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AREA AND DISTRIBUTION OF FORESTED HABITAT WITHIN THE MISSISSIPPI ALLUVIAL VALLEY

Forest fragmentation in the eastern United States may limit the distribution of neotropical migratory forest birds. Increased awareness of the plight of neotropical migratory birds has resulted in creation of the interagency Neotropical Migratory Bird Conservation Program, also known as "Partners in Flight." The Southeast Working Group of the program has identified bottomland hardwood (BLH) forests as a habitat of regional concern; more than a dozen bird species, tentatively identified as species requiring attention within the Mississippi Alluvial Valley (MAV), depend on these forests. When flooded in winter, bottomland hardwood forests also provide important habitat for waterfowl, especially mallards (*Anas platyrhynchos*). Flood control has isolated and fragmented BLH forests as they were converted to agriculture. We used satellite imagery to assess the vegetative cover composition, area, and distribution of the remaining BLH forests within the MAV.

EXTENT OF FOREST REMAINING

Using 30-m resolution Landsat thematic mapper imagery from spring and fall 1992, we classified the forested habitat within the Mississippi Alluvial Valley (Fig. 1) into five primary forest types: (1) cypress-tupelo-willow—forests subject to prolonged and frequent inundation, (2) wet BLH—forests subject to regular, but not prolonged, inundation, (3) dry BLH—forests subject to less frequent inundation, (4) thin-edge—forests with open canopies or edges of forests located next to open habitat, and (5) other forests—orchards, pines, and unknown forest types. We classified forested habitats within 15-minute or 30-minute areas of the MAV. A composite of the completed classified habitats was then made for each state within the MAV and the areas of forest were calculated.

A total of 2.7 million ha of forested habitat remains within the Mississippi Alluvial Valley, primarily within Louisiana and Arkansas (Table 1). Although no accuracy assessment of these data has yet been undertaken, and the total area of interest differs slightly from previous forest cover estimates within the MAV, comparison with past forest cover estimates (Fig. 2) suggests that forest loss within the MAV has slowed. Several factors probably account for this trend: much of the remaining forest is on land unsuitable for agriculture, from 10% to 20% is publicly owned, and competitive timber prices and government incentives, such as Wetland Reserve Program, have encouraged private landowners to plant or retain forests.

DISTRIBUTION OF FOREST PATCHES WAS DETERMINED

Discrete forest patches were delineated by combining all forest types and by using a spatial filter to fill in small openings and join forest fragments separated from other fragments by less than 90 m. Similarly, forested areas connected by linear forest stretches of less than 90 m were separated into disjoint forest patches. Using these criteria to describe forest patches and eliminating patches smaller than 1 ha, we assessed the distribution of forest patches (Table 2). The distribution of forest patch sizes within the MAV is highly skewed toward small patch sizes. As with the total area of forests, most large patches were within Arkansas and Louisiana. Individually identifiable patches were occasionally nearly contiguous, thereby increasing the effective patch sizes.

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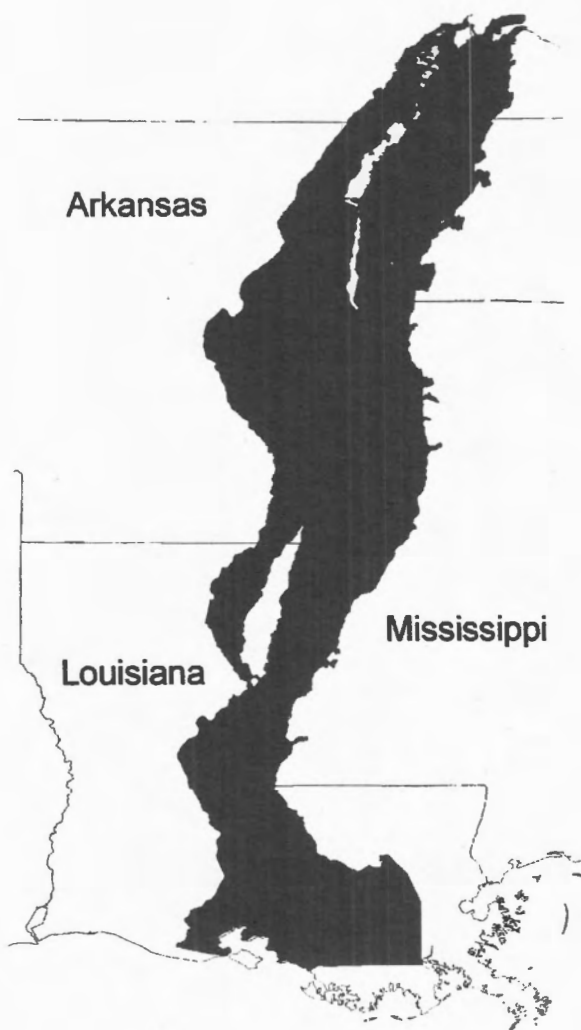


Fig. 1. Mississippi Alluvial Valley boundary used to determine forested habitats.

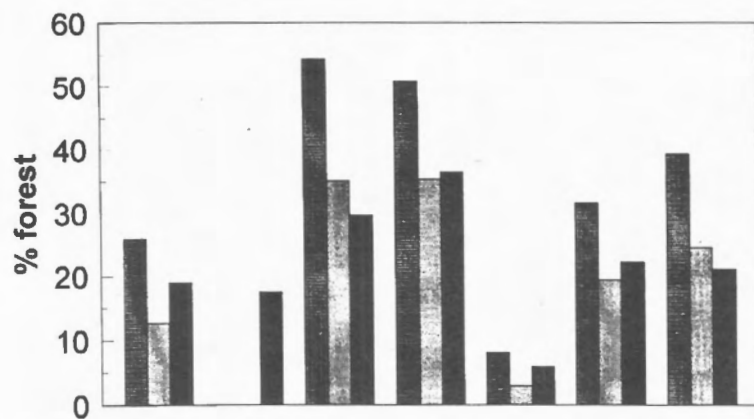


Fig. 2. Distribution of forested habitats among states within the Mississippi Alluvial Valley over time. The area of the alluvial valley differed slightly among studies.

	Arkansas	Illinois	Kentucky	Louisiana	Missouri	Mississippi	Tennessee
1957	26.0	no data	54.4	50.9	8.2	31.6	39.3
1977	12.7	no data	35.1	35.3	3.0	19.4	24.6
1992	19.0	17.5	29.7	36.4	6.0	22.3	21.2