Integrating the MAPS Program into Coordinated Bird Monitoring in the Northeast (U.S. Fish and Wildlife Service Region 5)

A Report Submitted to the Northeast Coordinated Bird Monitoring Partnership and the American Bird Conservancy
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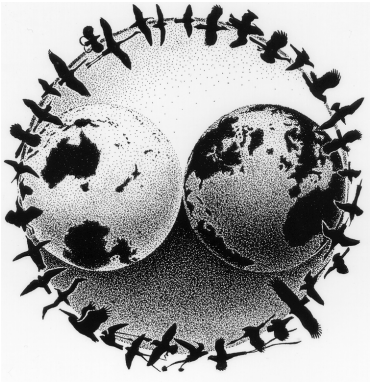

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EXECUTIVE SUMMARY

Since 1989, The Institute for Bird Populations has been coordinating the Monitoring Avian Productivity and Survivorship (MAPS) program, a cooperative effort among public and private agencies and individual bird banders in North America to operate annually a continent-wide network of nearly 500 constant-effort mist-netting and banding stations. MAPS was designed to provide information on the vital rates of landbirds to identify demographic causes of population declines of many North American landbird species.

Here we evaluate the MAPS program with respect to its current potential, and future ability, to meet landbird demographic monitoring needs in 13 states of the northeastern United States (US Fish and Wildlife Service [USFWS] Region 5). One-hundred eighty-three MAPS stations have been operated in the Northeast (we have verified data from 179 stations); 75 stations were active as of 2007. Many of these stations were established opportunistically with little coordination among agencies or individual station operators. We believe that development of a specific plan for MAPS improvement and growth will improve the ability of the program to provide critical demographic data for Northeast landbirds.

This report provides a basic framework for improvement and growth of the MAPS program in the Northeast region as a whole and for five North American Bird Conservation Initiative (NABCI) Bird Conservation Regions (BCRs) that lie (at least partially) within the Northeast region. Based on an earlier analysis of MAPS, we suggest that doubling the size of the program is a reasonable goal for MAPS program growth in the region. In developing our recommendations, we: (1) provide population trend data from the North American Breeding Bird Survey (BBS) and trend and demographic data from MAPS; (2) identify priority landbird species and habitats for monitoring in the Northeast; (3) identify MAPS target species and habitats for monitoring in the Northeast; (3) evaluate the effectiveness of existing and discontinued MAPS stations at monitoring target species and habitats; and (4) identify gaps in MAPS coverage and opportunities for growth on state and federal lands.

As a first step, we developed lists of species for consideration for MAPS monitoring for the Northeast region and for each BCR. Considered species for the Northeast regional scale included 141 landbird species that breed in the region and are readily captured in ground-level mist nets. At the BCR scale, we considered 89-124 species. From these lists, we identified priority species based on a scoring system that accounted for population trends and listing status on Partners in Flight (PIF) physiographic area plans and state wildlife action plans. From these lists, we identified MAPS target species. Target species included priority species that we deemed monitorable with MAPS methodology (priority-target species) and stable or increasing species currently well-represented in the MAPS Northeast data base (control-target species).

We identified five broad priority habitats that can effectively be sampled by MAPS: Scrub/ Successional/Disturbed habitats, Northern Coniferous Forest, Northern Hardwood Forest, Southern Hardwood Forest, and Southern Coniferous Forest We assigned each considered species (at both Northeast regional and BCR scales) to one or more of these habitat categories based on whether or not they are regularly found there. Additionally, we assigned each of the

179 MAPS stations to one of the habitat categories based on station descriptions provided by station operators.

We calculated cumulative priority scores for each MAPS station operated between 1989 and 2006 based on summed priority scores for species deemed to be captured at 'adequate' levels (2.5 adults/year) and numbers of control-target species captured at this level. Based on cumulative scores, we provide recommendations for continued operation of existing MAPS stations, re-establishment of discontinued stations, and establishment of new MAPS stations on lands that offer the greatest monitoring potential in each BCR. We suggest BCR-specific goals for MAPS program growth based on proportions of priority species and area coverage of each BCR. We identify geographic and habitat gaps in MAPS coverage and public (state and federal) lands where new MAPS stations might be established.

Our analysis of Northeast landbird population trends revealed alarming widespread recent population declines (both at the Northeast regional and BCR scales). The pattern of decline was shown by both MAPS and the BBS. We were able to provide estimates of time-constant (averaged) adult apparent survival for 78 species and indices of productivity for 120 species at the Northeast regional scale. We identified a total of 48 MAPS target species: 46 at the Northeast regional scale (36 priority-targets and 10 control-targets), and 17 (11 priority-target, 6 control-target; BCR 27) to 37 (25 priority-target, 12 control-target; BCR 28) at the BCR scale.

Northeast MAPS stations roughly reflected the distribution of the five broad habitat types. We suggest that the greatest increases in numbers of stations are needed in the Atlantic Northern Forest (BCR 14) and Appalachian Mountain (BCR 28) BCRs, and that a portion of this increase should target Northern Coniferous forest habitat. Several very large public landholdings present excellent choices for filling gaps in MAPS coverage in these BCRs. MAPS is relatively poorly represented in BCRs 13 and 27; however, relatively few opportunities exist for monitoring on public lands in the portions of those BCRs that fall within the Northeast region. We recommend continuation of 86% (62/72) of active MAPS stations for which we have data, re-establishment of 43% (46/107) of discontinued stations for which we have data, and establishment of at least 30 additional new stations.

Improvement of MAPS to better sample species of conservation concern (our priority species), under-represented regions and habitats, and the integration of the program more directly with other (count-based) monitoring efforts through a Northeast Coordinated Bird Monitoring network would tremendously increase the value of the MAPS program in the region. Enhancement and expansion of the MAPS program within the context of Northeast Coordinated Bird Monitoring would facilitate 1) identification of temporal and spatial patterns in vital rates; 2) linking vital rates to population dynamics and trends; 3) linking vital rates and population change to habitat, climate, and weather; 3) determination of proximate and ultimate causes of population change; 4) identification of thresholds and trigger points to highlight research or management needs; 5) development of management and conservation strategies to reverse population declines and maintain stable or increasing populations; and 6) evaluation of the effectiveness of management and conservation in an adaptive management context. We hope that public land managers will consider establishing MAPS stations as part of their cooperation with Northeast Coordinated Bird Monitoring.

INTRODUCTION

Since 1989, The Institute for Bird Populations has been coordinating the Monitoring Avian Productivity and Survivorship (MAPS) program, a cooperative effort among public and private agencies and individual bird banders in North America to operate a continent-wide network of approximately 500 constant-effort mist-netting and banding stations. MAPS was designed to provide information on the vital rates of landbirds in order to identify demographic causes of population declines of many North American landbird species (Robbins et al. 1989; Terborgh 1989; DeSante 1992; DeSante et al. 1995; Peterjohn et al.1995; DeSante et al. 1999, 2001). Data on vital rates are critical for designing effective management strategies to reverse population declines (DeSante 1995, DeSante and Rosenberg 1998).

The MAPS program uses a standardized protocol of constant-effort mist netting during the breeding season to index productivity and estimate adult apparent survival rates at spatial scales ranging from the local landscape to the entire continent (Rosenberg et al. 1999; Nott et al. 2003; Saracco et al. 2006). Vital rates can be related to ecological characteristics and population trends of target species (DeSante et al. 1999; DeSante 2000; DeSante et al. 2001), climatic cycles (Nott et al. 2002), and landscape-level habitat conditions (Nott et al. 2003, DeSante et al. 2005). The MAPS program is organized to fulfill three tiers of goals:

Monitoring goals of MAPS are to provide, for > 100 target species, including Neotropical-wintering migrants, temperate-wintering migrants, and permanent residents: 1) annual indices of adult population size and post-fledging productivity from data on numbers and proportions of young and adult birds captured; and 2) annual estimates of adult population size, adult survival rate, proportion of residents, recruitment into the adult population, and population growth rate from mark-recapture data.

Research goals of MAPS are to identify and describe: 1) temporal and spatial patterns in indices and estimates of demographic parameters at a variety of spatial scales ranging from the local landscape to the entire continent; and 2) relationships between these patterns and ecological characteristics of the target species, population trends of the target species, station-specific and landscape-level habitat characteristics, and spatially-explicit weather variables.

Management goals of MAPS are to use these patterns and relationships, at the appropriate spatial scales, to: 1) identify thresholds and trigger points to notify appropriate agencies and organizations of the need for further research and/or management actions; 2) determine the proximate demographic causes of population change; 3) suggest management actions and conservation strategies to reverse population declines and maintain stable or increasing populations; and 4) evaluate the effectiveness of the management actions and conservation strategies actually implemented through an adaptive management framework.

All of these goals are in agreement with the strategies of the Partners-in-Flight (PIF) programs as adhered to by state and federal land-holding agencies such as the Department of Defense (DoD), National Park Service (NPS), US Fish and Wildlife Service (FWS), and USDA Forest Service (USFS). Moreover, because bird populations are excellent indicators of the health of ecological

systems, they can serve as barometers of the effectiveness of management efforts aimed at maintaining the biodiversity and ecological integrity of federal lands. Accordingly, the MAPS program has been a focal project of many federal agencies and has been implemented on many federal lands. We expect that MAPS data will continue to aid research and management of those lands to maintain both ecological integrity and multiple human uses.

Here we evaluate the MAPS program with respect to its current potential, and future ability, to meet landbird demographic monitoring needs in 13 states of the northeastern United States (US Fish and Wildlife Service [USFWS] Region 5; hereafter "Northeast"). This report complements previous MAPS program reports for National Wildlife Refuges in USFWS Region 1 (DeSante et al. 2004) and for the Northwest MAPS Region (Pyle et al. 2005).

A total of 183 MAPS stations have been operated for at least one year in the Northeast, of which we have verified data from 179, and 75 of these stations were active as of 2007. Northeast MAPS stations have been established on a diverse array of landholdings, including private lands (72 stations in 12 states), county and state lands (38 stations in 11 states), Department of Defense (DoD) lands (30 stations in 5 states), National Park Service (NPS) lands (19 stations in 5 states), USFWS lands (19 stations in 8 states), and USDA Forest Service lands (5 station in 3 states). Many of these stations were established opportunistically with little coordination among agencies or individual station operators. We believe that the development of a coordinated plan for MAPS program improvement and growth in the Northeast will greatly improve the ability of MAPS to provide critical demographic data for Northeast landbirds.

We recently estimated that a targeted increase in the size of the MAPS program in the Northeast MAPS Region (roughly equivalent to the 13 states comprising the Northeast), from 65 to 128 stations (approximately doubling the size of the program; based on stations active in 2003), would result in an increase in the number of species adequately monitored from 38 to 62 species (a 63% increase) (Saracco et al. 2006). We suggest that this level of growth, a doubling in size of the Northeast MAPS program, is an appropriate goal for the plan presented here. A Northeast MAPS program of this size would be roughly equivalent to the size of the current Northwest MAPS program.

We provide recommendations for the Northeast region as a whole and for all or part of five North American Bird Conservation Initiative (NABCI) Bird Conservation Regions (BCRs). BCRs considered include: BCR 14 (Atlantic Northern Forest), BCR 13 (Lower Great Lakes/Saint Lawrence Plain), BCR 28 (Appalachian Mountains), BCR 30 (New England/Mid-Atlantic Coast), BCR 29 (Piedmont), and BCR 27 (Southeastern Coastal Plain). In developing recommendations we: (1) provide population trend data from the North American Breeding Bird Survey (BBS) and trend and demographic data from MAPS; (2) identify priority landbird species and habitats for monitoring in the Northeast; (3) identify MAPS target species and habitats for monitoring in the Northeast; (4) evaluate the effectiveness of existing and discontinued MAPS stations at monitoring target species and habitats; and (5) identify gaps in MAPS coverage and opportunities for growth on state and federal lands.

METHODS

Collection of MAPS data

MAPS data-collection protocols are summarized in the MAPS Manual (DeSante et al. 2007). Here we provide a brief overview. Constant-effort mist netting and banding was typically conducted on 6-9 days each summer (approximately once every 10 days between late May and early August) at each MAPS station (stations are roughly 20 ha). With few exceptions, all birds captured were identified to species, age, and sex (Pyle 1997). If unbanded, birds were banded with USGS/BRD numbered aluminum bands. Birds were released immediately upon capture and before being banded or processed if situations arose where bird safety was compromised. Data were collected on degree of skull pneumaticization, breeding condition of adults (i.e., extent of cloacal protuberance or brood patch), juvenal plumage in young birds, body and flight-feather molt, primary-feather wear, the presence of molt limits and plumage characteristics, wing chord, fat class, and body mass. Effort data (i.e., the number and timing of net-hours on each day of operation) were also collected in a standardized manner. The breeding status (confirmed breeder, likely breeder, non-breeder) of each species at each MAPS station each year was recorded using techniques similar to those employed for breeding bird atlas projects.

Critical data for each banding record (capture code, band number, species, age, sex, date, capture time, station, and net number) were proofed by hand against the raw data and any computer-entry errors were corrected. All banding data were then run through a series of verification programs to check the validity of all codes entered and the ranges of all numerical data. Cross-check programs were then run to compare station, date, time, and net-number fields from the banding data with those from the summary of mist netting effort data; to compare species, age, and sex determinations against degree of skull pneumaticization, breeding condition (extent of cloacal protuberance and brood patch), extent of body and flight-feather molt, primary-feather wear, and juvenal plumage, and presence of molt limits and plumage characteristics; to allow identification of unusual or duplicate band numbers or unusual band sizes for each species; and to screen banding and recapture data from all years of operation for inconsistent species, age, or sex determinations for each band number. Any discrepancies or suspicious data identified by any of these programs were examined manually and corrected as necessary.

We classified each landbird species captured in mist nets at each MAPS station based on their breeding or summer residency status. Residency status categories included: (1) usual breeder for species that attempted to breed at the station during > 50% of the years of operation, (2) occasional breeder for species that attempted to breed at the station $\leq$ 50% of years, (3) transient for species that never attempted to breed at the station but the station was within the overall breeding range of the species, and (4) migrant for species in which the station was not located within the overall breeding range. Data for a given species from a given station were included in productivity analyses if the species was a usual breeder, occasional breeder, or transient at the station. Data for a given species from a given station were included in trend and survivorship analyses only if the species was classified as a usual breeder.

Considered Species

As a first step to our analysis, we developed lists of species for consideration for MAPS monitoring for the Northeast region and for each BCR. **Considered species for the Northeast regional scale** included small landbird species that breed in the Northeastern U.S. and are readily captured in ground-level mist nets. We did not consider waterbirds, raptors, nocturnal species, upland gamebirds, or hummingbirds (which most operators do not have permits to band), or species captured at MAPS stations that do not breed in the Northeast region. We further limited the initial list to species captured at ≥ 1 MAPS station in the Northeast during 1989-2006 or listed as focal species in at least one of the 12 National Partners in Flight (PIF) Physiographic Area Plans (hereafter PIF plans) or 13 State Wildlife Action Plans (hereafter State plans) included in the Northeast (Appendix 1; see below for detail). This process resulted in a list of 141 species at the Northeast regional scale (Table 1; see Appendix 2 for scientific names); among these were species currently *not* well-represented in the MAPS database but that likely could be sampled adequately with expanded and targeted effort. **Considered species for the BCR scale** included species that (1) were considered species at the Northeast regional scale, (2) were captured at ≥ 1 MAPS station at which they were considered a usual breeder, (3) were listed by at least one PIF or state plan for portions of the PIF Physiographic Area or state that fell within the BCR, or (4) had a calculable 1980-2006 BBS trend specific to the BCR. The number of considered species at the BCR scale ranged from 89 (BCR 27) to 124 (BCR 28) species (Tables 2-7).

Reproductive Indices, Adult Apparent Survival Rates, and Population Trends,

Following procedures pioneered by the British Trust for Ornithology (BTO) in their CES Scheme (Peach et al. 1996), we report the mean number of adult birds captured per year as an index of adult population size. We calculated the mean capture rate of individual adult birds per year of operation for each considered species at each of the 179 stations operated in the Northeast region (for which we had obtained verified data) during the years 1989-2006. We counted each individual adult bird captured during a year (typically May 31-August 8, but beginning earlier at more southerly stations and later at more northerly stations) once, regardless of the number of times it was captured in that year. We used adult capture rates to determine monitoring potential and to evaluate the relative contribution of each station to the larger program. We consider an average of 2.5 adults captured per year at a station to be the minimum rate needed for basic productivity analyses, and so regard captures of ≥ 2.5 as an indication that a species is 'adequately captured' at a station (DeSante et al. 2003). We calculated the mean reproductive index for each species in the Northeast region by averaging the ratio of young to adult birds captured each year. We excluded years for which the reproductive index was undefined (i.e. no adults of the species captured in a year).

To evaluate population trends from MAPS data, we estimated "time-constant" lambda (λ), the average rate of change in population size over the period 1992-2003 (for which we have sufficient quantities of verified data), using reverse-time capture-recapture models (Pradel 1996). We implemented models with the "survival and lambda" option in Program MARK (White and Burnham 1999) to calculate maximum-likelihood estimates and standard errors (SEs) of λ, annual adult apparent survival rate (ϕ; note that estimates of ϕ from this model are typically lower than estimates of ϕ derived from the transient model of Nott and DeSante 2002 and Hines et al. 2003), and recapture probability (p). Although we constrained λ, ϕ, and p to be time-

constant in all models, we considered all combinations of models that allowed these three parameters to either remain constant or vary by BCR. At the Northeast regional scale, we report λ estimates from a single model (parameter estimates based on all data pooled across BCRs). At the scale of BCRs, λ estimates represent model-averaged values from an eight-model set that included all combinations of spatially varying (i.e., BCR-specific) and spatially constant λ , ϕ, and p. We limited consideration to models that produced estimates for both ϕ, and p that were neither 0 nor 1. Following the calculation of model averages we eliminated species from consideration if an average of < 2.5 adults were captured over all stations pooled in the region or BCR. We considered trends to be significantly declining whenever $\lambda < 0.95$ and 95% confidence intervals did not include 1. We considered trends to be significantly increasing if $\lambda > 1.05$ and 95% confidence intervals did not include 1.

BBS trends were estimated using the estimating-equations approach of Link and Sauer (1994); they were obtained from the BBS website (Sauer et al. 2006). To calculate BBS trends at the Northeast regional scale we used BBS Regional Trend Analyses for FWS Region 5 during the period 1992-2003 (to compare directly to λ values from MAPS data). BBS trends at the BCR scale were obtained from the BBS Trend Summaries for Bird Conservation Regions site, which only calculates trends for 1966-2006, 1966-1979, and 1980-2006. We only report trends from 1980-2006 because it is relatively recent (and closer to the time frame sampled by MAPS) and is a more consistent data set than the other time periods. (We compared BBS trends from 1966-2006 to trends from 1980-2006 and found only seven of 1,022 cases where a species trend in a BCR was significantly negative over one time period and significantly positive over the other.) We used $\alpha = 0.10$ for determining significance of BBS trends (as per Schalk et al. 2002).

MAPS Target Species

Target species were identified through a process of (1) identifying subsets of considered species as 'priority species', and (2) selecting MAPS target species from the considered and priority lists ('priority targets' and 'control targets'). For the Northeast region as a whole, and for each of the six BCRs that overlap the Northeast, we identified **priority species** based on (1) their being listed as focal species in one or more Northeast PIF or state plan; or (2) their having significant BBS or MAPS trends. We defined focal species in PIF plans as those listed as Tier 1 or Tier 2 in areas that overlapped the BCR and the breeding range and habitat of the species in the BCR. For State plans, we considered all Endangered Species, Threatened Species, or (generally) Species of Concern as focal species for states that overlapped the BCR and breeding range and habitat of the species in the BCR. We included both Willow and Alder flycatchers for listing status and BBS trends, but combined these species ("Traill's Flycatcher") for MAPS analyses because many individuals cannot be accurately identified to the species level in the hand. Two of the 12 PIF plans (21 - Northern Cumberland Plateau, and 28 - Eastern Spruce-Hardwood Forest) did not list species according to Tiers, so we considered species listed under "Priority Bird Populations and Habitats" as focal species for these areas. State plans were often inconsistent as to their designations and priority levels, especially regarding "species of concern." To add consistency to our selection process, we limited the number of focal species per state to 13-35 (depending on the size of the state and the diversity of its habitats) using finer-scale designations applied by each state in their listing.

W ranked species for the Northeast region and for each BCR by assigning **priority scores**.

Priority scores for each species and spatial scale represented cumulative totals based on points assigned for PIF plan status, State plan status, and trend status. A maximum of nine points could be attained for a species at the Northeast regional scale and a maximum of 11 points could be assigned to a species at the BCR scale. We defined **priority species** (for both the Northeast regional and BCR scales) as those with priority scores ≥ 2.5. At the Northeast regional scale, we assigned points for PIF plan status as: 4.0 if identified as a focal species in ≥ 4 PIF plans, 3.0 if identified 2-3 PIF plans, and 2.0 if identified in one PIF plan. Points for State plan status at the Northeast regional scale were assigned as: 2.0 if identified as a focal species in ≥ 4 State plans, 1.5 if identified 2-3 State plans, and 1.0 if identified in one State plan. At the BCR scale, we assigned 4.0 points to a species listed as a focal species in any PIF plan where the species breeds within the Physiographic Area and BCR and 2.0 points if it was listed as a focal species in any State plan where the species breeds within the state and BCR. For both the Northeast regional and BCR scales, we assigned 3.0 points to a species that exhibited significant declining trends according to both BBS and MAPS (specific to the Northeast region or BCR); 2.5 points if it showed a significant declining trend according to either BBS or MAPS, and a non-significant declining trend according to the other data set; 2.0 points if it exhibited a significant declining trend according to either BBS or MAPS and no trend could be calculated according to the other data set; and 1.0 point if it showed a significant declining trend according to either BBS or MAPS and a non-significant positive trend according to the other data set. Species with no significant trends or with a significant increasing trend according to one data set but a significant declining trend according to the other data set were given scores of 0.0. Finally, we added 2.0 points to species at the BCR scale if they were also listed as a priority species at the Northeast regional scale (to give more weight to species of concern at the broader scale).

