

Illinois Breeding Bird Population Trends: 1980 – 2006

By James R. Herkert

Introduction

The North American Breeding Bird Survey (BBS) is a roadside survey of birds conducted annually in the continental United States and southern Canada (although some routes have recently been added in Alaska and northern Mexico). The survey program was designed by Chandler Robbins and his colleagues at the Migratory Bird Population Station (now the Patuxent Wildlife Research Center) in Laurel, Maryland in the 1960s (Sauer et al. 1997). The survey program was field tested during 1965, and the North American BBS was formally launched in 1966 with the running of 533 routes in the eastern U.S. and Canada (Sauer et al. 1997). After its launch, the program continued to expand and by 1968, 2000 routes had been established across the contiguous 48 states and southern Canada (Sauer et al. 1997). The surveys are conducted during the peak of the nesting season in June and consist of 24.5 mile long routes along secondary roads in which experienced observers stop at 0.5 mile intervals along the route and record all the birds seen or heard during a three-minute period. The primary objective of the BBS has been the estimation of population change for songbirds. The data have many other potential uses, however, and researchers have recently used BBS data to show how bird species respond to land use changes (e.g., Murphy 2003) or how birds respond to large-scale conservation programs such as the Conservation Reserve Program (e.g., Veech 2006). BBS data also play an important role in identifying bird species of con-

cern, such as Audubon's Watch List (National Audubon Society 2007) or the U.S. Fish and Wildlife Service's Birds of Conservation Concern list (United States Fish and Wildlife Service 2002).

Within Illinois the BBS was initiated in 1966 with the running of 15 of the state's 64 initial routes. The number of routes within Illinois remained at 64 until 1993 when another 17 routes were established. Nineteen more routes were added in 2001 bringing the current total of routes in the state to 100, a number that is exceeded by only three other states (Texas, California, Colorado).

Here I use data from the BBS for the period 1980-2006 to assess recent population trends of Illinois birds and also to evaluate life-history traits that are associated with these trends. I used two life-history groupings of birds, one based on species-habitat associations (grassland, wetland/open water, shrubland/early successional, woodland, and urban) and another based on migratory strategies (long-distance migrants, short-distance migrants, and permanent residents). Assignment of birds to groups followed the classification system developed for Midwestern BBS data by Herkert (1995), with supplemental information extracted from Sauer et al. (2007). Within each life-history category each bird species was assigned to only one group. Short-distance migrants included species that breed in Illinois and spend their non-breeding period in other areas of the United States. Long-distance migrants included species that breed in Illinois and

spend their non-breeding period primarily south of the United States. Permanent residents included species that breed and winter extensively in Illinois. I limited my comparisons to species that have been encountered on at least 14 BBS routes within Illinois between 1980-2006. Estimates of Illinois breeding bird population trends used in this analysis were obtained from the BBS Website (<http://www.mbr-pwrc.usgs.gov/bbs/>) and are shown in Table 1.

Fifty-nine of the 101 (58%) Illinois breeding bird species examined (Table 1) had increasing population trends between 1980-2006. The Eurasian Collared-Dove (+144.2%/year), Wild Turkey (+21.7%/year), Sedge Wren (+19.5%/year), Turkey Vulture (+14.3%/year), and Great Egret (+14.2%/year) were the five species that showed the greatest estimated population increases within Illinois between 1980-2006. Bobolink (-9.5%/year), Savannah Sparrow (-7.8%/year), Grasshopper Sparrow (-6.6%/year), Red-headed Woodpecker (-5.6%/year), Kentucky Warbler (-4.6%/year) and Loggerhead Shrike (-4.3%/year) exhibited the greatest estimated statewide declines during this interval (Table 1).

The comparison of mean trends among guilds showed that grassland birds had the worst mean trend, and were the only guild with an overall mean negative trend within Illinois (Table 2). The grassland bird guild also had the lowest percentage of increasing species (Table 1), with just 10% of the grassland species showing positive trends in the state.