THE EFFECT OF ADJACENT UPLAND HABITAT ON PREDATION OF ARTIFICIAL GROUND NESTS IN RED MAPLE SWAMPS

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ABSTRACT

Wetlands are commonly regulated by federal and state laws, but the bordering habitat often is not. Red maple swamps, a common freshwater forested wetland in southern New England, represents important breeding habitat for some of these migratory birds. Many of these migratory birds are experiencing declines that have been attributed to low nesting success near a habitat edge.

If adjacent upland habitat does have an affect on birds breeding in the wetland, it is important to know at what distance nesting success is improved. I examined the effect of the type of adjacent upland habitat and distance from the habitat edge on predation of artificial ground nests in red maple swamps during the breeding season in 1993 and 1994.

Artificial ground nests were placed in red maple swamps with adjacent forested and nonforested upland along transects 60 m apart and at 0-m, 60-m, 120-m, and 180-m from the wetland edge. Ground coverage, canopy coverage, shrub stem density, tree density, foliage volume, and surface moistness, were measured at the end of each breeding season.

Predation was significantly higher ($P = 0.0012$) in swamps with nonforested upland in 1993, but significantly lower ($P = 0.0008$) in 1994. Predation significantly declined between 0 and 180 m in the swamps

with forested upland (P = 0.0057) and the swamp with nonforested upland (P = 0.0179), but there were increases in predation at the 60-m and 120-m distances that confounded the general declining trend. When all the sites are combined in 1994, predation significantly declined (P = <0.0001) between 120 m and 180 m from the edge.

Perhaps the wetland/upland edge is more important to nesting success than the forested/nonforested edge and buffer zone widths have little influence on nest predation. Those birds that breed close to the wetland border may be at higher risk of predation than those that use the interior of the wetland. It would be important to protect all red maple swamps for those birds that use them for breeding habitat.