We selected **MAPS target species** from lists of considered and priority species. MAPS target species consisted of two types: (1) MAPS priority-target species and (2) MAPS control-target species. Initial sets of potential **MAPS priority-target species** at Northeast regional and BCR scales were identified based on whether the species was a priority species (priority score ≥ 2.5) and whether the species was currently monitorable, or likely to be monitorable under targeted MAPS program expansion. We deemed a species **monitorable** if sampled in large enough numbers to detect meaningful 20-yr trends in adult apparent survival or differences in adult apparent survival between two populations (see Saracco et al. 2006 for detail). We excluded from the initial Northeast regional priority-target list those species that were not also priority-target species in at least one BCR (see following description). At the BCR scale, we eliminated potential priority-target species if (1) they had a combination of low priority scores (< 4.5) and poor representation in the BCR (adequate captures [≥ 2.5 adults/yr] at < 5 stations) or (2) they had particularly low overall capture rates (mean annual 1989-2006 adult capture rate < 2.0 in BCRs 14, 13, 29, or 27; or < 6.0 at in BCRs 28 and 30, where capture rates were much higher). Remaining BCR-scale priority-target species were given status codes to indicate levels of additional effort needed to capture species at monitorable levels in the BCR. Status codes were based on mean 1989-2006 capture rates as follows: 1 for species captured at adequate levels (≥ 2.5 adults/yr) at ≥ 5 currently *active* (as of 2007) stations; 2 for species not of status 1 but captured at adequate levels at five or more *active and inactive* stations; 3 for species not of status 1 or 2 but with a cumulative (across stations) mean adult capture rate of at least 7.0 (BCRs 14, 13, 29, or 27) or 20.0 (BCRs 28 and 30); and 4 for species not of status 1-3 but with a cumulative adult capture rate ≥ 2.0 (BCRs 14, 13, 29, or 27) or ≥ 6.0 (BCRs 28 and 30).

MAPS control-target species were a subset of the considered species list that exhibited stable or increasing population trends and were deemed to be monitorable by MAPS (see above). Targeting such species will allow comparison of demographic rates between these control-targets and species with declining trends, providing insight into proximate demographic cause(s) of the population changes.

Priority Habitats

We examined all 12 National Partners in Flight (PIF) Physiographic Area Plans and all 13 State Wildlife Action Conservation Plans to determine priority habitats within each of the six BCRs represented in the Northeast. For each BCR (14, 13, 28, 30, 29, and 27; cf. Fig. 3) we identified 3-4 broad target habitats that can effectively be monitored by MAPS stations. Priority habitats included Scrub/Successional/Disturbed habitats (SSD; all six BCRs); Northern Coniferous Forest (NC; BCRs 14 and 28); Northern Hardwood Forest (NH; BCRs 14, 13, 28, 30, and 29); Southern Hardwood Forest (SH; BCRs 13, 28, 30, 29, and 27); and Southern Coniferous Forest (SC; BCRs 30 and 27). We defined SSD habitat as areas dominated by woody vegetation < 5 m tall. Also included in this category were stations sited in large open areas, such as fields, orchards, marshes, and urban areas. NC habitat consisted largely of red spruce-balsam fir forest. NH consisted of forests dominated by sugar maple (*Acer saccharum*), American beech (*Fagus grandifolia*), and yellow birch (*Betula alleghaniensis*), but also containing various other hardwood species and conifers such as eastern hemlock (*Tsuga canadensis*) and eastern white pine (*Pinus strobus*). SH consisted of both upland and bottomland deciduous forests; dominant tree species included oak (*Quercus* spp.), hickory (*Carya* spp.), maple (*Acer* spp.), tulip-poplar (*Liridendron tulipifera*), cherry (*Prunus* spp.), and sweet gum (*Liquidambar styriciflua*). SC consisted of southern pine savannah or pine forest mixed with small amounts of deciduous forest; dominant species included loblolly pine (*Pinus taeda*) and Virginia pine (*Pinus virginiana*).

We assigned each of the considered species (at both Northeast regional and BCR scales) to one or more of the habitat categories based on whether the species regularly occurs in that habitat type (a single species could occur in as many as five habitat classes). Additionally, we assigned each of the 179 MAPS stations for which we had verified MAPS data to one of the five habitat categories based on station-scale habitat descriptions. For stations that spanned more than one broad habitat type, we used the species composition of bird capture data to designate a habitat type. We used habitat assessments to determine whether habitats, and species within habitats, were effectively monitored by the MAPS program.

Station-Specific Recommendations

We calculated cumulative priority scores for each station as the sum of the priority scores for species captured in adequate levels for productivity analysis (2.5 adults/year) plus 2.5 for each control-target species captured at this level. Based on cumulative priority scores, we recommend continued operation of existing MAPS stations, re-establishment of discontinued stations, and establishment of new MAPS stations on lands that offer the greatest monitoring potential in each BCR. We recommend continuing active stations that have at least ½ the average total priority species score of stations in the BCR and re-establishing stations that had a higher than average total priority score.

Goals for MAPS Program Growth
Based on the target of Saracco et al. (2006) for the Northeast MAPS Region, we set a goal of doubling the MAPS program growth in the Northeast. We set BCR-specific goals based on the mean of two proportions: (1) the proportion of area in the Northeast covered by the BCR and (2) the proportion of priority species (across BCRs) contained in the BCR. This mean proportion was multiplied by the target number of stations for the Northeast region to obtain a target number of stations for each BCR.

Federal and State Lands for Potential MAPS Growth in the Northeast
Based on capture rates of priority and target species at stations, priority habitats for monitoring, geographical gaps in MAPS coverage, and monitoring potential of various Northeast landholdings, we suggest species that could be targeted and geographic area/habitat combinations that would especially benefit from additional stations, should state, federal, and/or private landholders have resources to establish (or re-establish) them. We prepared a list of federal and state lands in the Northeast to guide selection of new sites for the establishment of MAPS stations. The list includes all federal and state parcels (in 11 of the 13 states) for which parcel size exceeds 1600 ha (4 km^2). We consider this area requirement to be the minimum amount of land required to perform reasonable landscape-level analyses of habitat pattern and structure (Nott and Michel 2005). Because of the high number of state-owned parcels that are >1600 ha in New York and Pennsylvania, we only list parcels > 3200 ha for these two states. We superimposed locations of MAPS stations and agency landholdings in the Northeast in ArcGIS™ to highlight geographical gaps in MAPS coverage (Fig. 3).

RESULTS

1. Captures, Habitat Associations, Plan Listings, Trends, and Vital Rates

1.1. Northeast Regional Scale

We recorded 157,375 captures of the 141 Northeast considered species at 179 stations during 1989-2006 (Table 1, Appendix 2). An additional 5,137 captures of 'non-considered' species were also recorded. Thirteen considered species (e.g., Chimney Swift, Sedge Wren) were not captured at any Northeast MAPS station. The ten most commonly captured species were Wood Thrush (9,716 captures), Common Yellowthroat (9,390 captures), Ovenbird (8,845), Song Sparrow (6,376), Veery (5,982), American Redstart (5,736), Red-eyed Vireo (5,695), American Robin (5,135), Northern Cardinal (4,756), and Black-capped Chickadee (4,661). The ten species captured at the most stations were Downy Woodpecker (155 stations), Ovenbird (155), Red-eyed Vireo (149), Gray Catbird (145), Wood Thrush (140), American Robin (136), Common Yellowthroat (133), Hairy Woodpecker (128), Northern Cardinal (126), and Black-capped Chickadee (122). The number of stations at which a species was captured in adequate numbers to index productivity (mean of $\geq$ 2.5 adults captured per year; hereafter "adequate levels") ranged from 0 (for 51 species) to 92 for Gray Catbird (Table 1). Eighty-seven species were captured at adequate levels at $\geq$ 1 station (Table 1). The ten species captured at adequate levels at the most stations were Gray Catbird (92 stations), Ovenbird (88), Wood Thrush (84), Common Yellowthroat (76), Red-eyed Vireo (61), Northern Cardinal (61), American Robin (59), Black-capped Chickadee (58), Veery (51), and American Goldfinch (43).

Sixty-four of the 141 considered species were listed by at least one PIF plan, 82 species were listed in at least one State plan, and 51 species were listed in at least one PIF and State plan (Table 1, Appendix 2). Seventy-five considered species occur regularly in Scrub/Successional/Disturbed (SSD) habitats, 51 occur regularly in Northern Coniferous Forest (NC), 57 occur regularly in Northern Hardwood Forest (NH), 53 occur regularly in Southern Hardwood Forest (SH), and 18 occur regularly in Southern Coniferous Forest (SC; Appendix 2).

BBS population trends during 1992-2003 could be calculated for 131 Northeast considered species (Table 1). Seventy-nine (60.3%) of these had declining BBS trends (50 significant; $P < 0.10$), and 52 had increasing BBS trends (25 significant). MAPS trends during this period could be calculated for 78 species. Sixty (76.9%) of these showed declining trends (20 significant; $\lambda < 0.95$ and $P < 0.05$) and 18 showed increasing trends (none significant; $\lambda > 1.05$ and $P < 0.05$). Of 76 species with calculable trends from both data sets, 49 trends were in the same direction (39 declining and 10 increasing) and 27 trends were in opposite directions (19 with increasing BBS trends and declining MAPS trends; 8 the other way around). Of the 36 species declining in both BBS and MAPS data sets, 14 were significant according to both (Least Flycatcher, Eastern Phoebe, Blue-winged Warbler, Yellow Warbler, Chestnut-sided Warbler, Black-throated Blue Warbler, Kentucky Warbler, Canada Warbler; Yellow-breasted Chat, Field Sparrow, Rose-breasted Grosbeak, Indigo Bunting, Common Grackle, and Baltimore Oriole). In addition, Willow Flycatcher significantly declined according to the BBS, and "Traill's" Flycatcher (including both Willow and Alder flycatchers, but probably more of the former) significantly declined according to MAPS. No species significantly increased according to both data sets (no MAPS trends were significantly positive). One species, Yellow-rumped Warbler, showed significant trends in opposite directions, increasing according to the BBS and declining according to MAPS.

Adult apparent survival-rate estimates from 1992-2003 MAPS data could be calculated for the same 78 species for which lambda was calculated (Table 1). Estimates ranged from 0.170 (Field Sparrow) to 0.815 (Cedar Waxwing) and averaged 0.478. MAPS reproductive index (young captured/adults captured) values for 1992-2003 could be calculated for 120 species (Table 1). Reproductive index values ranged from 0.00 (16 species) to 4.58 (Pine Siskin) and averaged 0.441.

1.2. BCR Scale

1.2.1. BCR 14, Atlantic Northern Forest

We considered 119 landbird species in BCR 14 (Table 2; Traill's and Willow flycatchers treated as one species). Sixty-six of these 119 species occur regularly in SSD habitats, 50 occur regularly in NC forest, and 56 occur regularly in NH forest. Forty-four species were listed by at least one PIF or state plan (27 by ≥ 1 PIF plan and 33 by ≥ 1 state plan). Of the 119 BCR-14-considered species, 112 had calculable BBS trends in BCR 14 for 1980-2006; 78 (69.6%) were declining (56 significant), 32 were increasing (20 significant), and two showed no trend. We were able to estimate 1992-2003 MAPS trends (time-constant λ) for 53 species; 42 (79.2%) were declining (21 significant) and 11 increasing (none significant). Fifteen species (Least Flycatcher, Wood Thrush, Gray Catbird, Cedar Waxwing, Yellow Warbler, Black-and-white Warbler, American Redstart, Common Yellowthroat, Canada Warbler, Scarlet Tanager, Field Sparrow, White-throated Sparrow, Rose-breasted Grosbeak, Red-winged Blackbird, and Baltimore Oriole)

significantly declined according to both the BBS and MAPS, while no species significantly increased according to both (Table 2).

1.2.2. Bird Conservation Region 13, the Lower Great Lakes/St. Lawrence Plain.
We considered 121 landbird species in BCR 13 (Table 3; data for Alder and Willow flycatchers combined for MAPS analyses). Sixty-seven of these species occur regularly in SSD habitats, 55 occur regularly in NH forest, and 50 occur regularly in SH forest. Twenty-seven species were listed by at least one PIF or state plan (21 by ≥ 1 PIF plan and 24 by ≥ 1 state plan). Of the 121 species, 116 had calculable 1980-2006 BBS trends in BCR 13; 53 (45.7%) were declining (27 significant), 63 were increasing (22 significant), and four showed no trend. We were able to estimate 1992-2003 MAPS trends (time-constant λ) for 39 species; 27 (69.2%) were declining (12 significant) and 11 increasing (none significant). Four species (Cedar Waxwing, Field Sparrow, Rose-breasted Grosbeak, and Brown-headed Cowbird) significantly declined according to both the BBS and MAPS; no species significantly increased in both data sets (Table 3).

1.2.3. BCR 28, Appalachian Mountains
We considered 124 landbird species in BCR 28 (Table 4; data for Alder and Willow flycatchers grouped for MAPS analyses). Sixty-eight of these species occur regularly in SSD habitats, 40 occur regularly in NC forest, 53 occur regularly in NH forest, and 53 occur regularly in SH forest. Sixty-one species were listed by at least one PIF or state plan (38 by ≥ 1 PIF plan and 53 by ≥ 1 state plan). One hundred fourteen had calculable BBS trends in BCR 28 for 1980-2006; 60 (52.6%) were declining (38 significant), 54 were increasing (30 significant), and two showed no trend. We were able to estimate 1992-2003 MAPS trends (time-constant λ) for 66 species; 41 (62.1%) were declining (18 significant) and 24 increasing (1 significant). Six species (White-eyed Vireo, Yellow Warbler, Chipping Sparrow, Field Sparrow, Rose-breasted Grosbeak, and Indigo Bunting) significantly declined in both the BBS and MAPS data sets, while no species significantly increased in both data sets (Table 4).

1.2.4. BCR 30, New England/Mid-Atlantic Coast
We considered 118 landbird species in BCR 30 (Table 5; data for Alder and Willow flycatchers grouped for MAPS analyses). Sixty-six of these species occur regularly in SSD habitats, 35 occur regularly in NH forest, 53 occur regularly in SH forest, and 16 species occur regularly in SC forests. Sixty-four species were listed by at least one PIF or state plan (41 by ≥ 1 PIF plan and 53 by ≥ 1 state plan). Of the 118 species, 109 had calculable BBS trends in BCR 30 for 1980-2006; 71 (65.1%) were declining (44 significant), 38 were increasing (16 significant), and none showed no trend (0.0). We were able to estimate 1992-2003 MAPS trends (time-constant λ) for 60 species; 44 (73.3%) were declining (14 significant) and 16 increasing (none significant). Eight species (House Wren, Blue-winged Warbler, Black-and-white Warbler, Kentucky Warbler, Field Sparrow, Swamp Sparrow, Rose-breasted Grosbeak, and Baltimore Oriole) significantly declined in both the BBS and MAPS data sets, while no species significantly increased in both data sets (Table 5).

1.2.5. BCR 29, Piedmont
We considered 98 landbird species in BCR 29 (Table 6; "Traill's" and Willow flycatchers grouped as a single species). Sixty of these species occur regularly in SSD habitats, 48 occur regularly in NH forest, and 53 occur regularly in SH forest. Thirty species were listed by at least

one PIF or state plan (24 by ≥ 1 PIF plan and 16 by ≥ 1 state plan). Of the 98 species, 92 had calculable BBS trends in BCR 29 for 1980-2006; 38 (41.3%) were declining (23 significant), 54 were increasing (27 significant), and none showed no trend (0.0). We were able to estimate 1992-2003 MAPS trends (time-constant λ) for 40 species; 30 (75.0%) were declining (12 significant) and 10 increasing (none significant). Five species (Eastern Wood-Pewee, Field Sparrow, Rose-breasted Grosbeak, Indigo Bunting, and Common Grackle) significantly declined in both the BBS and MAPS data sets, while no species significantly increased in both data sets (Table 6).

1.2.6. BCR 27, Southeastern Coastal Plain.
We considered 89 landbird species in BCR 27 (Table 7). Fifty-four of these species occur regularly in SSD habitats, 51 occur regularly in SH forest, and 18 occur regularly in SC forest. Twenty-nine species were listed by the PIF or state plans (30 by PIF plan 44 and 7 by the Virginia state plan). Of the 89 species, 85 had calculable BBS trends in BCR 27 for 1980-2006; 57 (67.1%) were declining (25 significant), 28 were increasing (11 significant), and one showed no trend (0.0). We were able to estimate 1992-2003 MAPS trends (time-constant λ) for 26 species; 14 (53.8%) were declining (5 significant) and 12 increasing (3 significant). Two species (Common Yellowthroat and Common Grackle) significantly declined in both the BBS and MAPS data sets, while no species significantly increased in both data sets (Table 7).

2. Priority and Target Species

2.1. Northeast Regional Scale

Priority scores for the 141 species considered at the Northeast regional scale (Table 1) ranged from 0.0 (31 species) to 9.0 (Blue-winged Warbler, Black-throated Blue Warbler, Canada Warbler, and Field Sparrow), with a mean of 3.21. Seventy-four species had priority scores ≥ 2.5, meeting our criteria for selection as Northeast priority species (bolded in Table 1; we selected Traill's Flycatcher based on the priority score of Willow Flycatcher). Sixty-four species were listed as Tier 1 or Tier 2 species by at least one Northeast PIF plan. Wood Thrush was listed for the most PIF areas (10), and five species (Sedge Wren, Golden-winged Warbler, Cerulean Warbler, Canada Warbler, Scarlet Tanager, and Henslow's Sparrow) were listed for nine areas. Eighty-two species were listed as Threatened, Endangered, or as of "special concern" by at least one Northeast state. Sedge Wren was listed by the most states (12), and two species (Golden-winged Warbler and Cerulean Warbler) were listed by 10 states. Thirty species (including Willow Flycatcher based on data from Willow and Traill's Flycatcher) qualified as priority species due to declining BBS *and* MAPS trends (with at least one trend significant).

Of the 74 Northeast priority species, 39 (including Willow Flycatcher, based on data for Traill's Flycatcher) were considered monitorable (Saracco et al. 2006) and were thus considered potential priority-target species at the Northeast regional scale (bolded italics in Table 1; Table 8). Three of these (Eastern Phoebe, Northern Parula, and Swamp Sparrow) were not priority-target species in any BCR and so were eliminated from consideration (Table 8). This resulted in selection of 36 priority-target species (Table 8). We selected 10 control-target species at the Northeast regional scale that were not priority species, but were monitorable, and showed generally stable or increasing population trends (italicized [but not bolded] species in Table 1).

Thus, the final list of MAPS target species at the Northeast regional scale consisted of 46 species (36 priority-targets and 10 control-targets; Table 8).

2.2. BCR scale

2.2.1. BCR 14, Atlantic Northern Forest

Priority scores for the 119 species considered for BCR 14 ranged from 0.0 (34 species) to 11.0 (Wood Thrush and Canada Warbler) with a mean of 3.58 (Table 2). Fifty-five species qualified as priority species for BCR 14 (priority score ≥ 2.5; bolded in Table 2). Of these 55 priority species, 31 were considered monitorable (Saracco et al. 2006) and are thus considered potential priority-target species for BCR 14 (bold-italics in Table 2). Of these 31 species (including Traill's Flycatcher), 23 (74%) were selected as priority-target species based on adequate capture rates (≥ 2.5 adults/year) at ≥ 5 stations, or by having priority score ≥ 4.5 and cumulative mean adult capture rates > 2.0). An additional seven species qualified as control-target species, resulting in a total of 30 target species for BCR 13 (Table 8). Among the 30 target species, we assigned five with status 1 (captured at adequate levels at ≥ 5 active stations), 11 with status 2 (captured at adequate levels at ≥ 5 active or inactive stations), 11 with status 3 (cumulative adult capture rate > 7.0), and three with status 4 (2.0 < cumulative mean adult capture rate < 7.0).

2.2.2. BCR 13, Lower Great Lakes/St. Lawrence Plain

Priority scores for the 121 species considered for BCR 13 ranged from 0.0 (48 species) to 11.0 (Field Sparrow) with a mean of 2.77 (Table 3). Forty species qualified as priority species for BCR 13 (priority score ≥ 2.5; bolded in Table 3). Of these 40 priority species (incl. Traill's Flycatcher), 21 were considered monitorable (Saracco et al. 2006) and so qualified as potential priority-target species for BCR 13 (bold-italics in Table 3). Sixteen (76%) of these species were selected as priority-target species based on adequate mean adult capture rates (≥ 2.5 adults/year) at ≥ 5 stations, or by having priority score ≥ 4.5 and cumulative mean adult capture rates > 2.0. An additional eight species qualified as control-target species, resulting in a total of 24 target species for BCR 13 (Table 8). Among these 24 target species, we ranked one with status 1 (captured at adequate levels at ≥ 5 active stations), 12 with status 2 (captured at adequate levels at ≥ 5 stations), eight with status 3 (cumulative mean adult capture rate > 7.0), and three with status 4 (2.0 < cumulative mean adult capture rate < 7.0).

