” role of fire in the southeast, first by Native Americans, then by Spanish and other European settlement, and finally by modern culture. As human culture developed, fire, and how it influenced wildlife populations on both the landscape and local scales, became more and more removed from the set of environmental conditions that originally allowed it to shape the biota of the southeastern landscape. Presently, broad scale habitat fragmentation from urbanization, agriculture, and intensive forestry, has eliminated fire from much of the southeast. Also, at the present time, virtually all of the vertebrates in the southeast that are declining, threatened, or endangered require open forest conditions maintained by frequent fire. In the future, most fire in the southeast will probably be relegated to isolated fragments of public lands, ecological preserves, and private hunting plantations. However, there are some developments that have emerged from research, as well as management experience and common sense, that have promise. For example, fire ecologists and managers have learned to pay respect to the use of fire is emerging. Such an approach transcends traditional single species, game management objectives, and incorporated consideration of how keystone native plants, arthropods, and other nongame vertebrates, respond to variation in seasonal fire applications, as well as to variation in fire return intervals.

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The Role of Fire in Riparian Zones of the Northern Rocky Mountains

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Abstract.—While the importance of riparian systems in the northern Rocky Mountains as sources of productivity and diversity is recognized, there is little information about the interaction between pattern and process. To sustain these areas, we need to understand the characteristics of disturbance processes and how they result in patterns in these systems. There is mounting evidence that simply protecting riparian areas from fire and other disturbances results in unsustainable riparian conditions and deterioration of habitat for wildlife. Recent high-intensity fires, which in the past were probably uncharacteristic of the upland vegetation surrounding riparian zones, can result in soil erosion and sediment loading that can damage aquatic systems. However, low-intensity fires play an important role in determining composition and structure in upland and streamside vegetation, and consequently in contribution of vegetation debris to the aquatic system. Without low-intensity fire, uplands and streamsides succeed to shade-tolerant coniferous species, with consequently reduced dominance or loss of early-successional deciduous trees and shrubs. These altered conditions can have important consequences for habitats of terrestrial and aquatic fauna.

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