

An assessment of avian richness and relative abundance at Green Wing Environmental Laboratory, Lee County, Illinois

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The Turkey Vulture was documented during the breeding season at the Green Wing Environmental Laboratory during the authors' research. Eric Walters took this photo at Lincoln Trails State Park, Clark County, 3 April 2004.

Abstract

We measured avian richness and relative abundance at Green Wing Environmental Laboratory (GWEL), a biological field station which totals 1.7 km² of wooded and wetland habitats in northcentral Illinois, from September 2001 through June 2002. We completed a total of six point count survey routes (two fall migration, one winter, two spring migration, and one summer breeding season), three waterfowl surveys, and two nocturnal surveys. We recorded 4,440 birds of 140 species, including 62 species of North American Migrants, 59 Neotropical Migrants, and 19 species of Permanent Residents. Richness and abundance were greatest during migration, intermediate during the breeding season, and lowest in winter. Our sampling effort during this project was relatively small, nevertheless avian richness was high. Blue Jays and American Crows were the most frequently encountered, as well as the most abundant species. The richness of the avian community suggests to us that GWEL may be functioning as a "habitat island" within a Midwestern landscape matrix dominated by agricultural row crops.

Introduction

Green Wing Environmental Laboratory (GWEL) is a biological field station located near the city of Amboy, Lee County, Illinois, in the northcentral part of the state (41°41'54"N and 89°16'33"W) and is associated with the Organization of Biological Field Stations. This site, acquired by Augustana College, Rock Island, Illinois, in the early 1990's, totals ca. 1.7 km² of upland and lowland forests and wetland habitat (Fig. 1). Historically, habitat at this site has been relatively undisturbed, except for two areas (~1 ha each) modified for agriculture (corn field) and recreation (baseball field and a horse stable). These have since been abandoned and the corn field is now a cattail marsh, due to levee construction during its agricultural use that favored the development of a permanent pond. The recreational area is currently old field habitat. Most of the site consists of undisturbed black and bur oak forest, willow and cottonwood tracts, sedge meadows, and small pot-holes and streams (B. Dziadyk, pers. comm.). Little is known about the natural history of GWEL. Several current studies are underway that are aimed at

describing its vascular flora and amphibian diversity. Prior to this study, nothing was known about the avian fauna at GWEL.

Knowledge of the avian community at GWEL is important in several respects. First, relatively little wetland, native forests, or prairie habitat are found in northcentral Illinois. It is estimated that European settlement has reduced these habitats by 99% and that less than 0.1% of high-quality natural areas remain today (Levin 2000). What remains needs to be preserved and understood for its biological value. Second, avian biodiversity in the United States is threatened in several ways. Results from the Breeding Bird Survey suggest that 25% of United States bird species are in decline or suspected of being in decline (Anonymous 2002). This, coupled with the fact that little native habitat remains in the Midwest, prompts the need for baseline ecological studies in regions of relatively undisturbed habitat and where no previous information can be found regarding avian diversity. To address these needs, we assessed species richness and relative abundance of the avifauna at GWEL. This information can be used in order to better understand avian population dynamics in the upper Midwest.

Methods

We conducted point counts along a 13-station route (Fig. 1) and repeated these counts 6 times in the early fall (3 September 2001), late fall (10 October

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