2.2.3. BCR 28, Appalachian Mountains

Priority scores for the 124 species considered for BCR 28 ranged from 0.0 (31 species) to 11.0 (Field Sparrow) with a mean of 3.95 (Table 4). Sixty-three of these species qualified as priority species for BCR 28 (priority scores ≥ 2.5; bolded in Table 4). Of these 63 priority species (incl. Traill's Flycatcher), 35 were considered monitorable (Saracco et al. 2006) and so qualified as potential priority-target species (bold-italics in Table 4). Twenty-five (71%) of these species were selected as priority-target species based on adequate mean capture rates (≥ 2.5 adults/year) at ≥ 5 stations or by having priority score ≥ 4.5 and cumulative adult capture rates > 2.0. An additional 12 species qualified as control-target species, resulting in a total of 37 target species for BCR 28 (Table 8). Among these 37 target species, we ranked 14 with status 1 (captured at adequate levels at ≥ 5 active stations), seven with status 2 (captured at adequate levels at ≥ 5 stations), seven with status 3 (cumulative mean adult capture rate > 20.0), and nine with status 4 (6.0 < cumulative adult capture rate < 20.0).

2.2.4. BCR 30, New England/Mid-Atlantic Coast

Priority scores for the 118 species considered for BCR 30 ranged from 0.0 (31 species) to 11.0 (Blue-winged Warbler, Prairie Warbler, Black-and-white Warbler, Kentucky Warbler, and Field Sparrow) with a mean of 4.34 (Table 5). Seventy-one of these species qualified as priority species for BCR 30 (priority scores ≥ 2.5; bolded in Table 5). Of these 71 priority species (incl. Traill's Flycatcher), 41 were considered monitorable (Saracco et al. 2006) and so qualified as potential priority-target species for BCR 30 (bold-italics in Table 5). Twenty-eight (68%) of these species were selected as priority-target species based on adequate mean capture rates (≥ 2.5 adults/year) at ≥ 5 stations or by having priority scores ≥ 4.5 and cumulative mean adult capture rates > 2. An additional 6 species qualified as control-target species, resulting in a total of 34 target species for BCR 30 (Table 8). Among these 34 target species, we ranked 13 with status 1 (captured at adequate levels at ≥ 5 active stations), seven with status 2 (captured at adequate levels at ≥ 5 stations overall), seven with status 3 (cumulative adult capture rate > 20.0), and seven with status 4 (6.0 cumulative mean adult capture rate < 20.0).

2.2.5. BCR 29, Piedmont

Priority scores for the 98 species considered for BCR 29 ranged from 0.0 (28 species) to 10.5 (Wood Thrush and Blue-winged Warbler) and averaged 3.15 (Table 6). Thirty-eight species qualified as priority species for BCR 29 (priority scores ≥ 2.5; bolded in Table 6). Of these 38 priority species (incl. Traill's Flycatcher), 21 were considered monitorable (Saracco et al. 2006) and so qualified as potential priority-target species within BCR 29 (bold-italics in Table 6). Fourteen (67%) of these species were selected as priority-target species based on adequate capture rates (≥ 2.5 adults/year) at ≥ 5 stations or by having priority score ≥ 4.5 and cumulative mean adult capture rates > 2.0. Nine species qualified as control-target species, resulting in a total of 23 target species for BCR 29 (Table 8). Among these 23 target species, we ranked six with status 1 (captured at adequate levels at ≥ 5 active stations), five with status 2 (captured at adequate levels at ≥ 5 stations), nine with status 3 (cumulative mean adult capture rate > 7.0), and three with status 4 (2.0 < cumulative mean adult capture rate < 7.0).

2.2.6. BCR 27, Southeastern Coastal Plain

Priority scores for the 89 species considered for BCR 27 ranged from 0.0 (27 species) to 8.5 (Eastern Wood Pewee) with a mean of 3.20 (Table 7). Thirty-nine of these species qualified as priority species for BCR 27 (≥ 2.5; bolded in Table 7). Of these 39, 21 were considered monitorable (Saracco et al. 2006) and were thus considered potential priority-target species for BCR 27 (bold-italics in Table 7). Eleven (52%) of these species were selected as priority-target species based on adequate capture rates (≥ 2.5 adults/year) at ≥ 5 stations or by having priority score ≥ 4.5 and cumulative adult capture rates > 2.0. Six species qualified as control-target species, making a total of 17 target species for BCR 27 (Table 8). Among the 17 target species, we ranked none with status 1 (captured at adequate levels at ≥ 5 active stations), four with status 2 (captured at adequate levels at ≥ 5 stations overall), seven with status 3 (cumulative adult capture rate > 7.0), and six with status 4 (2.0 < cumulative mean adult capture rate < 7.0).

3. Priority Habitats and Target Species

Percentages of target species found regularly in each of the five habitat classes at the Northeast regional scale were (in descending order): Southern Hardwood (SH) forest (52%),

Scrub/Successional/Disturbed (SSD) habitats (50%), Northern Hardwood (NH) forest (48%), Northern Coniferous (NC) forest (28%), and Southern Coniferous (SC) Forest (13%; Table 9). Means across the six BCRs showed a similar pattern: SH forest (53%), SSD habitat (48%), and NH forest (44%), NC forest (14%) and SC forest (4%). The pattern in the percentages of target species with status 3 and 4 (those that need particular attention) that regularly occur in the five habitat types was also similar (Table 9): SH forest (53% of status 3 and 4 species), SSD habitat (51%), NH forest (35%) NC forest (11%) and SC forest (1%).

4. MAPS Station Evaluation

4.1. Northeast Regional Scale

The 183 stations that have operated in the Northeast are summarized in Table 10 and Figures 1-3. The number of active stations increased steadily from 3 in 1989 to a peak of 100 in 2002 and 2003 (Fig. 1). The drop between 2003 and 2004 from 100 active stations to 77 active stations was due primarily to discontinuation of funding for 23 stations (from 31 in 2002 to 8 in 2004) operated by The Institute for Bird Populations on NPS and DoD lands in Massachusetts, Maryland, and Virginia (Fig. 3). The number of active stations has since remained fairly constant at 75-78 stations (Fig. 1).

Based on 182 Northeast stations with habitat data, the greatest representation by MAPS stations was in hardwood habitats (34% in NH forest and 35% in SH forest; Table 10). SSD habitats had intermediate coverage (25%), while coniferous forests were less represented (5% in NC forest and 1% in SC forest). Proportional representation was nearly identical when considering just active stations, except that no stations are now operating in SC forest in the region.

4.2. BCR Scale

4.2.1. BCR 14, Atlantic Northern Forest

Thirty-two MAPS stations have been operated in BCR 14 (31 with data), of which 13 (12 with date) are active (Table 10, Fig. 2). Five of these stations (two active) were located in SSD habitats, 10 (three active) were located in NC Forests, and 17 stations (eight active) were located in NH forest (Table 10, Fig. 2). Fourteen stations (four active) were located on private lands, five (two active) were located on state or county lands, six (all active) were located on DoD lands, one (not active) was located on NPS land, four (one active) were located on FWS lands, and two (none active) were located on USFS lands. The 32 stations were operated for 157 station-years (mean = 4.9 yrs/sta; range = 1-14 yrs/sta) during 1989-2006 (Tables 2 & 10). Data has been received for 150 of these 157 station-years. Not including the Black Branch station (no data received), the number of monitorable species ranged from two (Aton Forest) to 19 (Vermont Institute), with a mean of 7.6. The mean number of adults captured of these monitorable species ranged from 21.0 (Upper Enchanted West and Sidney) to 136.6 (Vermont Institute), with a mean of 54.2 adults. Cumulative priority species score ranged from 1.0 (1 station) to 100.0 (Vermont Institute), with a mean of 28.0.

We recommend re-establishing discontinued stations in this BCR with priority score $\geq$ 28.0 (mean for all stations) and continuation of active stations with priority score $\geq$ 14.0 (half the mean). Based on these cutoffs, we recommend re-establishment of five of 19 discontinued stations, including: Woodland Bog and Vermont Institute on private lands; Petit Menan Point on

FWS lands; and Mount Moosilauke and Hubbard Brooke on USFS lands. We recommend continuation of 11 of 12 active stations (with data) and relocation of one station.

4.2.2. BCR 13, Lower Great Lakes/St. Lawrence Plain

Seventeen MAPS stations have been operated in BCR 13; four are active (Table 10, Fig. 2). Eight stations (two active) were located in SSD habitats, eight (two active) were located in NH forest, and one (not active) was located in SH forest (Table 10, Fig. 2). Six stations (three active) were located on private lands, seven (one active) were located on state or county lands, two (none active) were located on DoD lands, and two (none active) were located on FWS lands. The 17 stations were operated for a total of 79 station-years (mean = 4.6 yrs/sta; range = 1-10 yrs/sta) during 1989-2006 (Tables 3 & 10). Data has been received for 78 of these 79 station-years. The number of monitorable species ranged from 7 (four stations) to 18 (Cornell), with a mean of 11.6 species. The mean number of adults of these monitorable species captured ranged from 70.0 (Big Run) to 263.00 (Cornell), with a mean of 125.8 adults. Cumulative priority species score ranged from 18.0 (North Blind) to 55.0 (Cornell), with a mean of 35.0.

We recommend re-establishing discontinued stations in this BCR with priority score $\geq$ 35.0 (mean for all stations) and continuation of active stations with priority score $\geq$ 17.5 (half the mean). Based on these cutoffs, we recommend re-establishment of seven of 13 discontinued stations, including: Cornell and Big Run on Private lands; Fair Haven, Kaiser, and Helmer Marsh on State or County lands, 3 Bravo on DoD lands, and Mississquoi NWR on FWS lands. We recommend continuation of all four active stations.

4.2.3. BCR 28, Appalachian Mountains

A total of 54 MAPS stations have been operated in BCR 28 (we have data for 53); 23 (22 with data) are active (Table 10, Fig. 2). Thirteen stations (seven active) were located in SSD habitats, 24 (eight active) were located in NH forests, and 17 (eight active) were located in SH forests (Table 10, Fig. 2). Thirty of the 54 stations (17 active) were located on private lands, six (one active) were located on state or county lands, three (two active) were located on DoD lands, 11 (one active) were located on NPS lands, one (not active) was located on FWS land, and three (two active) were located on USFS lands. Not including the Little Gap station (no data received), these stations were operated for 303 station-years (mean = 5.6 yrs/sta; range = 1-17 sta/yrs) during 1989-2006 (Table 5). Data has been received for 282 of these 303 station-years. The number of monitorable species ranged from 0 (two stations) to 23 (Sandstone Falls), with a mean of 7.6 species. The mean number of adults of these monitorable species captured ranged from 5.2 (Long Road) to 179.9 (Sandstone Falls), with a mean of 65.5. Cumulative priority species score ranged from 0.0 (two stations) to 84.0 (Sandstone Falls), with a mean of 28.2.

We recommend re-establishing discontinued stations in this BCR with priority score $\geq$ 28.2 (mean for all stations) and continuation of active stations with priority score $\geq$ 14.1 (half the mean). Based on these cutoffs, we recommend re-establishment of 18 of 31 discontinued stations, including: Spring Hill, Pierce Creek, Montana Forest Station, Raystown, and Cumberland Valley on private lands; Plateau Mountain, Fairmont Mall, Ivy Knob, NSVAS Blandy, and Rapidan Wildlife Management Area on state or county lands; and eight stations operated in Shenandoah National Park (by The Institute for Bird Populations) on NPS lands. We

recommend continuation of 17 of the 22 active stations (for which we have data), and relocation of five stations.

4.2.4. BCR 30, New England/Mid-Atlantic Coast

A total of 56 MAPS stations have been operated in BCR 30, of which 24 (23 with data) are active (Table 10, Fig. 2). Of these (we have habitat data for 55 stations), 16 stations (seven active) were located in SSD habitats, 12 (four active) were located in NH forests, 24 (12 active) were located in SH forests, and three (none active) were located in SC forests (Table 10, Fig. 2). Sixteen stations (nine active) were located on private lands, 16 (nine active) were located on state or county lands, nine (four active) were located on DoD lands, seven (none active) were located on NPS lands, and eight (two active) were located on FWS lands. The 56 stations were operated for 433 station-years (mean = 7.7 yrs/sta; range = 1-17 yrs/sta) during 1989-2006 (Table 4). We have received data for 418 of the 433 station-years. Not including the Tuckerneck Island station (no data), the number of monitorable species ranged from one (the two Delaware Woods stations) to 13 (Connecticut Audubon Center at Pomfret), with a mean of 6.6 species. The mean number of adults of these monitorable species captured ranged from 20.5 (Tiffany Creek) to 159.0 (Hoffman Center), with a mean of 64.2 adults. Cumulative priority species score ranged from 8.5 (Marconi Beach and Nissiquogue River) to 74.0 (Pardon Gray), with a mean of 27.6.

We recommend re-establishing discontinued stations in this BCR with priority score $\geq$ 27.6 (mean for all stations) and continuation of active stations with priority score $\geq$ 13.8 (half the mean). Based on these cutoffs, we recommend re-establishment of 12 of 32 discontinued stations, including: Merriam Road, Pardon Gray, Devil's Den, and Mashomack Preserve on private lands; Stump Neck and Belvoir Uplands on DoD lands; and Hazard, Trustum, Ninigret, E. B. Forsythe NWR, Woodcock Lane, and Patuxent on FWS lands. We recommend continuation of 19 of the 23 active stations (for which we have data), and relocation of four stations.

4.2.5. BCR 29, Piedmont

A total of 14 MAPS stations have been operated in BCR 29, of which nine are active (Table 10, Fig. 2). Of these, four stations (three active) were located in SSD habitats, none were located in NH forest, and 10 (six active) were located in SH forests (Table 10, Fig. 2). Six stations (four active) were located on private lands, three (two active) were located on state or county lands, four stations (three active) were located on DoD lands, and one station (not active) was located on FWS land. The 14 stations were operated 115 station-years (mean = 8.2 yrs/sta; range = 2-17 yrs/sta) during 1989-2006 (Table 6). We have received data for 108 of these 115 station-years. The number of monitorable species ranged from four (two stations) to 14 (three stations), with a mean of 8.8. The mean number of adults of monitorable species captured ranged from 15.0 (Hotpatch Road) to 211.4 (Hopewell), with a mean of 84.8. Cumulative priority species score ranged from 15.5 (MCBQ-LOGC) to 52.5 (Hopewell), with a mean of 28.2.

We recommend re-establishing discontinued stations in this BCR with priority score $\geq$ 28.2 (mean for all stations) and continuation of active stations with priority score $\geq$ 14.1 (half the mean). Based on these cutoffs, we recommend re-establishment of two of five discontinued stations: St Timothy's School on private land and Harford Glen on state or county land. We recommend continuation of all nine active stations.

4.2.6. BCR 27, Southeastern Coastal Plain

A total of 10 MAPS stations have been operated in BCR 27 (nine stations with data), of which two are active (Table 10, Fig. 2). All 10 of these were located in SH forests (Table 10, Fig. 2). One station (not active) was located on state or county land, six stations (none active) were located on DoD lands, and three stations (two active) were located on FWS lands. Not including Dismal Swamp 1 (no data), the nine stations were operated for 87 station-years (mean = 9.7 yrs/sta; range = 8-16 yrs/sta) during 1989-2006 (Table 7). Data has been received for 86 of these 87 station-years. The number of monitorable species ranged from four (three stations) to seven (three stations), with a mean of 5.6 species. The mean number of adults captured of these monitorable species ranged from 28.6 (Owls Creek) to 66.6 (A.P. Hill 1), with a mean of 47.7 adults. Cumulative priority species score among stations with data ranged from 7.0 (Owls Creek) to 23.0 (A.P. Hill 1), with a mean of 15.6.

We recommend re-establishing discontinued stations in this BCR with priority score $\geq$ 15.6 (mean for all stations) and continuation of active stations with priority score $\geq$ 7.8 (half the mean). Based on these cutoffs, we recommend re-establishment of two of the seven discontinued stations (with data): A.P. Hill 1 and A.P. Hill 2, both on DoD lands. We recommend continuation of both active stations.

5. Goals for MAPS Program Growth in the Northeast

We suggested a goal of doubling the Northeast MAPS program, such that 150 stations are operated annually. Based on the proportions of priority species in each BCR (i.e., numbers of priority species in a BCR scaled by numbers of priority species in all BCRs) and the area coverage of BCRs, we suggest a distribution of new stations as shown in Table 11. In particular, we suggest that program growth is especially needed in BCRs 14 and 28 (suggested increases of 20 and 22 stations, respectively) and, to a somewhat lesser extent, in BCRs 13, 29, and 27 (suggested increases of 14, 9, and 9 stations, respectively). Coverage is currently good in the New England/Mid-Atlantic coastal region (BCR 30), where human population densities are high. We recommend just one new MAPS station in that BCR.

6. Geographic Gaps and Opportunities for Monitoring on Public Lands

Conspicuous gaps in active MAPS coverage exist in the Adirondack Mountains and in western Massachusetts in BCR 14; in western Vermont, western and central-eastern New York, and north-western Pennsylvania in BCR 13; in north-central Pennsylvania, western West Virginia, and western Virginia in BCR 28; in southern New York, north-central Pennsylvania, western West Virginia, and south-western Virginia in BCR 30; in southeastern Pennsylvania, and south-central Virginia in BCR 29; and in the eastern portion of Virginia in BCR 27 (Figs. 2 & 3).

Federal and state land parcels exceeding 1600 ha in size (3200 ha for New York and Pennsylvania) are listed in Table 11. We list a total of 385 parcels (13 parcels are listed for two separate BCRs) from BCR 14 (99 parcels), BCR 13 (12 parcels), BCR 28 (162 parcels), BCR 30 (90 parcels), BCR 29 (22 parcels), and BCR 27 (13 parcels). A total of 117 Federal listed parcels are administered by USFS (38 parcels), NPS (19 parcels), FWS (22 parcels), BIA (three parcels), and DoD (35 parcels). A total of 281 state parcels are listed, ranging in number from 2

in Rhode Island to 38 in New York. The largest parcel by far is Adirondack Park (administered by the state of New York) in BCR 14, with an area of approximately 2,355,800 ha. Six other parcels exceeded 100,000 ha: Jefferson National Forest (USFS) in BCR 28 (595,100 ha), White Mountain National Forest (USFS) in BCR 14 (295,000 ha), Green Mountain National Forest (USFS) in BCRs 14 and 13 (220,000 ha), George Washington National Forest (USFS) in BCR 28 (182,300 ha), Sproul State Forest (State of Pennsylvania) in BCR 28 (123,500 ha), and Susquehannock State Forest (State of Pennsylvania) in BCR 28 (104,700 ha).

DISCUSSION

Our analysis of Northeast landbird population trends revealed alarming widespread recent population declines (both at the Northeast regional and BCR scales). The general pattern of decline was shown by both MAPS and the BBS (64% of trends in same direction and 95% of significant declines in the same direction), suggesting that both programs can provide accurate data on the status of these populations at broad spatial scales (also see Saracco et al. in press). Although MAPS can provide trend data, its strength derives from its ability to provide data on vital rates, which are not provided by extensive count-based programs, such as the BBS.

We were able to estimate time-constant (averaged) adult apparent survival for 78 species and provide indices of productivity for 120 species at the Northeast regional scale, suggesting that the current MAPS program largely meets broad-scale demographic monitoring needs. Yet improvement of MAPS to better sample species of conservation concern (our priority species), under-represented regions and habitats, and the integration of the program more directly with other (count-based) monitoring efforts through a Northeast Coordinated Bird Monitoring network would tremendously increase the value of the MAPS program in the region.

Enhancement and expansion of the MAPS program within the context of Northeast Coordinated Bird Monitoring would facilitate 1) identification of temporal and spatial patterns in vital rates; 2) linking vital rates to population dynamics and trends; 3) linking vital rates and population change to habitat, climate, and weather; 3) determination of proximate and ultimate causes of population change; 4) identification of thresholds and trigger points to highlight research or management needs; 5) development of management and conservation strategies to reverse population declines and maintain stable or increasing populations; and 6) evaluation of the effectiveness of management and conservation in an adaptive management context (DeSante et al. 2001, 2005; Nott et al. 2002; Saracco et al. in press).

The distribution of MAPS stations sampled from 1989-2006 roughly reflected the habitats regularly used by MAPS target species. For example, more target species were associated with both Southern (SH) and Northern (NH) Hardwood and Scrub/Successional/Disturbed (SSD) habitats (48-52% in SSD, SH, or NH habitats) than with either Northern (NC) or Southern (SC) Coniferous habitat types (28% and 13% in NC and SC, respectively). A larger proportion of MAPS stations was also operated within hardwood habitat (35% in SH and 34% in NH forest) compared to coniferous habitat (5% in NC and 1% in SC forest). Although relatively few Northeast MAPS target species were associated with coniferous forest, a number of species of conservation concern in the Northeast that are not currently sampled well by MAPS do associate,

at least in part, with NC forest (a relatively uncommon and somewhat isolated habitat type in the Northeast). Many of these species are associated with the extensive boreal forests of Canada, where they are also not sampled well by MAPS. Greater effort should probably be expended to cover this important habitat type, particularly in BCRs 14 and 28, where we recommend the greatest MAPS expansion (see below).

