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Abstracts

FEATURE ARTICLES

A PRODUCTIVITY MODEL FOR PARASITIZED, MULTIBROODED SONGBIRDS LARKIN A. POWELL^{1,3} AND MELINDA G. KNUTSON²

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Abstract. We present an enhancement of a simulation model to predict annual productivity for Wood Thrushes (*Hylocichla mustelina*) and American Redstarts (*Setophaga ruticilla*); the model includes effects of Brown-headed Cowbird (*Molothrus ater*) parasitism. We used species-specific data from the Driftless Area Ecoregion of Wisconsin, Minnesota, and Iowa to parameterize the model as a case study. The simulation model predicted annual productivity of 2.03 ± 1.60 SD for Wood Thrushes and 1.56 ± 1.31 SD for American Redstarts. Our sensitivity analysis showed that high parasitism lowered Wood Thrush annual productivity more than American Redstart productivity, even though parasitism affected individual nests of redstarts more severely. Annual productivity predictions are valuable for habitat managers, but productivity is not easily obtained from field studies. Our model provides a useful means of integrating complex life history parameters to predict productivity for songbirds that experience nest parasitism.

Key words: American Redstart, Brown-headed Cowbird, productivity, seasonal fecundity, simulation model, Wood Thrush.