

Forested buffers along riparian zones (riparian buffers) are a common feature in agricultural and forested landscapes throughout North America. While the primary function of riparian buffers is to protect water quality and fish habitat, they may also provide valuable breeding habitat for other organisms. This study was designed to investigate the conservation value of riparian buffers and riparian forest to breeding birds along streams and small rivers in the Acadian forest of mainland Nova Scotia.

This study attempted to answer three main questions: Do forest bird guilds and individual species abundances differ between riparian and upland areas? Do riparian buffers maintain similar bird assemblages and species abundances as riparian references? Are bird assemblages and species abundances related to buffer width?

Birds were surveyed in 2005 and 2006 using 200-300 m transects for three treatments: riparian buffers, riparian references, and upland references. In 2005, birds were surveyed once in riparian buffers (n=12), riparian references (n=8) and upland references (n=9). In 2006, birds were surveyed 3 times in riparian buffers (n=15), riparian references (n=15) and upland references (n=15). In addition, forest structure and site features were measured within the first 30 m of streams for riparian sites and within the first 30 m of survey transects for upland sites. Additional visits were made in 2006 to collect additional breeding evidence.

Abundances of individual bird species and ecological guilds, with a special emphasis on species of conservation concern, were compared among treatments using densities of potential breeding pairs calculated from detections of birds located within 30 m of study transects. As well, forest structure was compared among treatments.

Most forest structure variables were similar among treatments. However, riparian references had a greater basal area of coniferous trees than upland sites, and greater canopy cover than riparian buffers. Bird assemblages showed differences between treatments with riparian buffers having more open-edge species than references. Bird assemblages were fairly similar between riparian and upland references. Buffer width, and not forest structure, best explained abundances of total potential pairs, species of conservation concern as a group, and Golden-crowned Kinglets, although these relationships were relatively weak. Species of conservation concern as a group had consistently higher abundances in buffers ≥ 40 m wide and as such buffers of this width are recommended to conserve breeding birds in mainland Nova Scotia.

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