We set a goal of doubling the MAPS effort in the Northeast (increasing the number of active stations to 150) to maximize the number of monitorable species in the region, the precision of vital rate estimates, and our power to detect trends in vital rates. We suggest that the greatest increases in numbers of stations are needed in the Atlantic Northern Forest and Appalachian Mountain BCRs (BCRs 14 and 28). Several particularly large public landholdings would seem to be excellent choices for filling gaps in MAPS coverage in these BCRs. In BCR 14, these include: Adirondack Park (NY), White Mountain National Forest (NH-ME, which contained two of three discontinued stations on federal land that we recommend reestablishing), Green Mountain National Forest (VT), and Baxter State Park (ME). In BCR 28, promising choices for siting stations include several large state forests in Pennsylvania, national forests in Virginia/West Virginia, and Shenandoah National Park (VA, which contains eight discontinued stations that we recommend reestablishing). MAPS is relatively poorly represented in BCRs 13 and 27 in the Northeast (although very little of BCR 27 is contained in the Northeast – it is primarily a southeastern BCR); however, relatively few opportunities exist for monitoring on public lands in the portions of those BCRs that fall within the Northeastern region.

We recommend continuation of 86% (62/72) of active MAPS stations for which we have data, re-establishment of 43% (46/107) of discontinued stations for which we have data, and establishment of at least 30 additional new stations. Although there are a few stations that we recommend relocating (10 in total), many MAPS stations serve other research and educational purposes besides collection of MAPS data. Furthermore, the 'negative data' (i.e., few number of captures) provided by these stations can lend insight into the distribution and abundance of species despite contributing little to the MAPS program goal of monitoring vital rates. Thus, we want to emphasize that any decision to discontinue or relocate a station should not be based simply on the value of that station to the MAPS program, but rather on the overall merit of the station to meeting the goals of the station operator.

Summary

We recommend better integration of MAPS into Northeast Coordinated Monitoring efforts. Furthermore, we suggest MAPS would best be able to provide useful information for avian conservation in the Northeast by expansion of the program in the region. Expanding the program from 75 (currently active) to 150 stations would substantially increase the number of monitorable species (by > 60% based on analyses of the Northeast MAPS Region) and improve the quality of MAPS data for currently monitorable species. Our analyses suggest that nearly all active and many inactive MAPS stations provide (or provided) high quality data for priority and target species in the region. A multitude of options for establishment of MAPS stations on state and federal lands exist. We hope that public land managers will consider establishing MAPS stations as part of their cooperation with Northeast Coordinated Bird Monitoring.

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Table 1. Landbird species (see Appendix 2 for scientific names) considered for our analysis of the Northeast MAPS program. Priority species (priority score ≥ 2.5) are presented in **bold** type and monitorable species (see Methods) in *italic* type. For each species, we summarize PIF and state plan listings, 1992-2003 Breeding Bird Survey (BBS) trends and MAPS data, and monitoring priority scores.

Species[1]	No. PIF plans[2]	No. state plans[3]	BBS trend[4]	No. sta.[5]	No. sta. ≥ 2.5 [6]	No. caps[7]	$\hat{\lambda}$ (SE)[8]	$\hat{\phi}$ (SE) [9]	RI[10]	Priority score[11]
Mourning Dove	0	0	1.38***	23	0	56			0.38	0.0
Yellow-billed Cuckoo	**1**	**1**	**-3.19*** **	**36**	**0**	**70**			**0.04**	**5.0**
Black-billed Cuckoo	**4**	**3**	**-13.87*** **	**36**	**0**	**90**			**0.25**	**7.5**
Chimney Swift	**5**	**3**	**-1.36** **	**0**	**0**	**0**				**7.5**
Belted Kingfisher	0	0	-1.20	9	0	82			0.94	0.0
Red-headed Woodpecker	**5**	**5**	**-3.21**	**2**	**0**	**8**			**0.00**	**6.0**
Red-bellied Woodpecker	0	1	3.78***	59	0	289	0.984(0.028)	0.472(0.117)	0.26	1.0
Yellow-bellied Sapsucker	0	2	5.39***	27	2	233	1.007(0.046)	0.462(0.109)	0.07	1.5
Downy Woodpecker	0	0	1.27**	155	13	2671	0.982(0.015)	0.364(0.059)	1.17	0.0
Hairy Woodpecker	1	0	2.40**	128	0	685	1.011(0.023)	0.801(0.075)	0.61	2.0
Red-cockaded Woodpecker	**1**	**2**	**0.00**	**0**	**0**	**0**				**3.5**
Black-backed Woodpecker	**1**	**3**	**4.48**	**0**	**0**	**0**				**3.5**
Northern Flicker	0	0	0.85*	87	1	379	0.986(0.034)	0.56 (0.156)		0.0
Pileated Woodpecker	0	1	1.08	38	0	65			0.25	1.0
Olive-sided Flycatcher	**3**	**5**	**-1.34**	**4**	**0**	**4**			**0.00**	**5.0**
Eastern Wood-Pewee	**7**	**1**	**-3.65*** **	**97**	**2**	**640**	**0.98 (0.019)**	**0.434(0.057)**	**0.10**	**7.5**
Yellow-bellied Flycatcher	0	2	4.39*	40	4	185			0.11	1.5
Acadian Flycatcher	***5***	***3***	***-1.74*** **	***64***	***29***	***2176***	***1.001(0.010)***	***0.383(0.027)***	***0.10***	***6.5***
Alder Flycatcher	0	4		67	20	1386				2.0
Traill's Flycatcher	***0***	***0***		***67***	***20***	***1386***	***0.942(0.019)****	***0.299(0.063)***	***0.18***	***7.5***
Willow Flycatcher	***6***	***3***	***-0.26***	***67***	***20***	***1386***				***5.5***
Least Flycatcher ‡	***1***	***2***	***-4.71*** **	***45***	***3***	***442***	***0.911(0.033)****	***0.389(0.326)***	***0.43***	***6.5***

Table 1 continued.

Species[1]	No. PIF plans[2]	No. state plans[3]	BBS trend[4]	No. sta.[5]	No. sta. ≥ 2.5 [6]	No. caps[7]	$\hat{\lambda}$ (SE)[8]	$\hat{\phi}$ (SE) [9]		RI[10]	Priority score[11]
Eastern Phoebe	***0***	***0***	***-2.90******	***85***	***4***	***1186***	***0.938(0.023)****	***0.435***	***(0.089)***	***1.59***	***3.0***
Great Crested Flycatcher	1	0	-0.45	81	2	398	0.975(0.024)	0.680	(0.109)	0.07	2.0
Eastern Kingbird	**1**	**0**	**-1.80*****	**19**	**0**	**101**	**0.999(0.060)**	**0.460**	**(0.141)**	**0.08**	**4.5**
Loggerhead Shrike	**3**	**6**	**0.00**	**0**	**0**	**0**					**5.0**
White-eyed Vireo	0	0	-0.35	53	17	1182	0.965(0.018)	0.415	(0.046)	0.34	0.0
Yellow-throated Vireo ‡	**3**	**0**	**0.21**	**29**	**0**	**107**	**0.969(0.052)**	**0.469**	**(0.202)**	**0.12**	**3.0**
Blue-headed Vireo	0	2	0.32	46	4	247	0.943(0.032)	0.338	(0.125)	0.13	1.5
Warbling Vireo †	0	0	2.40***	18	2	214	0.932(0.060)	0.114	(0.038)	0.59	0.0
Philadelphia Vireo	0	0	19.01	7	1	21				0.00	0.0
Red-eyed Vireo	*0*	*0*	*1.01****	*149*	*61*	*5695*	*0.988(0.006)*	*0.552*	*(0.018)*	*0.07*	*0.0*
Gray Jay	0	1	2.66	2	0	4				1.00	1.0
Blue Jay	0	0	0.40	116	9	1017	1.005(0.017)	0.681	(0.073)	0.25	0.0
Purple Martin	0	1	0.50	0	0	0					1.0
Tree Swallow†	0	0	-0.49	16	2	167	0.929(0.044)	0.029	(0.020)	0.06	0.0
Northern Rough-wng. Swallow	0	0	-0.94	8	1	45				0.18	0.0
Bank Swallow	0	1	-3.53	0	0	0					1.0
Cliff Swallow	0	2	1.59	0	0	0					1.5
Barn Swallow	0	0	-0.39	17	0	54				0.80	0.0
Carolina Chickadee	1	0	-0.63	55	7	1071	0.990(0.017)	0.474	(0.073)	0.83	2.0
Black-capped Chickadee	*0*	*0*	*0.39*	*122*	*58*	*4661*	*0.997(0.012)*	*0.516*	*(0.035)*	*0.73*	*0.0*
Boreal Chickadee	0	0	6.58	7	1	32				0.33	0.0
Tufted Titmouse	*0*	*0*	*2.28****	*120*	*31*	*4223*	*0.995(0.011)*	*0.442*	*(0.028)*	*1.06*	*0.0*
Red-breasted Nuthatch	0	0	-1.58	25	0	68				0.89	0.0
White-breasted Nuthatch	0	0	2.54***	91	1	468	1.015(0.034)	0.428	(0.128)	0.61	0.0
Brown-headed Nuthatch	**2**	**0**	**15.28****	**0**	**0**	**0**					**3.0**
Brown Creeper	0	2	1.36	47	1	178				0.87	1.5
Carolina Wren	*0*	*0*	*0.56*	*99*	*28*	*3842*	*1.023(0.013)*	*0.221*	*(0.035)*	*1.04*	*0.0*
Bewick's Wren	**3**	**3**	**0.00**	**0**	**0**	**0**					**4.5**

Table 1 continued.

Species[1]	No. PIF plans[2]	No. state plans[3]	BBS trend[4]	No. sta.[5]	No. sta. ≥ 2.5 [6]	No. caps[7]	$\hat{\lambda}$ (SE)[8]	$\hat{\phi}$ (SE) [9]	RI[10]	Priority score[11]
House Wren	0	0	-4.12 ***	64	16	1398	1.014 (0.023)	0.23 (0.086)	0.61	1.0
Winter Wren	**0**	**2**	**-2.48 *** **	**29**	**0**	**84**			**0.93**	**3.5**
Sedge Wren	**9**	**12**	**0.00**	**0**	**0**	**0**				**6.0**
Marsh Wren	**1**	**4**	**-8.49 *** **	**3**	**0**	**16**			**1.00**	**6.0**
Golden-crowned Kinglet	0	1	2.47	14	2	146			0.88	1.0
Ruby-crowned Kinglet	0	0	0.68	15	0	45			0.12	0.0
Blue-gray Gnatcatcher	0	0	-3.14***	43	1	227			0.45	2.0
Eastern Bluebird	0	0	1.26**	36	2	456	0.982(0.031)	0.432(0.127)	0.89	0.0
Veery	***3***	***2***	***-2.77******	***110***	***51***	***5982***	***0.956(0.007)***	***0.499(0.013)***	***0.21***	***7.0***
Bicknell's Thrush†	***4***	***4***	***.***	***9***	***3***	***84***	***0.918(0.093)***	***1.000***	***0.05***	***6.0***
Swainson's Thrush	0	2	4.29***	82	15	979	1.012(0.046)	0.612(0.051)	0.12	1.5
Hermit Thrush	*0*	*1*	*-0.11*	*58*	*21*	*1480*	*0.960(0.024)*	*0.435(0.036)*	*0.44*	*1.0*
Wood Thrush	***10***	***7***	***-3.69******	***140***	***84***	***9716***	***0.973(0.006)***	***0.349(0.016)***	***0.27***	***8.5***
American Robin	*0*	*0*	*-0.06*	*136*	*59*	*5135*	*0.986(0.008)*	*0.399(0.033)*	*0.52*	*0.0*
Gray Catbird	***2***	***0***	***-0.45***	***145***	***92***	***21395***	***0.983(0.005)***	***0.444(0.011)***	***0.42***	***3.0***
Northern Mockingbird	0	0	0.41	15	0	64			0.57	0.0
Brown Thrasher	***3***	***3***	***0.15***	***75***	***5***	***553***	***1.005(0.034)***	***0.715(0.083)***	***0.30***	***4.5***
European Starling	0	0	-0.43	15	0	123			1.28	0.0
Cedar Waxwing ‡	0	0	0.97**	85	20	1681	0.958(0.013)	0.815(0.328)	0.04	0.0
Blue-winged Warbler	***7***	***8***	***-6.78******	***53***	***12***	***1058***	***0.843(0.017)****	***0.371(0.067)***	***0.34***	***9.0***
Golden-winged Warbler	**9**	**10**	**-16.37*** **	**8**	**2**	**35**			**0.09**	**8.0**
Tennessee Warbler	0	0	-11.35**	21	0	58			0.00	2.0
Nashville Warbler ‡	0	2	-1.05	26	7	381	0.982(0.053)	0.319(0.266)	0.51	1.5
Northern Parula ‡	***1***	***4***	***1.32****	***28***	***2***	***225***	***1.002(0.031)***	***0.181(0.112)***	***0.15***	***4.0***
Yellow Warbler	***0***	***0***	***-3.11******	***72***	***31***	***4263***	***0.928(0.011)****	***0.411(0.027)***	***0.46***	***3.0***
Chestnut-sided Warbler	***3***	***2***	***-2.61******	***64***	***15***	***1297***	***0.923(0.017)****	***0.418(0.038)***	***0.31***	***7.5***
Magnolia Warbler	*0*	*0*	*3.65****	*72*	*18*	*1207*	*0.975(0.027)*	*0.356(0.051)*	*0.32*	*0.0*
Cape May Warbler	**1**	**0**	**-11.81****	**1**	**0**	**3**			**0.00**	**4.0**

Table 1 continued.

Species[1]	No. PIF plans[2]	No. state plans[3]	BBS trend[4]	No. sta.[5]	No. sta. ≥ 2.5 [6]	No. caps[7]	$\hat{\lambda}$ (SE)[8]	$\hat{\phi}$ (SE) [9]	RI[10]	Priority score[11]
Black-throated Blue Warbler	***5***	***4***	***-1.54****	***64***	***7***	***595***	***0.887(0.044)****	***0.506(0.142)***	***0.39***	***9.0***
Yellow-rumped Warbler	0	1	1.28**	50	13	900	0.919(0.028)**	0.334(0.056)		1.0
Black-throated Green Warbler	*0*	*2*	*2.34****	*45*	*10*	*734*	*0.979(0.027)*	*0.382(0.05)*	*0.26*	*1.5*
Blackburnian Warbler	**5**	**3**	**-0.53**	**24**	**1**	**82**			**0.57**	**5.5**
Yellow-throated Warbler	1	0	0.43	3	0	12			0.00	2.0
Pine Warbler ‡	1	0	-0.35	31	4	217	0.932(0.043)	0.199(0.114)	0.43	2.0
Prairie Warbler †	***8***	***6***	***-3.15****	***23***	***4***	***253***	***0.992(0.047)***	***0.058(0.025)***	***0.43***	***8.5***
Palm Warbler	0	1	16.91*	3	0	7				1.0
Bay-breasted Warbler	**3**	**4**	**1.69**	**9**	**0**	**39**			**0.00**	**5.0**
Blackpoll Warbler ‡	0	3	0.28	33	7	309	0.904(0.067)	0.293(0.214)	0.3	1.5
Cerulean Warbler	**9**	**9**	**-5.16****	**13**	**0**	**28**			**0.47**	**8.0**
Black-and-white Warbler	***2***	***1***	***-4.10***	***110***	***19***	***1967***	***0.995(0.014)***	***0.511(0.039)***	***0.52***	***4.0***
American Redstart	***1***	***1***	***-2.33****	***115***	***34***	***5736***	***0.977(0.007)***	***0.459(0.022)***	***0.61***	***5.5***
Prothonotary Warbler	***4***	***3***	***1.41***	***16***	***2***	***775***	***1.045(0.021)***	***0.479(0.076)***	***0.87***	***5.5***
Worm-eating Warbler	***8***	***4***	***-1.05***	***62***	***19***	***2093***	***1.036(0.014)***	***0.487(0.039)***	***0.62***	***6.0***
Swainson's Warbler	**3**	**4**	**5.14**	**3**	**1**	**71**			**0.27**	**5.0**
Ovenbird	***1***	***0***	***-0.75****	***155***	***88***	***8845***	***0.998(0.006)***	***0.467(0.016)***	***0.49***	***4.5***
Northern Waterthrush	0	1	-0.94	91	3	688	1.066(0.082)	0.456(0.151)	0.63	1.0
Louisiana Waterthrush	***8***	***4***	***-2.42****	***71***	***8***	***1429***	***1.012(0.020)***	***0.369(0.041)***	***0.82***	***7.0***
Kentucky Warbler	***8***	***3***	***-7.47****	***34***	***5***	***531***	***0.930(0.024)****	***0.396(0.05)***	***0.32***	***8.5***
Mourning Warbler	***0***	***2***	***-1.21***	***41***	***1***	***217***	***0.821(0.050)****	***0.65 (0.152)***	***0.63***	***4.0***
Common Yellowthroat	***0***	***0***	***-1.04****	***133***	***76***	***9390***	***0.964(0.007)***	***0.396(0.018)***	***0.41***	***2.5***
Hooded Warbler	***3***	***1***	***1.03***	***62***	***16***	***2272***	***0.966(0.011)***	***0.35 (0.026)***	***0.29***	***4.0***
Wilson's Warbler	0	0	-5.26	23	0	89			0.56	0.0
Canada Warbler	***9***	***7***	***-4.16****	***79***	***6***	***775***	***0.904(0.033)****	***0.234(0.101)***	***0.8***	***9.0***
Yellow-breasted Chat †	***2***	***3***	***-3.81****	***25***	***7***	***401***	***0.827(0.043)****	***0.098(0.028)***	***0.36***	***7.5***
Summer Tanager	0	1	-0.49	13	0	102			0.12	1.0
Scarlet Tanager	**9**	**1**	**-1.09****	**95**	**8**	**921**	**0.962(0.014)**	**0.58 (0.075)**	**0.26**	**7.5**

Table 1 continued.

Species[1]	No. PIF plans[2]	No. state plans[3]	BBS trend[4]	No. sta.[5]	No. sta. ≥ 2.5 [6]	No. caps[7]	$\hat{\lambda}$ (SE)[8]	$\hat{\phi}$ (SE) [9]	RI[10]	Priority score[11]
Eastern Towhee	***7***	***4***	***-1.12****	***105***	***18***	***1856***	***1.003(0.013)***	***0.437(0.036)***	***0.42***	***7.0***
Bachman's Sparrow	**3**	**1**	**0.00**	**0**	**0**	**0**				**4.0**
Chipping Sparrow	***0***	***0***	***-1.26*****	***53***	***9***	***804***	***0.974(0.024)***	***0.399(0.074)***	***0.34***	***2.5***
Field Sparrow	***7***	***4***	***-4.36*****	***49***	***11***	***686***	***0.796(0.033)****	***0.170(0.079)***	***0.39***	***9.0***
Vesper Sparrow	**0**	**8**	**-5.79*****	**1**	**0**	**1**			**0.00**	**4.0**
Savannah Sparrow	**0**	**2**	**-1.75****	**10**	**1**	**69**			**0.39**	**3.5**
Grasshopper Sparrow	**5**	**8**	**-6.32*****	**5**	**0**	**9**			**0.00**	**8.0**
Henslow's Sparrow	**9**	**9**	**1.80**	**1**	**0**	**1**			**0.00**	**6.0**
Nelson's Sharp-tailed Spar.	**2**	**1**	**0.00**	**1**	**0**	**1**				**4.0**
Saltmarsh Sharp-tailed Spar.	**3**	**6**		**0**	**0**	**0**				**5.0**
Seaside Sparrow	**2**	**6**	**-4.03***	**0**	**0**	**0**				**7.0**
Song Sparrow	***0***	***0***	***-0.99*****	***88***	***42***	***6376***	***0.960(0.012)***	***0.281(0.030)***	***1.06***	***2.5***
Lincoln's Sparrow	0	0	6.71*	19	0	47			0.00	0.0
Swamp Sparrow	***0***	***2***	***1.04***	***44***	***8***	***827***	***0.932(0.030)****	***0.357(0.060)***	***1.11***	***2.5***
White-throated Sparrow	***0***	***2***	***-0.93***	***55***	***19***	***1396***	***0.819(0.024)****	***0.226(0.049)***	***0.44***	***4.0***
Dark-eyed Junco	0	0	-1.05	43	12	1622	1.025(0.021)	0.348(0.079)		0.0
Northern Cardinal	*0*	*0*	*0.63****	*126*	*61*	*4756*	*1.003(0.009)*	*0.513(0.022)*	*0.32*	*0.0*
Rose-breasted Grosbeak	***4***	***0***	***-3.50*****	***75***	***12***	***773***	***0.926(0.018)****	***0.446(0.089)***	***0.28***	***7.0***
Blue Grosbeak	0	0	-2.20***	9	0	26			0.20	2.0
Indigo Bunting	***2***	***1***	***-1.97*****	***89***	***30***	***1639***	***0.901(0.014)****	***0.354(0.049)***	***0.19***	***7.0***
Dickcissel	**1**	**3**	**0.00**	**1**	**0**	**1**				**3.5**
Bobolink	**2**	**4**	**-1.49***	**5**	**0**	**22**			**0.00**	**7.0**
Red-winged Blackbird	***0***	***0***	***-0.62***	***52***	***16***	***958***	***0.934(0.020)****	***0.551(0.099)***	***0.08***	***2.5***
Eastern Meadowlark	**0**	**7**	**-3.57*****	**1**	**0**	**1**			**0.00**	**4.0**
Rusty Blackbird	0	4	59.92	1	0	1				2.0
Common Grackle	**0**	**0**	**-1.52****	**80**	**17**	**1345**	**0.945(0.015)****	**0.213(0.098)**	**0.23**	**3.0**
Brown-headed Cowbird	***0***	***0***	***-4.64*****	***112***	***1***	***498***	***0.984(0.026)***	***0.4 (0.124)***	***0.37***	***2.5***
Orchard Oriole ‡	0	1	1.27*	23	2	119	0.896(0.072)	0.636(0.29)	0.29	1.0

Table 1 continued.

