



## *Patuxent Science Meeting 2004 Poster Abstract*

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### **Bird Conservation on Reforested Bottomlands: Landscape Context is Important**

Daniel J. Twedt and Scott G. Somershoe

In the Lower Mississippi Valley, over 300,000 acres of agricultural land have been recently reforested. Restoration adjacent to large tracts of existing forest has been advocated for conservation of forest dwelling birds because it increases forest core (i.e., areas distant from hostile agricultural or urban habitats) and thereby benefits forest interior birds. However, the effect of this placement on bird colonization of reforested sites and their subsequent productivity is largely unknown. We assessed avian densities and nesting success on reforested sites within two different landscape contexts: (1) sites that abutted large tracts of mature bottomland forest or (2) sites adjacent to agricultural fields that were distant from large tracts of mature forest.

From mid-April to early August, we monitored avian abundance and nesting success on 36 reforested agricultural fields: 10 sites during 2000, 12 sites during 2001, and 14 sites during 2002. Abundance was monitored using transect counts (2000) or spot-mapping (2001, 2002). Grassland birds (Red-winged Blackbird, Dickcissel, Eastern Meadowlark, Northern Mockingbird, and Mourning Dove) characterized sites that abutted agricultural fields. White-eyed Vireo and Indigo Bunting, birds typical of shrub-scrub habitats, characterized sites adjacent to mature forests. Brown-headed cowbirds were more abundant near mature forests. Although the overall parasitism rate was low (<4%) regardless of landscape position, those species that characterized reforestation abutting mature forest suffered higher levels of parasitism (White-eyed Vireo [36%]; Indigo Bunting [32%]).

We located over 2400 nests that were monitored approximately every 3 days to estimate their daily probability of survival. Of 2173 nests that had eggs or chicks, 607 fledged young. Nest successes (Mayfield) were: Yellow-breasted Chat (37%), Orchard Oriole (36%), Indigo Bunting (29%), Northern Cardinal (27%), Yellow-billed Cuckoo (26%), Dickcissel (18%), Mourning Doves (17%), Northern Mockingbird (14%), Red-winged Blackbird (14%), and Common Grackle (6%). Predation was the primary cause of nest failure. Generalized nest survival of all songbirds (~17%) was similar on sites adjacent to agricultural fields and on sites abutting forests.

Although vegetation height on reforested sites varied with the age of the site, mean tree height did not differ between landscape positions. Tree density, however, was greater near mature forests than near agricultural fields. Restoration that abutted existing forest accelerated colonization by forest birds but nesting success was similar on reforested sites regardless of their landscape position. Reforested sites were population sinks for 5 species (Mourning Dove, Yellow-breasted Chat, Dickcissel, Red-winged Blackbird, and Common Grackle); notably 3 of these species are characteristic of the early "grassland" stage of reforestation. Conversely, reforested sites were population sources for 5 other species that are more commonly associated with shrub-scrub or "forest" stage of reforestation (Yellow-billed Cuckoo, Northern Cardinal, Indigo Bunting, Northern Mockingbird, and Orchard Oriole). Thus, reforestation that is isolated from existing forest attracted fewer birds characteristic of forested habitats and were population sinks for those species that commonly nested on these sites. Conversely, reforested sites adjacent to mature forest attracted more shrub-scrub and forest dwelling birds and were more likely to be population sources for these species.