Habitat Use by Six Obligate Shrubland Bird Species Along Powerline Rights-of-Way in the Champlain Valley, VT

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Wildlife species that rely on early successional habitat are showing long-term region-wide declines, including songbirds such as Eastern Towhee (*Pipilo erythrophthalmus*), Field Sparrow (*Spizella pusilla*), Prairie Warbler (*Setophaga discolor*), Blue-winged Warbler (*Vermivora pinus*), Golden-winged Warbler (*Vermivora chrysoptera*), and Brown Thrasher (*Toxostoma rufum*). All 6 of these species are listed as Species of Greatest Conservation Need on 3 or more of the New England state's Wildlife Action Plans and the Golden-winged Warbler is currently under review for federal listing. In areas where vegetation structure is actively maintained in early successional stages, such as powerline rights-of-way (ROWs), there is an opportunity to provide habitat for these species over long time frames. This study focuses on the habitat use of these early successional bird species in the Champlain Valley in Vermont along powerline ROWs. Thirty-four sites determined to include potential suitable habitat were established along ROWs. At each site during the breeding season, trained citizen scientist volunteers used a spot-mapping technique to document species distribution patterns along transects at all sites. Where focal species were encountered, vegetation cover types were recorded every 20 meters. Model selection and multimodel inference were run for each species including additive and interactive model combinations of landcover covariates where AICc scores were used to rank the models. Results indicated that the brush*grass model displayed the best fit with Eastern Towhee and Prairie and Blue-winged warbler abundances (all $p<0.05$). The brush*herbaceous model showed the best fit with Field Sparrow abundance ($p<0.05$). The wetland+grass model ($p<0.01$) and the brush*grass model ($p<0.001$) both fit Golden-winged Warbler abundance, and the herbaceous cover model ($p<0.05$) provided the best fit for Brown Thrasher abundance. The findings from this study will help determine species-specific habitat use to improve management practices that could benefit these declining species.