Species[1]	No. PIF plans[2]	No. state plans[3]	BBS trend[4]	No. sta.[5]	No. sta. ≥ 2.5 [6]	No. caps[7]	$\hat{\lambda}$ (SE)[8]	$\hat{\phi}$ (SE) [9]	RI[10]	Priority score[11]
Baltimore Oriole	***3***	***0***	***-1.65******	***72***	***7***	***687***	***0.862(0.023)****	***0.302(0.076)***	***0.43***	***6.0***
Purple Finch	**2**	**1**	**2.63****	**31**	**0**	**168**			**0.47**	**4.0**
House Finch	0	0	-6.37***	30	3	638			1.18	2.0
White-winged Crossbill	0	0	10.50	1	0	2			0.00	0.0
Pine Siskin	0	2	-0.79	6	0	62			4.58	1.5
American Goldfinch	*0*	*0*	*3.77****	*109*	*43*	*3065*	*0.968(0.010)*	*0.439(0.057)*	*0.00*	*0.0*
Evening Grosbeak	0	0	-11.16***	2	0	12			0.00	2.0
House Sparrow	0	0	-1.41***	17	2	201	1.083(0.080)	0.076(0.040)	0.86	1.0

[1] The list includes species captured at ≥ 1 Northeast MAPS station operated during 1989-2006 (data from 179 of 183 stations operated during this time period) and species listed as focal species in ≥ 1 National Partners in Flight (PIF) Physiographic Area Plan or State Wildlife Action Plan. We excluded waterbirds, raptors, upland gamebirds, hummingbirds, nocturnal species, species that do not breed in the region, and individuals not identified to species (except for Willow and Alder flycatchers). For Willow and Alder flycatchers, we indicate PIF Area and State listings and BBS trends, but for MAPS analyses, we grouped these species under the name "Traill's Flycatcher" because most individuals of these two species cannot be reliably identified to species in the hand. ‡ = Estimates of survival probability ($\hat{\phi}$) and population growth rate ($\hat{\lambda}$) should be viewed with caution because they are based on fewer than five between-year recaptures, or the survival estimate is very imprecise (SE($\hat{\phi}$)>0.200 or CV($\hat{\phi}$)>50.0%). † = Species met minimum requirements for inclusion in survival/lambda analysis, but estimates for survival or recapture probability (or both) were either 1.0 or 0.0.

[2] Number of National Partners in Flight (PIF) Physiographic Area Plans in the Northeast in which the species was listed as a Tier 1 or 2 Priority species. See Methods regarding PIF Physiographic Areas 21 and 28 and details about the listing of focal species within Bird Conservation Regions, and see Appendix 1 for a list of Area Plans including links to each specific plan.

[3] Number of State Wildlife Action Conservation Plans in the Northeast in which the species was listed as focal species, usually defined as an Endangered Species, a Threatened Species, or a Species of Special Concern (see Methods). See Methods for details about the listing of focal species within Bird Conservation Regions, and see Appendix 1 for a list of State Plans including links to each specific plan.

[4] Population trend for 1992-2003 in the Northeast according to Breeding Bird Survey (BBS) data. *** $P < 0.01$; ** $0.01 < P < 0.05$; * $0.05 < P < 0.10$.

[5] Number of MAPS stations operated in the Northeast during 1989-2006 for which data on the species were available for analysis.

[6] Number of MAPS stations (see [5]) at which the species was "adequately captured" (≥ 2.5 adults/yr) and was considered a usual breeder (attempted to breed in > ½ the years the station was operated). See Methods for detail.

[7] Number of captures at all 179 MAPS stations (see [5]) pooled during 1989-2006; includes captures of young and unknown-age birds and captures from stations where the species was not a usual breeder.

Table 1 continued.

[8] Time-constant (1992-2003), region-wide population growth rate estimate (population size at time t+1 divided by population size at time t, or N(t+1)/N(t)). $\hat{\lambda}$ < 1.0 indicate declining trends and $\hat{\lambda}$ > 1.0 indicate increasing trends. These analyses only include data from stations at which the species was a usual breeder. See Methods for detail. ** indicates significant trends at $P < 0.05$.

[9] Estimate of time-constant (1992-2003) apparent annual adult survival probability. See Methods for detail.

[10] Mean reproductive index averaged over the 12 years, 1992-2003. Reproductive indices (young/adult) are calculated by year and the mean of the yearly indices are presented in this table. Years in which the reproductive index was undefined (i.e. no adults captured in that year) are not included in the mean. Data for each species are included only from stations that lie within the breeding range of the species.

[11] Priority Score is based on PIF and state plan listings and BBS and MAPS trends (see Methods). Priority Scores range from 0 (no listing and no significant trend) to 9 (listed in both PIF and state plans and showing significant negative trends according to both BBS and MAPS data).

Table 2. Landbird species (see Appendix 2 for scientific names) considered for our analysis in **Bird Conservation Region 14, Atlantic Northern Forest**. Priority species (priority score ≥ 2.5) for BCR 14 are presented in **bold** type and monitorable species (see Methods) in *italic* type. For each species we summarize, for BCR 14, PIF and state plan listings, priority scores, 1980-2006 Breeding Bird Survey (BBS) trends and 1992-2003 MAPS data, and monitoring priority scores.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/ yr[12]	Adults/yr active sta.[13]
Mourning Dove	SSD			4.4***		0.0	1	0	0	5	0.33	0.00
Yellow-billed Cuckoo	SSD, NH			-13.0		2.0	0	0	0	0	0.00	0.00
Black-billed Cuckoo	**SSD, NH**		**NY**	**-5.8*** **		**6.0**	**1**	**0**	**0**	**1**	**0.33**	**0.33**
Chimney Swift	**SSD**	**27**	**VT**	**-4.5*** **		**10.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Belted Kingfisher	SSD, NH			-2.6**		2.0	0	0	0	0	0.00	0.00
Red-headed Woodpecker	**SSD**		**NY**			**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Red-bellied Woodpecker				31.1**		0.0	0	0	0	0	0.00	0.00
Yellow-bellied Sapsucker	NC, NH			2.8***	1.003 (0.053)	0.0	9	0	0	73	9.95	2.01
Downy Woodpecker	SSD, NH			1.3**	0.968 (0.047)	0.0	12	2	1	183	14.59	7.06
Hairy Woodpecker	NC, NH			2.5***	1.007 (0.035)	0.0	13	0	0	63	8.40	4.32
Black-backed Woodpecker	**NC, NH**	**27**	**ME, VT, NH**	**-14.0****		**10.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Northern Flicker	SSD, NC, NH			-0.4	0.975 (0.059)	0.0	3	0	0	26	2.52	0.67
Pileated Woodpecker	NH			4.7***		0.0	1	0	0	1	0.11	0.00
Olive-sided Flycatcher	**NC**	**26, 28**	**ME, VT**	**-4.3****		**10.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Eastern Wood-Pewee	***NH***	***26, 27***		***-4.4**** **		***8.0***	***4***	***0***	***0***	***7***	***1.03***	***1.03***
Yellow-bellied Flycatcher	NC			-0.2		0.0	7	4	1	90	21.50	6.50
Alder Flycatcher	SSD, NC, NH			0.0		0.0	0	0	0	0	0.00	0.00
Traill's Flycatcher	***SSD, NC, NH***				***0.793 (0.038)****	***4.0***	***5***	***5***	***2***	***241***	***29.86***	***8.75***
Willow Flycatcher	***SSD***		***ME, MA, NY***	***1.2***		***4.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Least Flycatcher	***SSD, NH***	***27***		***-2.9**** **	***0.849 (0.044)****	***9.0***	***5***	***1***	***0***	***202***	***17.00***	***3.79***
Eastern Phoebe	SSD, NH			0.7*	0.941 (0.070)**	2.0	5	1	0	181	5.62	1.90
Great Crested Flycatcher	***NH***	***26***		***-0.7***		***4.0***	***3***	***0***	***0***	***7***	***0.85***	***0.85***
Eastern Kingbird	**SSD**			**-3.3*** **		**4.0**	**1**	**0**	**0**	**35**	**2.33**	**0.00**
Yellow-throated Vireo	**NH**			**-5.5****		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Blue-headed Vireo	NC, NH			2.9***	0.957 (0.081)	0.0	11	0	0	58	10.12	6.14
Warbling Vireo †	NH			2.7*		0.0	1	1	0	61	3.78	0.00

Table 2 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/ yr[12]	Adults/yr active sta.[13]
Philadelphia Vireo	NH			5.3**		0.0	1	1	1	15	2.75	2.75
Red-eyed Vireo	*NH*			*1.7****	*0.933 (0.039)***	*0.0*	*16*	*8*	*4*	*362*	*53.03*	*22.27*
Gray Jay	NC		VT			2.0	1	0	0	2	0.20	0.00
Blue Jay	NH			0.1	0.954 (0.071)	0.0	13	1	0	121	13.48	8.34
Purple Martin	**SSD, NH**		**NH**	**-12.3*** **		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Tree Swallow †	**SSD, NH**			**-3.0*** **		**2.5**	**1**	**1**	**0**	**39**	**3.67**	**0.00**
N. Rough-winged Swallow	SSD			-0.6		0.0	0	0	0	0	0.00	0.00
Barn Swallow	SSD			-6.4***		2.0	1	0	0	1	0.14	0.14
Bank Swallow	SSD			-7.8***		2.0	0	0	0	0	0.00	0.00
Cliff Swallow	SSD			-2.9		0.0	0	0	0	0	0.00	0.00
Black-capped Chickadee	*NC, NH*			*1.9****	*0.968 (0.029)*	*0.0*	*26*	*10*	*6*	*807*	*73.31*	*35.59*
Boreal Chickadee	NC			-1.8*		2.0	1	1	1	15	3.00	3.00
Tufted Titmouse	NH			18.8***	1.153 (0.228)	0.0	4	0	0	48	3.38	3.38
Red-breasted Nuthatch	NC			1.6***		0.0	9	0	0	24	5.00	2.50
White-breasted Nuthatch	NH			4.5***	1.014 (0.037)	0.0	8	0	0	31	4.37	1.45
Brown Creeper	NC, NH			2.9		0.0	10	1	0	54	9.86	3.78
House Wren	SSD			-3.1***		2.0	1	0	0	9	0.56	0.00
Winter Wren	NC			1.8***		2.0	13	0	0	45	5.66	1.11
Sedge Wren	**SSD**	**27**	**ME, VT, NH, MA, NY**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Marsh Wren	SSD			-16.0		2.0	0	0	0	0	0.00	0.00
Golden-crowned Kinglet	NC			1.6		0.0	10	2	0	135	14.08	1.25
Ruby-crowned Kinglet	NC			-1.4**		2.0	1	0	0	5	1.00	0.00
Blue-gray Gnatcatcher	SSD			-11.0		0.0	0	0	0	0	0.00	0.00
Eastern Bluebird	SSD			1.4		0.0	1	0	0	19	1.22	0.00
Veery	***NH***	***26, 27, 28***	***VT, NH***	***-3.3**** **	***0.955 (0.012)***	***10.5***	***15***	***12***	***7***	***827***	***90.24***	***52.66***
Bicknell's Thrush †	***SSD, NC***	***26, 27, 28***	***ME, VT, NH, NY***			***8.0***	***5***	***3***	***0***	***73***	***20.10***	***0.00***
Swainson's Thrush	NC			-1.9***	1.012 (0.046)	1.0	17	14	4	562	85.86	35.25
Hermit Thrush	*NC, NH*			*1.5***	*0.966 (0.028)*	*0.0*	*22*	*15*	*3*	*1007*	*89.19*	*22.83*
Wood Thrush	***NH***	***26, 27***	***VT, MA, NY***	***-5.0**** **	***0.868 (0.035)****	***11.0***	***11***	***5***	***1***	***334***	***28.48***	***9.51***

Table 2 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/ yr[12]	Adults/yr active sta.[13]
American Robin	*SSD, NC, NH*			*-0.1*	*0.972 (0.031)*	*0.0*	*18*	*7*	*4*	*623*	*52.25*	*24.20*
Gray Catbird	***SSD, NH***	***27***		***-2.3******	***0.897 (0.029)****	***9.0***	***7***	***4***	***3***	***904***	***62.84***	***35.11***
Northern Mockingbird	SSD			-1.5		0.0	0	0	0	0	0.00	0.00
Brown Thrasher	***SSD***		***VT***	***-6.1******	***1.005 (0.049)***	***5.0***	***1***	***1***	***0***	***56***	***3.44***	***0.00***
European Starling	SSD, NH			-2.0***		2.0	2	1	0	14	11.42	0.00
Cedar Waxwing	**SSD, NC, NH**			**-1.0****	**0.930 (0.026)****	**3.0**	**8**	**3**	**1**	**421**	**50.19**	**11.29**
Blue-winged Warbler	***SSD***		***ME, VT, MA, NY***	***-5.8****		***6.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Golden-winged Warbler	**SSD**	**26, 27**	**VT, NH, MA, NY**	**-18.0**		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Tennessee Warbler	SSD, NH			-7.8***		2.0	1	0	0	10	1.40	0.00
Nashville Warbler	NC, NH			-0.8	0.982 (0.053)	0.0	13	7	3	311	36.80	13.50
Northern Parula	***NC***		***MA***	***0.4***	***0.992 (0.072)***	***4.0***	***3***	***1***	***0***	***41***	***4.90***	***0.50***
Yellow Warbler	***SSD***			***-2.0******	***0.876 (0.046)****	***5.0***	***4***	***2***	***0***	***249***	***16.55***	***1.14***
Chestnut-sided Warbler	***SSD, NH***	***26, 27, 28***	***VT***	***-1.9******	***0.959 (0.045)***	***10.5***	***6***	***2***	***1***	***167***	***12.50***	***6.21***
Magnolia Warbler	*NC*			*-0.1*	*0.974 (0.028)*	*0.0*	*17*	*14*	*5*	*862*	*85.51*	*26.11*
Cape May Warbler	**NC**	**28**		**-4.0**		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Black-throated Blue Warb.	***NC, NH***	***26, 27, 28***	***VT, NY***	***0.0***	***1.031 (0.099)***	***8.0***	***11***	***6***	***3***	***365***	***48.63***	***16.28***
Yellow-rumped Warbler	NC			0.6	0.921 (0.029)**	1.0	20	12	2	512	85.27	10.29
Black-throated Green Warb.	*NC, NH*			*0.1*	*0.979 (0.028)*	*0.0*	*20*	*10*	*3*	*616*	*73.01*	*17.43*
Blackburnian Warbler	**NC, NH**	**26, 27, 28**		**-1.1***		**8.0**	**5**	**1**	**1**	**52**	**5.62**	**3.94**
Pine Warbler	NC			6.6***		0.0	0	0	0	0	0.00	0.00
Prairie Warbler †	***SSD***		***ME, VT, MA***	***5.7***		***4.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Palm Warbler	SSD, NC		NH	0.4		2.0	0	0	0	0	0.00	0.00
Bay-breasted Warbler	**NC**	**26, 27, 28**	**ME, VT, NH, NY**	**-5.2*****		**10.0**	**3**	**0**	**0**	**29**	**4.23**	**1.50**
Blackpoll Warbler	***SSD, NC***		***VT, MA***	***-8.2******	***0.904 (0.067)***	***4.5***	***7***	***6***	***1***	***220***	***49.90***	***8.00***
Black-and-white Warbler	***NC, NH***	***26***		***-3.2******	***0.894 (0.034)****	***9.0***	***14***	***6***	***1***	***454***	***34.66***	***7.50***
American Redstart	***NH***	***26***		***-3.3******	***0.927 (0.027)****	***9.0***	***13***	***6***	***1***	***970***	***77.89***	***13.00***

Table 2 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/ yr[12]	Adults/yr active sta.[13]
Ovenbird	***NC, NH***	***27***		***-0.8******	***0.964 (0.036)***	***8.5***	***18***	***15***	***8***	***906***	***90.96***	***44.90***
Northern Waterthrush	NC, NH			-2.0***	1.014 (0.108)	1.0	2	2	1	93	11.10	2.50
Louisiana Waterthrush				1.5		2.0	1	0	0	12	0.71	0.71
Mourning Warbler	***SSD, NC***		***MA***	***-2.5******		***6.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Common Yellowthroat	***SSD***			***-1.4******	***0.861 (0.026)****	***5.0***	***19***	***12***	***6***	***972***	***75.64***	***30.90***
Wilson's Warbler	SSD, NC			-7.1***		2.0	1	0	0	4	0.40	0.00
Canada Warbler	***NC, NH***	***26, 27, 28***	***ME, VT, NH, MA, NY***	***-6.0******	***0.901 (0.042)****	***11.0***	***6***	***3***	***2***	***153***	***16.09***	***9.89***
Scarlet Tanager	**NH**	**26, 27**		**-1.3****	**0.947 (0.072)****	**9.0**	**9**	**0**	**0**	**45**	**7.32**	**3.63**
Eastern Towhee	***SSD***			***-7.5******		***4.0***	***1***	***0***	***0***	***25***	***1.33***	***0.00***
Chipping Sparrow	***SSD, NC, NH***			***-0.1***	***0.767 (0.101)****	***4.5***	***2***	***1***	***0***	***34***	***2.81***	***0.25***
Field Sparrow	***SSD***		***VT, MA***	***-7.6******	***0.780 (0.066)****	***7.0***	***1***	***1***	***0***	***44***	***2.56***	***0.00***
Vesper Sparrow	**SSD**		**ME, VT, MA, NY**	**-4.2**		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Savannah Sparrow	**SSD**			**-1.1****		**4.0**	**1**	**1**	**0**	**44**	**3.14**	**0.00**
Grasshopper Sparrow	**SSD**		**ME, VT, NH, MA, NY**	**-16.0****		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Nelson's Sharp-tailed Spar.	**SSD**	**27, 28**	**ME**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Saltmarsh Sharp-tailed Sp.	**SSD**	**27**	**ME**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Song Sparrow	SSD			-0.4	0.960 (0.015)	2.0	10	5	3	927	35.86	20.81
Lincoln's Sparrow	SSD, NC			-2.3*		2.0	0	0	0	0	0.00	0.00
Swamp Sparrow	SSD, NC, NH			1.0	0.954 (0.069)	2.0	3	2	1	101	6.60	3.00
White-throated Sparrow	***SSD, NC***			***-1.6******	***0.821 (0.025)****	***5.0***	***19***	***15***	***4***	***1004***	***132.95***	***24.61***
Dark-eyed Junco	SSD, NC			-1.6***	1.115 (0.067)	1.0	14	9	2	400	50.29	6.81
Northern Cardinal	SSD, NH			8.9***	1.003 (0.020)	0.0	3	0	0	44	4.29	3.40
Rose-breasted Grosbeak	***NH***	***26, 27***		***-4.7******	***0.916 (0.038)****	***9.0***	***7***	***3***	***1***	***159***	***16.68***	***4.29***
Indigo Bunting	***SSD***			***-1.1***	***0.901 (0.018)****	***4.5***	***4***	***1***	***0***	***88***	***7.06***	***1.50***
Bobolink	**SSD**	**27**	**ME, VT**	**-5.7*****		**10.0**	**1**	**0**	**0**	**3**	**0.33**	**0.00**
Red-winged Blackbird	***SSD***			***-1.6******	***0.820 (0.047)****	***5.0***	***2***	***2***	***1***	***171***	***16.36***	***3.14***

Table 2 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/ yr[12]	Adults/yr active sta.[13]
Eastern Meadowlark	**SSD**		**ME, VT, NH, MA, NY**	**-6.2*** **		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Rusty Blackbird	NC		ME, VT, NH, NY	-2.5		2.0	0	0	0	0	0.00	0.00
Common Grackle	SSD, NC, NH			-0.1	1.026 (0.110)	2.0	4	1	0	38	4.11	1.13
Brown-headed Cowbird	***SSD, NH***			***-5.6**** **		***4.0***	***2***	***0***	***0***	***20***	***1.00***	***0.00***
Baltimore Oriole	***NH, NH***			***-1.6****	***0.881 (0.052)****	***5.0***	***4***	***1***	***0***	***185***	***11.85***	***1.96***
Purple Finch	**NC, NH**	**27**	**NH**	**-1.0**		**8.0**	**6**	**0**	**0**	**39**	**6.80**	**2.25**
House Finch	SSD			-0.1		0.0	1	0	0	29	1.00	0.00
White-winged Crossbill	NC			-5.5*		2.0	0	0	0	0	0.00	0.00
Pine Siskin	NC, NH			-5.4***		2.0	1	0	0	1	1.00	0.00
American Goldfinch	*SSD*			*1.8****	*0.956 (0.023)*	*0.0*	*7*	*2*	*1*	*382*	*40.76*	*6.49*
Evening Grosbeak	NC, NH			-9.9***		2.0	0	0	0	0	0.00	0.00
House Sparrow	SSD			-3.8***		2.0	1	0	0	1	0.10	0.10

[1] The list includes species captured at ≥ 1 Northeast MAPS station in BCR 14 operated during 1989-2006 (data from 179 of 183 stations operated during this time period) and species listed as focal species in ≥ 1 National Partners in Flight (PIF) Physiographic Area Plan or State Wildlife Action Plan for BCR 14. We excluded waterbirds, raptors, upland gamebirds, hummingbirds, nocturnal species, species that do not breed in the region, and individuals not identified to species (except for Willow and Alder flycatchers). For Willow and Alder flycatchers, we indicate PIF Area and State listings and BBS trends, but for MAPS analyses, we grouped these species under the name "Traill's Flycatcher" because most individuals of these two species cannot be reliably identified to species in the hand. ‡ = Estimates of survival probability ($\hat{\phi}$) and population growth rate ($\hat{\lambda}$) should be viewed with caution because they are based on fewer than five between-year recaptures, or the survival estimate is very imprecise (SE($\hat{\phi}$)>0.200 or CV($\hat{\phi}$)>50.0%). † = Species met minimum requirements for inclusion in survival/lambda analysis, but estimates for survival or recapture probability (or both) were either 1.0 or 0.0 at the Northeast regional (USFWS Region 5) scale, so that no survival or recapture probabilities are available at the BCR scale

[2] Habitat designations: SSD - Scrub/Successional/Disturbed; NC - Northern Coniferous Forest; NH - Northern Hardwood Forest; SH - Southern Hardwood Forest; SC - Southern Coniferous Forest. See Methods for detail. When no habitat is listed, the species occurs in habitats not considered a priority in the BCR.

[3] National Partners in Flight (PIF) Physiographic Area Plans in which the species was listed as a Tier 1 or 2 Priority species. See Methods for detail.

[4] State Wildlife Action Conservation Plans in which the species was listed as priority or focal species, usually defined as an Endangered Species, Threatened Species, or Species of Special Concern. See Methods for detail about listing of priority species within BCRs, and see Appendix 2 for a list of PIF Plans.

[5] Population trends for 1980-2006 according to Breeding Bird Survey (BBS) data. *** $P < 0.01$; ** $0.01 < P < 0.05$; * $0.05 < P < 0.10$.

Table 2 continued.

[6] Time-constant (1992-2003) model-averaged estimates of lambda for the BCR (λ = population size at time t+1 divided by population size at time t, or N(t+1)/N(t)). Values < 1.0 indicate declining trends and values > 1.0 indicate increasing trends. Lambda calculations only include data from stations at which the species was a usual breeder. See Methods for detail. ** = significant trend at $P < 0.05$.

[7] Priority Score is based on PIF and state plan listings BBS and MAPS trends. Priority Scores ranged from 0 (not listed and no significant trend) to 11 (listed in both PIF and state plans and showing significant negative BBS and MAPS trends).

[8] Number of stations at which the species was captured and was a usual breeder (see Methods for detail).

[9] Number of stations for which the number of adults captured per year was ≥ 2.5 and the species was a usual breeder (see Methods for detail).

[10] Number of stations believed to have operated in 2007 at which the species was a usual breeder and at which the mean numbers of adults captured of the species was ≥ 2.5 per year.

[11] Number of captures of the species during 1989-2006 at all stations pooled at which the species was a usual breeder.

[12] Mean number of adults per year during 1989-2006 pooled from all stations at which the species was a usual breeder.

[13] Mean number of adults per year during 1989-2006 pooled from stations believed to have operated in 2007 at which the species was a usual breeder.

Table 3. Landbird species (see Appendix 2 for scientific names) considered for our analysis in **Bird Conservation Region 13, Lower Great Lakes/St. Lawrence Plain**. Priority species (priority score ≥ 2.5) for BCR 13 are presented in **bold** type and monitorable species (see Methods) in *italic* type. For each species, we summarize, for BCR 13, PIF and state plan listings, priority scores,1980-2006 Breeding Bird Survey (BBS) trends and 1992-2003 MAPS data, and monitoring priority scores.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Mourning Dove	SSD			1.8***		0.0	1	0	0	1	0.20	0.00
Yellow-billed Cuckoo	SSD, NH, SH			-2.0		2.0	0	0	0	0	0.00	0.00
Black-billed Cuckoo	**SSD, NH, SH**	**15, 24**	**NY**	**-1.2**		**8.0**	**4**	**0**	**0**	**23**	**2.56**	**0.33**
Chimney Swift	**SSD**		**VT, PA**	**-1.1****		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Belted Kingfisher	SSD, NH, SH			-1.9*		2.0	2	0	0	3	0.24	0.10
Red-headed Woodpecker	**SSD, SH**	**15**	**NY**	**-5.3*****		**10.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Red-bellied Woodpecker	SH			9.1***		0.0	1	0	0	6	0.50	0.50
Yellow-bellied Sapsucker	NH			9.2***		0.0	3	0	0	32	2.45	0.00
Downy Woodpecker	SSD, NH, SH			0.2	0.991 (0.034)	0.0	13	3	1	264	19.41	4.90
Hairy Woodpecker	NH, SH			1.7		0.0	5	0	0	22	2.31	0.30
Northern Flicker	**SSD, NH, SH**			**-2.2*****	**0.984 (0.049)**	**2.5**	**7**	**1**	**0**	**58**	**6.43**	**0.55**
Pileated Woodpecker	NH, SH,			6.2***		0.0	0	0	0	0	0.00	0.00
Olive-sided Flycatcher				-0.3		2.0	0	0	0	0	0.00	0.00
Eastern Wood-Pewee	***NH, SH***	***15***		***-2.4*****	***0.984 (0.000)***	***8.5***	***6***	***0***	***0***	***25***	***3.17***	***0.47***
Acadian Flycatcher	SH			3.3		2.0	0	0	0	0	0.00	0.00
Alder Flycatcher	SSD, NH			1.1		0.0	0	0	0	0	0.00	0.00
Traill's Flycatcher	***SSD, NH***			***0.7***	***0.992 (0.026)***	***8.0***	***12***	***9***	***2***	***660***	***83.81***	***17.32***
Willow Flycatcher	***SSD***	***15, 24***	***NY***	***0.2***		***8.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Least Flycatcher	***SSD, NH***			***-2.0****	***0.961 (0.061)***	***4.5***	***7***	***2***	***0***	***117***	***14.31***	***1.20***
Eastern Phoebe	SSD, NH, SH			0.5	1.044 (0.124)	2.0	8	0	0	192	6.99	3.73
Great Crested Flycatcher	NH, SH			0.2	0.977 (0.000)	0.0	5	0	0	39	7.04	1.10
Eastern Kingbird	**SSD**			**-2.1*****	**0.992 (0.000)**	**4.5**	**5**	**0**	**0**	**32**	**4.47**	**0.80**
Loggerhead Shrike	**SSD**	**15**	**NY**	**-32.0****		**10.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
White-eyed Vireo	SSD, SH			1.3		0.0	0	0	0	0	0.00	0.00
Yellow-throated Vireo	NH, SH			1.4		2.0	1	0	0	24	2.10	2.10

Table 3 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Blue-headed Vireo	NH			0.1		0.0	0	0	0	0	0.00	0.00
Warbling Vireo †	NH, SH			1.6***		0.0	5	1	0	116	9.69	1.60
Philadelphia Vireo	NH			-1.9		0.0	0	0	0	0	0.00	0.00
Red-eyed Vireo	*NH, SH*			*3.9****	*1.034 (0.033)*	*0.0*	*13*	*5*	*1*	*442*	*48.99*	*7.70*
Blue Jay	NH, SH			0.8**		0.0	8	0	0	20	5.77	1.47
Purple Martin	SSD, NH, SH			-4.1***		2.0	0	0	0	0	0.00	0.00
Tree Swallow †	SSD, NH			0.0		0.0	5	0	0	16	2.10	1.07
N. Rough-winged Swallow	SSD			-1.6**		2.0	3	1	0	31	3.93	0.00
Barn Swallow	SSD			-1.6***		2.0	0	0	0	0	0.00	0.00
Bank Swallow	**SSD**		**PA**	**-4.8*****		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Cliff Swallow	SSD			-2.4		0.0	0	0	0	0	0.00	0.00
Carolina Chickadee	SH			1.2		0.0	0	0	0	0	0.00	0.00
Black-capped Chickadee	*NH*			*1.0**	*1.029 (0.053)*	*0.0*	*17*	*11*	*3*	*662*	*76.34*	*20.23*
Tufted Titmouse	NH, SH			5.7***	1.240 (0.227)	0.0	4	0	0	44	3.42	2.67
Red-breasted Nuthatch				2.5		0.0	0	0	0	0	0.00	0.00
White-breasted Nuthatch	NH, SH			2.5***		0.0	3	0	0	23	0.70	0.20
Brown Creeper	NH			0.7		0.0	1	0	0	12	0.20	0.00
Carolina Wren	SH			12.2***		0.0	0	0	0	0	0.00	0.00
House Wren	SSD			0.5	1.000 (0.000)	0.0	7	5	2	218	27.67	12.37
Winter Wren				1.7		2.0	0	0	0	0	0.00	0.00
Sedge Wren	**SSD**	**15, 24**	**VT, NY, PA**	**6.2****		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Marsh Wren	**SSD**		**PA**	**4.7**		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Golden-crowned Kinglet				0.3		0.0	0	0	0	0	0.00	0.00
Ruby-crowned Kinglet				-15.0		0.0	0	0	0	0	0.00	0.00
Blue-gray Gnatcatcher	SSD, SH			0.8		0.0	1	0	0	12	0.70	0.70
Eastern Bluebird	SSD			5.1***		0.0	3	0	0	31	2.35	2.10
Veery	*NH, SH*			*-0.1*	*0.959 (0.014)*	*2.0*	*9*	*8*	*1*	*554*	*53.09*	*12.20*
Swainson's Thrush				0.2		0.0	0	0	0	0	0.00	0.00
Hermit Thrush	NH			3.0		0.0	0	0	0	0	0.00	0.00
Wood Thrush	***NH, SH***	***24***	***VT, NY, PA***	***-1.4***	***1.025 (0.031)***	***8.0***	***9***	***8***	***1***	***376***	***47.13***	***4.50***
American Robin	*SSD, NH, SH*			*0.5*	*1.069 (0.057)*	*0.0*	*17*	*11*	*3*	*494*	*75.27*	*12.22*
Gray Catbird	*SSD, NH, SH*			*0.0*	*1.011 (0.021)*	*2.0*	*16*	*16*	*4*	*2648*	*327.19*	*78.28*

Table 3 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Northern Mockingbird	SSD			-2.1		0.0	0	0	0	0	0.00	0.00
Brown Thrasher	***SSD***		***VT***	***-1.0***	***1.001 (0.104)***	***4.0***	***3***	***0***	***0***	***14***	***3.40***	***0.00***
European Starling	SSD, NH, SH			-1.2***		2.0	4	0	0	9	2.24	0.10
Cedar Waxwing	**SSD, NH, SH**			**-1.4****	**0.944 (0.030)****	**3.0**	**12**	**9**	**2**	**513**	**112.81**	**15.98**
Blue-winged Warbler	***SSD, SH***	***24***	***VT, NY, PA***	***0.9***	***1.350 (0.242)***	***8.0***	***6***	***3***	***2***	***120***	***18.97***	***12.17***
Golden-winged Warbler	**SSD**	**15, 24**	**VT, NY, PA**	**1.8**		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Tennessee Warbler	SSD, NH			-15.0***		2.0	0	0	0	0	0.00	0.00
Nashville Warbler	NH			0.8		0.0	0	0	0	0	0.00	0.00
Northern Parula	SH			11.3		2.0	0	0	0	0	0.00	0.00
Yellow Warbler	***SSD***			***0.0***	***0.937 (0.016)****	***4.0***	***16***	***15***	***3***	***2867***	***308.37***	***43.00***
Chestnut-sided Warbler	SSD, NH			1.5**	0.725 (0.040)**	2.0	4	4	1	185	20.45	10.75
Magnolia Warbler				2.9		0.0	1	1	1	38	6.25	6.25
Black-throated Blue Warbler	***NH***			***-1.2***	***0.793 (0.069)****	***4.5***	***1***	***1***	***0***	***43***	***3.10***	***0.00***
Yellow-rumped Warbler				1.6		0.0	0	0	0	0	0.00	0.00
Black-throated Green Warbler	NH			2.1		0.0	1	0	0	8	0.40	0.00
Blackburnian Warbler	NH			-0.2		2.0	0	0	0	0	0.00	0.00
Pine Warbler				13.7***		0.0	0	0	0	0	0.00	0.00
Prairie Warbler †	SSD			-3.0		2.0	0	0	0	0	0.00	0.00
Bay-breasted Warbler				4.4**		2.0	0	0	0	0	0.00	0.00
Blackpoll Warbler	SSD			5.9		0.0	0	0	0	0	0.00	0.00
Cerulean Warbler	**SH**	**15, 24**	**VT, NY, PA**	**1.7**		**8.0**	**1**	**0**	**0**	**1**	**0.00**	**0.00**
Black-and-white Warbler	NH, SH			1.3	0.979 (0.075)	2.0	3	0	0	40	3.43	0.00
American Redstart	***NH, SH***			***0.6***	***0.915 (0.028)****	***3.0***	***9***	***8***	***2***	***374***	***36.85***	***8.25***
Prothonotary Warbler	***SH***	***15***	***NY***			***8.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Worm-eating Warbler	SH			-3.1		2.0	0	0	0	0	0.00	0.00
Ovenbird	*NH, SH*			*0.1*	*0.993 (0.028)*	*2.0*	*5*	*1*	*0*	*215*	*12.70*	*1.00*
Northern Waterthrush	NH			1.8		0.0	0	0	0	0	0.00	0.00
Louisiana Waterthrush	***SH***	***15, 24***	***NY, PA***	***-0.3***		***8.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***

Table 3 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Kentucky Warbler	SH			16.3**		2.0	0	0	0	0	0.00	0.00
Mourning Warbler	SSD			-0.9		2.0	1	0	0	23	1.20	0.00
Common Yellowthroat	***SSD***			***0.0***	***0.939 (0.020)*****	***4.0***	***16***	***14***	***4***	***1948***	***188.56***	***55.70***
Hooded Warbler	SH			5.4**		2.0	1	0	0	5	0.43	0.00
Wilson's Warbler	SSD			13.5		0.0	0	0	0	0	0.00	0.00
Canada Warbler	***NH***	***15, 24***	***VT, NY***	***-2.0***		***8.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Yellow-breasted Chat †	***SSD, SH***		***NY***	***1.0***		***4.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Scarlet Tanager	**NH, SH**	**24**	**PA**	**0.7**		**8.0**	**3**	**0**	**0**	**18**	**1.34**	**0.80**
Eastern Towhee	***SSD***	***24***	***VT***	***0.2***	***0.717 (0.297)*****	***9.0***	***4***	***0***	***0***	***16***	***4.92***	***1.25***
Chipping Sparrow	SSD, NH, SH			-0.3		2.0	5	1	0	28	9.62	1.42
Field Sparrow	***SSD***	***15, 24***	***VT***	***-2.9******	***0.810 (0.084)*****	***11.0***	***8***	***3***	***2***	***127***	***17.83***	***8.83***
Vesper Sparrow	SSD			-1.3		2.0	0	0	0	0	0.00	0.00
Savannah Sparrow	**SSD**			**-1.9*****		**4.0**	**1**	**0**	**0**	**4**	**0.75**	**0.75**
Grasshopper Sparrow	**SSD**	**24**	**VT, NY**	**-5.1****		**10.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Henslow's Sparrow	**SSD**	**15, 24**	**VT, NY, PA**	**-20.0****		**10.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Song Sparrow	***SSD***			***-0.4****	***0.960 (0.013)***	***4.5***	***16***	***15***	***4***	***2579***	***226.11***	***65.52***
Lincoln's Sparrow	SSD			2.5		0.0	0	0	0	0	0.00	0.00
Swamp Sparrow	SSD, NH			2.7***	0.938 (0.035)**	2.0	7	5	1	504	28.74	4.20
White-throated Sparrow	SSD			-1.1		2.0	2	2	0	69	5.50	0.00
Dark-eyed Junco	SSD			-0.3		0.0	0	0	0	0	0.00	0.00
Northern Cardinal	*SSD, NH, SH*			*1.6****	*1.004 (0.018)*	*0.0*	*14*	*8*	*2*	*186*	*33.22*	*9.77*
Rose-breasted Grosbeak	***NH, SH***	***24***		***-1.2****	***0.929 (0.026)*****	***9.0***	***10***	***4***	***0***	***127***	***21.28***	***0.25***
Indigo Bunting	SSD			-0.1		2.0	3	2	2	46	7.50	6.50
Bobolink	**SSD**	**15**	**VT**	**-3.1*****		**10.0**	**1**	**0**	**0**	**4**	**0.40**	**0.00**
Red-winged Blackbird	***SSD***			***-0.8*****	***0.982 (0.057)***	***4.5***	***11***	***5***	***1***	***176***	***29.51***	***4.58***
Eastern Meadowlark	**SSD**		**VT, NY**	**-3.0*****		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Common Grackle	**SSD, NH, SH**			**-1.0****	**1.382 (0.283)**	**3.0**	**8**	**1**	**0**	**48**	**9.68**	**2.18**
Brown-headed Cowbird	***SSD, NH, SH***			***-1.7******	***0.786 (0.218)*****	***5.0***	***8***	***1***	***0***	***52***	***11.24***	***0.17***
Orchard Oriole	SSD, SH, NH			5.7*		0.0	0	0	0	0	0.00	0.00
Baltimore Oriole	***NH, SH***	***15***		***-0.6***	***0.948 (0.051)*****	***8.5***	***8***	***3***	***1***	***162***	***20.60***	***3.05***

Table 3 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Purple Finch	NH			0.9		2.0	1	0	0	9	1.40	0.00
House Finch	SSD			-0.3		0.0	1	0	0	3	0.40	0.00
Pine Siskin	NH			-4.3		0.0	0	0	0	0	0.00	0.00
American Goldfinch	*SSD*			*1.0***	*0.956 (0.020)*	*0.0*	*16*	*13*	*4*	*932*	*180.34*	*45.95*
Evening Grosbeak	NH			-6.7		0.0	0	0	0	0	0.00	0.00
House Sparrow	SSD			-2.7***		2.0	1	0	0	2	0.50	0.00

[1] The list includes species captured at ≥ 1 Northeast MAPS station operated in BCR 13 during 1989-2006 (data from 179 of 183 stations operated during this time period) and species listed as focal species in ≥ 1 National Partners in Flight (PIF) Physiographic Area Plan or State Wildlife Action Plan for BCR 13. We excluded waterbirds, raptors, upland gamebirds, hummingbirds, nocturnal species, species that do not breed in the region, and individuals not identified to species (except for Willow and Alder flycatchers). For Willow and Alder flycatchers, we indicate PIF Area and State listings and BBS trends, but for MAPS analyses, we grouped these species under the name "Traill's Flycatcher" because most individuals of these two species cannot be reliably identified to species in the hand. ‡ = Estimates of survival probability ($\hat{\phi}$) and population growth rate ($\hat{\lambda}$) should be viewed with caution because they are based on fewer than five between-year recaptures, or the survival estimate is very imprecise (SE($\hat{\phi}$)>0.200 or CV($\hat{\phi}$)>50.0%). † = Species met minimum requirements for inclusion in survival/lambda analysis, but estimates for survival or recapture probability (or both) were either 1.0 or 0.0 at the Northeast regional (USFWS Region 5) scale, so that no survival or recapture probabilities are available at the BCR scale

[2] Habitat designations: SSD - Scrub/Successional/Disturbed; NC - Northern Coniferous Forest; NH - Northern Hardwood Forest; SH - Southern Hardwood Forest; SC - Southern Coniferous Forest. See Methods for detail. When no habitat is listed, the species occurs in habitats not considered a priority habitat.

[3] National Partners in Flight (PIF) Physiographic Area Plans in which the species was listed as a Tier 1 or 2 Priority species. See Methods for detail.

[4] State Wildlife Action Conservation Plans in which the species was listed as priority or focal species, usually defined as an Endangered Species, Threatened Species, or Species of Special Concern. See Methods for detail about listing of priority species within BCRs, and see Appendix 2 for a list of PIF Plans.

[5] Population trends for 1980-2006 according to Breeding Bird Survey (BBS) data. *** $P < 0.01$; ** $0.01 < P < 0.05$; * $0.05 < P < 0.10$.

[6] Time-constant (1992-2003) model-averaged estimates of lambda for the BCR (λ = population size at time t+1 divided by population size at time t, or N(t+1)/N(t)). Values < 1.0 indicate declining trends and values > 1.0 indicate increasing trends. Lambda calculations only include data from stations at which the species was a usual breeder. See Methods for detail. ** = significant trend at $P < 0.05$.

[7] Priority Score is based on PIF and state plan listings BBS and MAPS trends. Priority Scores ranged from 0 (not listed and no significant trend) to 11 (listed in both PIF and state plans and showing significant negative BBS and MAPS trends).

[8] Number of stations at which the species was captured and was a usual breeder (see Methods for detail).

[9] Number of stations for which the number of adults captured per year was ≥ 2.5 and the species was a usual breeder (see Methods for detail).

[10] Number of stations believed to have operated in 2007 at which the species was a usual breeder and at which the mean numbers of adults captured of the species was ≥ 2.5 per year.

[11] Number of captures of the species during 1989-2006 at all stations pooled at which the species was a usual breeder.

[12] Mean number of adults per year during 1989-2006 pooled from all stations at which the species was a usual breeder.

[13] Mean number of adults per year during 1989-2006 pooled from stations believed to have operated in 2007 at which the species was a usual breeder.

Table 4. Landbird species (see Appendix 2 for scientific names) considered for our analysis in **Bird Conservation Region 28, Appalachian Mountains**. Priority species (priority score ≥ 2.5) for BCR 28 are presented in **bold** type and monitorable species (see Methods) in *italic* type. For each species, we summarize, for BCR 28, PIF and state plan listings, priority scores,1980-2006 Breeding Bird Survey (BBS) trends and 1992-2003 MAPS data, and monitoring priority scores.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Mourning Dove	SSD			1.4***		0.0	4	0	0	9	0.56	0.20
Yellow-billed Cuckoo	**SSD, NH, SH**			**-1.0***		**4.0**	**3**	**0**	**0**	**7**	**1.12**	**0.67**
Black-billed Cuckoo	**SSD, NH, SH**	**22, 24**	**NY, WV**	**-3.4****		**10.0**	**3**	**0**	**0**	**10**	**0.85**	**0.85**
Chimney Swift	**SSD**	**22**	**PA**	**-1.3*****		**10.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Belted Kingfisher	SSD, NH, SH			-0.9		0.0	1	0	0	2	0.20	0.20
Red-headed Woodpecker	**SSD, SH**	**12, 17**	**NY, MD, WV**	**-2.4**		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Red-bellied Woodpecker	SH			4.5***	0.987 (0.058)	0.0	8	0	0	20	3.39	1.10
Yellow-bellied Sapsucker	NC, NH		WV, VA	9.1***	1.010 (0.050)	2.0	6	2	2	114	11.04	11.04
Downy Woodpecker	SSD, NH, SH			-0.4	0.983 (0.018)	0.0	38	3	2	573	38.00	17.60
Hairy Woodpecker	NC, NH, SH			2.4	1.014 (0.028)	0.0	22	0	0	142	9.84	4.60
Northern Flicker	SSD, NC, NH, SH			-0.2	0.994 (0.058)	0.0	14	0	0	53	6.94	3.51
Pileated Woodpecker	NH, SH			1.0*		0.0	11	0	0	22	1.62	0.60
Olive-sided Flycatcher	**NC**	**12**	**PA, MD, WV**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Eastern Wood-Pewee	***NH, SH***	***12, 17***	***WV***	***-3.9*****	***0.953 (0.035)***	***10.5***	***24***	***2***	***0***	***216***	***32.91***	***9.55***
Yellow-bellied Flycatcher	NC		PA, WV	-9.5		2.0	1	0	0	1	1.00	0.00
Acadian Flycatcher	***SH***	***12, 21, 22***	***WV***	***-1.8*****	***0.982 (0.037)***	***10.5***	***10***	***4***	***0***	***122***	***18.77***	***0.75***
Alder Flycatcher	SSD, NC, NH		PA, MD, WV	6.1***		2.0	0	0	0	0	0.00	0.00
Traill's Flycatcher	***SSD, NC, NH***			***0.5***	***0.916 (0.055)****	***10.0***	***8***	***4***	***2***	***230***	***26.43***	***18.16***
Willow Flycatcher	***SSD***	***12, 17, 22, 24***	***NY***	***0.0***		***8.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***

Table 4 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Least Flycatcher	***SSD, NH***		***NJ***	***-1.7******	***1.177 (0.168)***	***5.0***	***2***	***0***	***0***	***24***	***2.65***	***1.75***
Eastern Phoebe	SSD, NH, SH			0.2	1.027 (0.083)	2.0	23	2	1	225	23.14	11.55
Great Crested Flycatcher	***NH, SH***			***-1.7******	***0.974 (0.025)***	***2.5***	***18***	***1***	***0***	***87***	***13.05***	***1.91***
Eastern Kingbird	SSD			-0.2		2.0	2	0	0	5	1.17	1.17
Loggerhead Shrike	**SSD**	**12**	**MD, WV, VA**	**-5.4****		**10.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
White-eyed Vireo	***SSD, SH***			***-1.0****	***0.922 (0.068)****	***3.0***	***3***	***2***	***2***	***118***	***8.21***	***5.92***
Yellow-throated Vireo	**NH, SH**	**12, 22**		**-0.5**		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Blue-headed Vireo	NC, NH		NJ	4.1***	0.942 (0.033)**	2.0	15	4	0	141	27.90	2.33
Warbling Vireo †	NH, SH			2.0**		0.0	3	0	0	12	1.25	1.25
Red-eyed Vireo	*NH, SH*			*0.8****	*1.042 (0.014)*	*0.0*	*45*	*21*	*10*	*1285*	*162.97*	*64.48*
Blue Jay	NH, SH			0.1	1.031 (0.054)	0.0	23	1	0	123	20.23	7.99
Purple Martin	SSD, NH, SH			-1.9		0.0	0	0	0	0	0.00	0.00
Tree Swallow †	SSD, NH			3.8***		0.0	4	0	0	7	1.42	1.25
N. Rough-winged Swallow	SSD			42.7		0.0	0	0	0	0	0.00	0.00
Bank Swallow	SSD		PA	-3.0		2.0	0	0	0	0	0.00	0.00
Cliff Swallow	SSD		NJ, WV	4.3***		2.0	0	0	0	0	0.00	0.00
Barn Swallow	SSD			-1.7***		2.0	3	0	0	13	0.66	0.33
Carolina Chickadee	SH			-0.1	0.990 (0.019)	0.0	14	4	1	233	20.59	4.50
Black-capped Chickadee	*NC, NH*			*0.3*	*1.050 (0.035)*	*0.0*	*32*	*14*	*9*	*1350*	*84.26*	*56.76*
Tufted Titmouse	*NH, SH*			*1.4****	*1.074 (0.053)*	*0.0*	*34*	*5*	*2*	*658*	*43.36*	*19.61*
Red-breasted Nuthatch	NC			6.0**		0.0	0	0	0	0	0.00	0.00
White-breasted Nuthatch	NH, SH			2.3***	1.015 (0.035)	0.0	26	1	0	138	17.54	9.65
Brown-headed Nuthatch				0.0		2.0	0	0	0	0	0.00	0.00
Brown Creeper	NC, NH		WV	0.8		2.0	3	0	0	17	1.78	0.78
Carolina Wren	*SH*			*3.7****	*1.019 (0.021)*	*0.0*	*14*	*6*	*3*	*489*	*42.47*	*25.68*
Bewick's Wren	**SSD**	**12, 21, 22**	**MD, WV, VA**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
House Wren	SSD			-1.7***	1.040 (0.038)	1.0	18	8	5	594	49.82	29.90
Winter Wren	**NC**		**VA**	**2.1***		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**

Table 4 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Sedge Wren	**SSD**	**12, 17, 22, 24**	**NY, NJ, PA, MD, WV, VA**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Marsh Wren	**SSD**		**PA, WV**	**20.0**		**4.0**	**1**	**0**	**0**	**14**	**1.20**	**1.20**
Golden-crowned Kinglet	NC			0.3		0.0	0	0	0	0	0.00	0.00
Blue-gray Gnatcatcher	SSD, SH			-2.0***		2.0	7	1	1	79	6.97	4.40
Eastern Bluebird	SSD			1.1**	0.824 (0.220)**	0.0	6	1	0	34	6.63	1.70
Veery	*NH, SH*			*-0.6*	*0.956 (0.008)*	*2.0*	*26*	*18*	*9*	*2433*	*207.46*	*81.45*
Bicknell's Thrush †	***SSD, NC***	***24***	***NY***			***8.0***	***1***	***1***	***0***	***8***	***7.00***	***0.00***
Swainson's Thrush	NC		PA, WV	2.3*		2.0	1	1	0	11	7.00	0.00
Hermit Thrush	*NC, NH*			*3.7****	*0.961 (0.042)*	*0.0*	*11*	*2*	*2*	*196*	*20.05*	*15.21*
Wood Thrush	***NH, SH***	***12, 17, 21, 22, 24***	***NY, PA, WV***	***-1.6****	***1.008 (0.014)***	***9.0***	***40***	***24***	***7***	***1512***	***175.01***	***45.81***
American Robin	*SSD, NC, NH, SH*			*0.1*	*1.000 (0.026)*	*0.0*	*29*	*12*	*6*	*779*	*75.95*	*46.33*
Gray Catbird	*SSD, NH, SH*			*0.3*	*0.962 (0.011)*	*2.0*	*39*	*31*	*17*	*4470*	*404.26*	*262.48*
Northern Mockingbird	SSD			1.1**		0.0	2	0	0	8	1.25	1.25
Brown Thrasher	***SSD***	***12, 17***		***0.3***	***0.984 (0.068)***	***6.0***	***6***	***1***	***1***	***76***	***7.78***	***6.28***
European Starling	SSD, NH, SH			-0.4		0.0	1	0	0	2	0.17	0.00
Cedar Waxwing	**SSD, NC, NH, SH**			**-0.4**	**0.874 (0.035)****	**2.5**	**17**	**6**	**3**	**249**	**35.58**	**18.95**
Blue-winged Warbler	***SSD, SH***	***12, 17, 22, 24***	***NY, PA, WV***	***-2.9****	***0.978 (0.044)***	***10.5***	***10***	***3***	***2***	***253***	***20.53***	***14.36***
Golden-winged Warbler	**SSD**	**12, 17, 21, 22, 24**	**NY, NJ, PA, WV, VA**	**-6.4*** **		**10.0**	**4**	**2**	**0**	**25**	**13.21**	**1.21**
Nashville Warbler	***NC, NH***		***MD, WV***	***-4.8****		***4.0***	***1***	***0***	***0***	***19***	***1.83***	***1.83***
Northern Parula	***NC, SH***	***12***	***NJ***	***0.5***	***1.060 (0.135)***	***8.0***	***4***	***0***	***0***	***23***	***3.83***	***3.83***
Yellow Warbler	***SSD***			***-1.0**** **	***0.893 (0.028)****	***5.0***	***11***	***5***	***3***	***455***	***47.04***	***24.79***
Chestnut-sided Warbler	SSD, NH			2.8***	0.945 (0.023)**	2.0	16	8	6	721	55.12	38.92
Magnolia Warbler	NC			3.8***	0.975 (0.047)	0.0	3	3	2	60	11.11	7.11

Table 4 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Black-throated Blue Warb.	***NC, NH***	***12***	***NY***	***2.2****		***8.0***	***1***	***0***	***0***	***26***	***2.14***	***2.14***
Yellow-rumped Warbler	NC		WV	4.0***	0.904 (0.059)**	2.0	3	1	0	36	7.45	2.45
Black-throated Green Warb.	NC, NH		NJ	3.1***	0.974 (0.059)	2.0	4	0	0	25	3.94	3.61
Blackburnian Warbler	**NC, NH**	**12**	**MD, WV**	**3.0****		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Yellow-throated Warbler	**SH**	**22**		**0.7**		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Pine Warbler	NC			1.0		0.0	3	0	0	20	0.90	0.17
Prairie Warbler †	***SSD***	***12, 17, 21, 22, 24***	***WV***	***-4.5*****		***9.0***	***2***	***1***	***0***	***9***	***4.20***	***1.20***
Bay-breasted Warbler	**NC**		**NY**			**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Blackpoll Warbler	SSD, NC		PA			2.0	1	1	0	7	5.00	0.00
Cerulean Warbler	**SH**	**12, 17, 21, 22, 24**	**NY, NJ, PA, WV, VA**	**-2.1****		**10.0**	**4**	**0**	**0**	**11**	**1.86**	**0.00**
Black-and-white Warbler	***NC, NH, SH***			***-1.5*****	***1.076 (0.024)****	***3.0***	***20***	***5***	***0***	***563***	***34.45***	***10.54***
American Redstart	*NH, SH*			*0.2*	*0.991 (0.008)*	*2.0*	*26*	*15*	*4*	*3545*	*228.02*	*61.29*
Prothonotary Warbler	***SH***	***22***	***NY, WV***	***-5.9***		***8.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Worm-eating Warbler	***SH***	***12, 17, 21, 22, 24***	***NY, WV***	***-1.3****	***1.042 (0.019)***	***9.0***	***13***	***11***	***6***	***985***	***76.72***	***26.55***
Swainson's Warbler	**SH**	**21, 22**	**WV, VA**	**5.1***		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Ovenbird	*NC, NH, SH*			*1.6****	*1.005 (0.011)*	*2.0*	*42*	*33*	*16*	*2643*	*223.68*	*84.94*
Northern Waterthrush	NC, NH		WV	-6.6		2.0	0	0	0	0	0.00	0.00
Louisiana Waterthrush	***SH***	***12, 17, 21, 22, 24***	***NY, PA, WV***	***-0.4***	***1.138 (0.127)***	***8.0***	***9***	***4***	***3***	***132***	***17.67***	***13.34***
Kentucky Warbler	***SH***	***12, 17, 21, 22***	***NY, NJ, WV***	***-3.4*****		***10.0***	***4***	***2***	***0***	***49***	***12.50***	***2.00***
Mourning Warbler	***SSD, NC***		***MD***	***2.2***	***0.856 (0.063)****	***5.0***	***2***	***1***	***1***	***98***	***7.18***	***7.18***
Common Yellowthroat	***SSD***			***-0.8*****	***0.969 (0.021)***	***4.5***	***25***	***17***	***12***	***1289***	***130.26***	***93.16***
Hooded Warbler	***SH***	***12, 22***		***1.9*****	***0.982 (0.017)***	***6.0***	***13***	***8***	***2***	***1012***	***74.87***	***11.23***
Canada Warbler	***NC, NH***	***12, 17, 24***	***NY, NJ***	***1.6***	***0.904 (0.034)****	***9.0***	***5***	***3***	***1***	***155***	***14.88***	***6.43***

Table 4 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Yellow-breasted Chat †	***SSD, SH***	***12, 22***	***NY, NJ***	***-2.8****		***10.5***	***3***	***1***	***1***	***61***	***5.58***	***3.25***
Summer Tanager	SH			-1.9***		2.0	0	0	0	0	0.00	0.00
Scarlet Tanager	**NH, SH**	**12, 17, 22, 24**	**PA**	**-0.2**	**0.977 (0.029)**	**8.0**	**34**	**7**	**2**	**370**	**39.93**	**13.03**
Eastern Towhee	***SSD***	***12, 17, 22, 24***		***-0.3***	***1.019 (0.016)***	***6.0***	***35***	***12***	***1***	***993***	***85.65***	***19.99***
Chipping Sparrow	***SSD, NC, NH, SH***			***-1.3****	***0.829 (0.048)****	***5.0***	***18***	***4***	***2***	***278***	***41.44***	***13.54***
Field Sparrow	***SSD***	***12, 17, 22, 24***	***WV***	***-3.4****	***0.796 (0.038)****	***11.0***	***14***	***3***	***2***	***206***	***45.93***	***17.39***
Vesper Sparrow	**SSD**		**WV**	**-4.0*** **		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Savannah Sparrow	**SSD**			**-2.2*** **		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Grasshopper Sparrow	**SSD**	**12, 17, 22, 24**	**NY, WV**	**-6.0*** **		**10.0**	**1**	**0**	**0**	**3**	**0.50**	**0.00**
Henslow's Sparrow	**SSD**	**12, 17, 21, 22, 24**	**NY, PA, MD, WV, VA**	**-2.8**		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Song Sparrow	***SSD***			***-0.8****	***0.959 (0.013)***	***4.5***	***20***	***13***	***10***	***1850***	***120.41***	***90.73***
Swamp Sparrow	SSD, NC, NH			1.8**		2.0	1	0	0	14	1.17	1.17
White-throated Sparrow	***SSD, NC***			***-1.4***	***0.787 (0.075)****	***4.5***	***3***	***2***	***1***	***164***	***25.89***	***13.89***
Dark-eyed Junco	SSD, NC			0.3	1.007 (0.024)	0.0	14	3	0	1177	32.79	3.19
Northern Cardinal	*SSD, NH, SH*			*0.5***	*1.004 (0.010)*	*0.0*	*25*	*10*	*5*	*693*	*83.25*	*37.46*
Rose-breasted Grosbeak	***NH, SH***	***24***		***-1.1****	***0.923 (0.021)****	***9.0***	***17***	***3***	***1***	***211***	***23.21***	***7.46***
Blue Grosbeak	SSD			-1.7		0.0	0	0	0	0	0.00	0.00
Indigo Bunting	***SSD***	***12, 22***		***-1.4****	***0.901 (0.014)****	***9.0***	***35***	***20***	***8***	***888***	***136.76***	***47.04***
Dickcissel	**SSD**		**WV**			**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Bobolink	**SSD**		**NJ**	**0.5**		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Red-winged Blackbird	***SSD***			***-1.4****	***1.041 (0.068)***	***3.0***	***9***	***3***	***2***	***221***	***32.46***	***24.70***
Eastern Meadowlark	**SSD**		**NY, NJ**	**-2.9*** **		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Common Grackle	**SSD, NC, NH, SH**			**-1.8*** **	**1.035 (0.087)**	**3.0**	**8**	**3**	**1**	**110**	**16.79**	**7.21**
Brown-headed Cowbird	***SSD, NH, SH***			***-3.0****	***0.981 (0.055)***	***4.5***	***22***	***0***	***0***	***87***	***17.21***	***3.79***

Table 4 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Orchard Oriole	SSD, NH, SH			0.2	0.881 (0.075)**	1.0	1	1	1	36	3.63	3.63
Baltimore Oriole	***NH, SH***	***17***		***-0.2***	***1.011 (0.072)***	***6.0***	***13***	***2***	***1***	***102***	***14.62***	***8.20***
Purple Finch	NC, NH			1.8		2.0	3	0	0	7	0.64	0.11
House Finch	SSD			0.1		0.0	6	2	0	352	62.91	1.24
Pine Siskin	NC, NH		PA, WV			2.0	0	0	0	0	0.00	0.00
American Goldfinch	*SSD*			*0.2*	*0.947 (0.029)***	*1.0*	*25*	*12*	*9*	*594*	*106.25*	*79.02*

[1] The list includes species captured at ≥ 1 Northeast MAPS station operated in BCR 28 during 1989-2006 (data from 179 of 183 stations operated during this time period) and species listed as focal species in ≥ 1 National Partners in Flight (PIF) Physiographic Area Plan or State Wildlife Action Plan for BCR 28. We excluded waterbirds, raptors, upland gamebirds, hummingbirds, nocturnal species, species that do not breed in the region, and individuals not identified to species (except for Willow and Alder flycatchers). For Willow and Alder flycatchers, we indicate PIF Area and State listings and BBS trends, but for MAPS analyses, we grouped these species under the name "Traill's Flycatcher" because most individuals of these two species cannot be reliably identified to species in the hand. ‡ = Estimates of survival probability ($\hat{\phi}$) and population growth rate ($\hat{\lambda}$) should be viewed with caution because they are based on fewer than five between-year recaptures, or the survival estimate is very imprecise (SE($\hat{\phi}$)>0.200 or CV($\hat{\phi}$)>50.0%). † = Species met minimum requirements for inclusion in survival/lambda analysis, but estimates for survival or recapture probability (or both) were either 1.0 or 0.0 at the Northeast regional (USFWS Region 5) scale, so that no survival or recapture probabilities are available at the BCR scale

[2] Habitat designations: SSD - Scrub/Successional/Disturbed; NC - Northern Coniferous Forest; NH - Northern Hardwood Forest; SH - Southern Hardwood Forest; SC - Southern Coniferous Forest. See Methods for detail. When no habitat is listed, the species occurs in habitats not considered a priority habitat.

[3] National Partners in Flight (PIF) Physiographic Area Plans in which the species was listed as a Tier 1 or 2 Priority species. See Methods for detail.

[4] State Wildlife Action Conservation Plans in which the species was listed as priority or focal species, usually defined as an Endangered Species, Threatened Species, or Species of Special Concern. See Methods for detail about listing of priority species within BCRs, and see Appendix 2 for a list of PIF Plans.

[5] Population trends for 1980-2006 according to Breeding Bird Survey (BBS) data. *** $P < 0.01$; ** $0.01 < P < 0.05$; * $0.05 < P < 0.10$.

[6] Time-constant (1992-2003) model-averaged estimates of lambda for the BCR (λ = population size at time t+1 divided by population size at time t, or N(t+1)/N(t)). Values < 1.0 indicate declining trends and values > 1.0 indicate increasing trends. Lambda calculations only include data from stations at which the species was a usual breeder. See Methods for detail. ** = significant trend at $P < 0.05$.

[7] Priority Score is based on PIF and state plan listings BBS and MAPS trends. Priority Scores ranged from 0 (not listed and no significant trend) to 11 (listed in both PIF and state plans and showing significant negative BBS and MAPS trends).

[8] Number of stations at which the species was captured and was a usual breeder (see Methods for detail).

[9] Number of stations for which the number of adults captured per year was ≥ 2.5 and the species was a usual breeder (see Methods for detail).

[10] Number of stations believed to have operated in 2007 at which the species was a usual breeder and at which the mean numbers of adults captured of the species was ≥ 2.5 per year.

[11] Number of captures of the species during 1989-2006 at all stations pooled at which the species was a usual breeder.

[12] Mean number of adults per year during 1989-2006 pooled from all stations at which the species was a usual breeder.

[13] Mean number of adults per year during 1989-2006 pooled from stations believed to have operated in 2007 at which the species was a usual breeder.

Table 5. Landbird species (see Appendix 2 for scientific names) considered for our analysis in **Bird Conservation Region 30, New England/Mid-Atlantic Coast**. Priority species (priority score ≥ 2.5) for BCR 30 are presented in **bold** type and monitorable species (see Methods) in *italic* type. For each species, we summarize, for BCR 30, PIF and state plan listings, priority scores,1980-2006 Breeding Bird Survey (BBS) trends and 1992-2003 MAPS data, and monitoring priority scores.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Mourning Dove	SSD, SC			-0.1		0.0	6	0	0	24	1.23	0.83
Yellow-billed Cuckoo	**SSD, SH**	**44**	**CT**	**-4.2*** **		**10.0**	**14**	**0**	**0**	**33**	**4.37**	**1.92**
Black-billed Cuckoo	**SSD, SH**	**9**	**CT, NY**	**-13.0*** **		**10.0**	**3**	**0**	**0**	**4**	**0.58**	**0.00**
Chimney Swift	**SSD**	**9, 44**	**CT**	**-1.2*** **		**10.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Belted Kingfisher	SSD, SH			-1.3		0.0	0	0	0	0	0.00	0.00
Red-headed Woodpecker	**SSD, SH**	**9**	**CT, NY, DE, MD**	**2.7**		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Red-bellied Woodpecker	SH, SC			1.1**	0.984 (0.028)	0.0	26	0	0	176	14.13	6.71
Yellow-bellied Sapsucker	NH			5.2		0.0	0	0	0	0	0.00	0.00
Downy Woodpecker	SSD, SH			-0.4	0.981 (0.015)	0.0	47	5	3	1151	51.19	24.29
Hairy Woodpecker	***NH, SH, SC***	***9***		***-0.9***	***1.009 (0.025)***	***4.0***	***28***	***0***	***0***	***251***	***19.07***	***9.38***
Northern Flicker	**SSD, SH, SC**			**-2.8*** **	**0.985 (0.035)**	**2.5**	**27**	**0**	**0**	**117**	**10.73**	**4.46**
Pileated Woodpecker	NH, SH		RI	4.2		2.0	4	0	0	5	0.30	0.21
Eastern Wood-Pewee	***NH, SH***	***9, 44***		***-1.0****	***1.015 (0.034)***	***7.0***	***29***	***0***	***0***	***248***	***22.60***	***7.69***
Acadian Flycatcher	***SH***	***44***	***RI, CT***	***0.7***	***0.999 (0.011)***	***8.0***	***14***	***13***	***6***	***1243***	***75.82***	***40.25***
Alder Flycatcher [14]	SSD		CT	-4.4		2.0	0	0	0	0	0.00	0.00
Traill's Flycatcher [14]	***SSD***			***0.5***	***1.448 (0.239)***	***4.0***	***4***	***2***	***2***	***72***	***16.27***	***15.44***
Willow Flycatcher [14]	***SSD***		***ME, MA, NY***	***3.6***		***4.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Least Flycatcher	***SSD***		***CT***	***-6.4**** **		***6.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Eastern Phoebe	***SSD, SH***			***0.4***	***0.929 (0.028)****	***3.0***	***10***	***1***	***1***	***377***	***13.40***	***8.98***
Great Crested Flycatcher	NH, SH			1.3**	0.975 (0.024)	0.0	23	1	1	166	16.40	9.76
Eastern Kingbird	**SSD**	**44**		**-3.3*** **	**1.004 (0.068)**	**7.0**	**5**	**0**	**0**	**22**	**2.65**	**0.71**
Loggerhead Shrike	**SSD**		**NY, NJ, DE, MD, VA**			**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
White-eyed Vireo	***SSD, SH***			***-2.2**** **	***0.985 (0.027)***	***2.5***	***17***	***10***	***4***	***543***	***48.10***	***24.77***
Yellow-throated Vireo	**NH, SH**	**44**		**-1.7**	**0.974 (0.057)**	**6.0**	**4**	**0**	**0**	**43**	**2.59**	**1.79**
Blue-headed Vireo	NH		CT	-1.9		2.0	0	0	0	0	0.00	0.00

Table 5 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Warbling Vireo †	NH, SH			1.9		0.0	2	0	0	8	0.90	0.70
Red-eyed Vireo	***NH, SH***			***-2.2****	***0.979 (0.008)***	***2.5***	***33***	***15***	***6***	***2705***	***185.13***	***104.98***
Blue Jay	NH, SH			-2.2***	1.008 (0.020)	1.0	41	4	1	482	44.68	17.11
Purple Martin	SSD, NH, SH		NH			2.0	0	0	0	0	0.00	0.00
Tree Swallow †	SSD			2.4**		0.0	3	1	0	100	6.67	1.75
N. Rough-winged Swallow	SSD			3.8		0.0	0	0	0	0	0.00	0.00
Barn Swallow	SSD			-0.6		0.0	3	0	0	7	0.57	0.17
Bank Swallow	SSD			-8.7***		2.0	0	0	0	0	0.00	0.00
Carolina Chickadee	***SH***	***44***		***-1.9****	***0.991 (0.018)***	***6.5***	***15***	***3***	***1***	***446***	***23.85***	***9.13***
Black-capped Chickadee	***NH***			***-1.3****	***0.990 (0.016)***	***2.5***	***33***	***23***	***10***	***1728***	***159.28***	***73.05***
Tufted Titmouse	*NH, SH*			*0.7**	*0.986 (0.013)*	*0.0*	*47*	*24*	*9*	*2645*	*118.62*	*48.06*
Red-breasted Nuthatch				-1.9		0.0	3	0	0	11	1.20	0.00
White-breasted Nuthatch	NH, SH			2.7***	1.015 (0.034)	0.0	27	0	0	201	18.07	7.11
Brown-headed Nuthatch	**SC, SC**	**44**		**-0.6**		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Brown Creeper	**NH**		**DE**	**-10.0*** **		**4.0**	**1**	**0**	**0**	**5**	**0.50**	**0.50**
Carolina Wren	*SH, SC*			*2.0***	*1.022 (0.014)*	*0.0*	*34*	*9*	*7*	*1654*	*67.09*	*39.14*
House Wren	***SSD***			***-1.0****	***0.934 (0.093)****	***3.0***	***15***	***2***	***1***	***176***	***15.28***	***9.73***
Winter Wren				-1.9		2.0	1	0	0	2	0.20	0.20
Sedge Wren	**SSD**	**9, 44**	**ME, NH, MA, CT, NY, NJ, DE, MD, VA**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Marsh Wren	**SSD**	**44**	**RI, CT**	**-4.6****		**10.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Blue-gray Gnatcatcher	SSD, SH			1.1		0.0	8	0	0	37	2.61	1.36
Eastern Bluebird	SSD, SC			2.9***	0.992 (0.040)	0.0	9	0	0	181	7.18	4.33
Veery	*NH, SH*			*-1.1*	*0.955 (0.010)*	*2.0*	*14*	*9*	*6*	*1045*	*68.63*	*39.73*
Hermit Thrush	***NH***		***CT***	***-0.7***	***0.941 (0.046)****	***4.5***	***9***	***4***	***1***	***192***	***20.13***	***4.50***
Wood Thrush	***NH, SH***	***9, 44***	***MA, CT, NY, DE***	***-2.3****	***0.950 (0.008)***	***10.5***	***36***	***28***	***14***	***4927***	***271.54***	***122.59***
American Robin	*SSD, SH, SC*			*0.7**	*0.965 (0.016)*	*0.0*	*37*	*20*	*9*	*1900*	*159.50*	*69.69*
Gray Catbird	***SSD, SH***	***44***		***0.1***	***0.975 (0.007)***	***6.0***	***37***	***33***	***16***	***8928***	***820.23***	***421.00***
Northern Mockingbird	SSD			-1.2***		2.0	5	0	0	32	2.12	2.12

Table 5 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Brown Thrasher	***SSD***	***44***	***MA, CT***	***-1.4****	***1.018 (0.051)***	***9.0***	***9***	***1***	***1***	***157***	***9.77***	***8.33***
European Starling	SSD, NH, SH			-2.1***		2.0	7	0	0	95	2.64	2.06
Cedar Waxwing	SSD, SH			2.0*	1.006 (0.019)	0.0	13	2	2	372	28.13	22.87
Blue-winged Warbler	***SSD, SH***	***9, 44***	***ME, MA, CT, NY, DE***	***-3.6*****	***0.785 (0.032)****	***11.0***	***11***	***5***	***2***	***169***	***26.19***	***13.59***
Golden-winged Warbler	**SSD**	**9**	**NH, MA, RI, CT**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Nashville Warbler	NH			-4.7		0.0	0	0	0	0	0.00	0.00
Northern Parula	***SH***		***MA, RI, NJ, DE***	***1.8***	***0.995 (0.036)***	***4.0***	***7***	***0***	***0***	***88***	***5.86***	***3.64***
Yellow Warbler	***SSD***			***-1.0****	***0.972 (0.028)***	***4.5***	***17***	***9***	***3***	***550***	***70.27***	***35.56***
Chestnut-sided Warbler	***SSD***		***CT***	***-3.3****	***1.014 (0.046)***	***5.0***	***3***	***1***	***1***	***113***	***5.35***	***5.18***
Magnolia Warbler				-6.0**		2.0	0	0	0	0	0.00	0.00
Black-throated Blue Warbler	***NH***	***9***	***RI, CT, NY***	***6.0***		***8.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Yellow-rumped Warbler				-4.2		0.0	0	0	0	0	0.00	0.00
Black-throated Green Warbler	NH, SC			0.5		0.0	3	0	0	34	2.35	2.35
Blackburnian Warbler	**NH**	**9**	**RI**	**-3.8**		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Yellow-throated Warbler	SH, SC			0.1		0.0	2	0	0	9	0.44	0.44
Pine Warbler	**SC, SC**	**44**		**-1.0**	**0.922 (0.000)**	**4.0**	**14**	**4**	**0**	**165**	**24.77**	**2.80**
Prairie Warbler †	***SSD***	***9, 44***	***ME, MA, CT, DE***	***-3.4*****		***11.0***	***4***	***1***	***0***	***64***	***7.43***	***0.50***
Cerulean Warbler	**SH**	**9, 44**	**RI, CT, NY**	**1.7**		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Black-and-white Warbler	***NH, SH***	***9***	***CT***	***-4.0*****	***0.911 (0.024)****	***11.0***	***15***	***6***	***3***	***454***	***41.41***	***15.87***
American Redstart	***NH, SH***		***DE***	***0.7***	***0.944 (0.023)****	***5.0***	***9***	***5***	***3***	***550***	***44.67***	***21.84***
Prothonotary Warbler	***SH***	***44***	***RI, NY***		***1.055 (0.034)***	***8.0***	***3***	***1***	***1***	***136***	***7.09***	***7.09***
Worm-eating Warbler	***SH***	***9, 44***	***RI, CT, NY***	***3.0***	***1.023 (0.022)***	***8.0***	***12***	***7***	***4***	***749***	***43.77***	***23.17***
Swainson's Warbler	**SH**	**44**	**DE, MD, VA**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**

Table 5 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Ovenbird	***NH, SH***			***-0.9****	***0.992 (0.011)***	***4.5***	***33***	***22***	***12***	***2431***	***140.48***	***73.83***
Northern Waterthrush	NH			2.1	1.121 (0.122)	0.0	3	1	0	40	6.16	0.00
Louisiana Waterthrush	***SH***	***9***	***MA, NY***	***0.3***	***0.997 (0.024)***	***8.0***	***7***	***2***	***1***	***913***	***22.83***	***13.69***
Kentucky Warbler	***SH***	***9, 44***	***NY, NJ***	***-3.9******	***0.932 (0.024)****	***11.0***	***6***	***3***	***3***	***383***	***16.56***	***14.13***
Common Yellowthroat	***SSD***			***-1.9******	***0.985 (0.011)***	***4.5***	***38***	***24***	***12***	***3039***	***258.51***	***148.68***
Hooded Warbler	***SH***	***44***	***DE***	***-0.5***	***0.920 (0.024)****	***10.5***	***8***	***4***	***3***	***596***	***24.64***	***17.19***
Canada Warbler	***NH***	***9***	***ME, NH, MA, CT***	***-13.0******		***10.0***	***2***	***0***	***0***	***15***	***2.00***	***0.00***
Yellow-breasted Chat †	***SSD, SH***		***CT, NY, NJ***	***-2.0****		***6.5***	***4***	***2***	***1***	***111***	***28.71***	***24.67***
Summer Tanager	SH, SC			1.8*		0.0	5	0	0	75	4.20	4.11
Scarlet Tanager	**NH, SH**	**9, 44**		**-1.7*****	**0.956 (0.019)**	**8.5**	**25**	**1**	**1**	**348**	**26.22**	**14.92**
Eastern Towhee	***SSD, SC***	***9, 44***	***NH, MA, CT***	***-1.3****	***0.971 (0.033)***	***10.5***	***32***	***5***	***2***	***463***	***45.43***	***16.67***
Chipping Sparrow	SSD, SH, SC			1.2**	1.029 (0.031)	2.0	11	3	1	379	31.81	10.61
Field Sparrow	***SSD***	***44***	***MA, CT***	***-2.8******	***0.789 (0.050)****	***11.0***	***7***	***1***	***0***	***116***	***19.52***	***5.33***
Vesper Sparrow	**SSD**		**ME, NH, MA, CT, NY, NJ**	**2.7**		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Savannah Sparrow	**SSD**		**CT, NJ**	**-0.2**		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Grasshopper Sparrow	**SSD**	**44**	**ME, NH, MA, RI, CT, NY**	**-1.6**		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Henslow's Sparrow	**SSD**	**9, 44**	**MA, NY, NJ, DE, MD, VA**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Nelson's Sharp-tailed Spar.	**SSD**		**ME**			**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Saltmarsh Sharp-tailed Sp.	**SSD**	**9, 44**	**ME, NH, MA, CT, NY, VA**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Seaside Sparrow	**SSD**	**9, 44**	**NH, MA, RI, CT, NY, DE**	**-1.7**		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Song Sparrow	***SSD***			***-1.3****	***0.960 (0.014)***	***4.5***	***14***	***8***	***4***	***786***	***59.25***	***35.10***
Swamp Sparrow	***SSD***		***DE, MD***	***-3.1****	***0.898 (0.083)****	***7.0***	***1***	***1***	***0***	***42***	***4.17***	***0.00***

Table 5 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
White-throated Sparrow	***SSD***		***MA, RI***	***-10.0******		***6.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Dark-eyed Junco	SSD			-20.0		0.0	0	0	0	0	0.00	0.00
Northern Cardinal	*SSD, SH, SC*			*1.2***	*1.003 (0.009)*	*0.0*	*48*	*26*	*14*	*2060*	*161.48*	*86.88*
Rose-breasted Grosbeak	***NH, SH***	***9***		***-6.4******	***0.933 (0.034)****	***9.0***	***4***	***0***	***0***	***43***	***4.71***	***2.71***
Blue Grosbeak	SSD			-0.3		0.0	1	0	0	8	2.00	0.00
Indigo Bunting	***SSD***		***CT***	***-0.4***	***0.901 (0.015)****	***6.5***	***13***	***2***	***1***	***168***	***22.05***	***15.73***
Dickcissel	**SSD**		**NJ**	**-2.3**		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Bobolink	**SSD**		**ME, CT, NJ**	**-2.1**		**4.0**	**1**	**0**	**0**	**13**	**0.59**	**0.59**
Red-winged Blackbird	SSD			0.6	0.957 (0.033)	2.0	14	6	2	296	40.51	19.41
Eastern Meadowlark	**SSD**		**ME, NH, MA, CT, NY, NJ**	**-3.3****		**6.0**	**1**	**0**	**0**	**1**	**0.06**	**0.06**
Common Grackle	**SSD, SH, SC**			**-1.7****	**0.969 (0.020)**	**4.5**	**22**	**8**	**5**	**643**	**52.01**	**25.40**
Brown-headed Cowbird	***SSD, SH***			***-0.8****	***0.965 (0.036)***	***4.5***	***29***	***0***	***0***	***166***	***13.68***	***7.99***
Orchard Oriole	SSD, NH, SH, SH		ME	1.2**		2.0	0	0	0	0	0.00	0.00
Baltimore Oriole	***NH, SH***	***9***		***-3.6*****	***0.778 (0.042)****	***9.0***	***13***	***1***	***1***	***136***	***8.89***	***7.59***
Purple Finch	**NH**	**9**	**NH**	**-9.0****		**10.0**	**1**	**0**	**0**	**50**	**1.76**	**1.76**
House Finch	SSD			1.7**		0.0	4	0	0	173	4.27	4.02
Pine Siskin	NH			-19.0		0.0	0	0	0	0	0.00	0.00
American Goldfinch	*SSD*			*5.0****	*0.979 (0.018)*	*0.0*	*28*	*11*	*8*	*837*	*105.12*	*79.07*
Evening Grosbeak	NH			22.4***		0.0	0	0	0	0	0.00	0.00
House Sparrow	SSD			-2.5***	1.199 (0.000)	1.0	11	1	0	60	6.57	1.67

Table 5 continued.

[1] The list includes species captured at ≥ 1 Northeast MAPS station operated in BCR 30 during 1989-2006 (data from 179 of 183 stations operated during this time period) and species listed as focal species in ≥ 1 National Partners in Flight (PIF) Physiographic Area Plan or State Wildlife Action Plan for BCR 30. We excluded waterbirds, raptors, upland gamebirds, hummingbirds, nocturnal species, species that do not breed in the region, and individuals not identified to species (except for Willow and Alder flycatchers). For Willow and Alder flycatchers, we indicate PIF Area and State listings and BBS trends, but for MAPS analyses, we grouped these species under the name "Traill's Flycatcher" because most individuals of these two species cannot be reliably identified to species in the hand. ‡ = Estimates of survival probability ($\hat{\phi}$) and population growth rate ($\hat{\lambda}$) should be viewed with caution because they are based on fewer than five between-year recaptures, or the survival estimate is very imprecise (SE($\hat{\phi}$)>0.200 or CV($\hat{\phi}$)>50.0%). † = Species met minimum requirements for inclusion in survival/lambda analysis, but estimates for survival or recapture probability (or both) were either 1.0 or 0.0 at the Northeast regional (USFWS Region 5) scale, so that no survival or recapture probabilities are available at the BCR scale

[2] Habitat designations: SSD - Scrub/Successional/Disturbed; NC - Northern Coniferous Forest; NH - Northern Hardwood Forest; SH - Southern Hardwood Forest; SC - Southern Coniferous Forest. See Methods for detail. When no habitat is listed, the species occurs in habitats not considered a priority habitat.

[3] National Partners in Flight (PIF) Physiographic Area Plans in which the species was listed as a Tier 1 or 2 Priority species. See Methods for detail.

[4] State Wildlife Action Conservation Plans in which the species was listed as priority or focal species, usually defined as an Endangered Species, Threatened Species, or Species of Special Concern. See Methods for detail about listing of priority species within BCRs, and see Appendix 2 for a list of PIF Plans.

[5] Population trends for 1980-2006 according to Breeding Bird Survey (BBS) data. *** $P < 0.01$; ** $0.01 < P < 0.05$; * $0.05 < P < 0.10$.

[6] Time-constant (1992-2003) model-averaged estimates of lambda for the BCR (λ = population size at time t+1 divided by population size at time t, or N(t+1)/N(t)). Values < 1.0 indicate declining trends and values > 1.0 indicate increasing trends. Lambda calculations only include data from stations at which the species was a usual breeder. See Methods for detail. ** = significant trend at $P < 0.05$.

[7] Priority Score is based on PIF and state plan listings BBS and MAPS trends. Priority Scores ranged from 0 (not listed and no significant trend) to 11 (listed in both PIF and state plans and showing significant negative BBS and MAPS trends).

[8] Number of stations at which the species was captured and was a usual breeder (see Methods for detail).

[9] Number of stations for which the number of adults captured per year was ≥ 2.5 and the species was a usual breeder (see Methods for detail).

[10] Number of stations believed to have operated in 2007 at which the species was a usual breeder and at which the mean numbers of adults captured of the species was ≥ 2.5 per year.

[11] Number of captures of the species during 1989-2006 at all stations pooled at which the species was a usual breeder.

[12] Mean number of adults per year during 1989-2006 pooled from all stations at which the species was a usual breeder.

[13] Mean number of adults per year during 1989-2006 pooled from stations believed to have operated in 2007 at which the species was a usual breeder.

Table 6. Landbird species (see Appendix 2 for scientific names) considered for our analysis in **Bird Conservation Region 29, Piedmont**. Priority species (priority score ≥ 2.5) for BCR 29 are presented in **bold** type and monitorable species (see Methods) in *italic* type. For each species, we summarize, for BCR 29, PIF and state plan listings, priority scores,1980-2006 Breeding Bird Survey (BBS) trends and 1992-2003 MAPS data, and monitoring priority scores.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5[9]	No. active sta. ≥ 2.5[10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Mourning Dove	SSD			-0.8**		2.0	3	0	0	7	0.12	0.12
Yellow-billed Cuckoo	**SSD, NH, SH**			**-1.6***		**4.0**	**6**	**0**	**0**	**8**	**1.27**	**1.07**
Black-billed Cuckoo	SSD, NH, SH			-1.8		2.0	1	0	0	1	0.06	0.06
Chimney Swift	**SSD**	**10**		**-2.2*****		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Belted Kingfisher	SSD, NH, SH			-1.1		0.0	1	0	0	57	2.22	0.00
Red-headed Woodpecker	**SSD, SH**	**10, 17**	**MD**	**4.2****		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Red-bellied Woodpecker	SH			1.4***	0.982 (0.032)	0.0	10	0	0	50	4.36	2.03
Downy Woodpecker	SSD, NH, SH			0.1	0.979 (0.021)	0.0	14	0	0	332	10.50	5.15
Hairy Woodpecker	NH, SH			-3.1**	1.011 (0.030)	1.0	9	0	0	65	4.12	2.80
Northern Flicker	**SSD, NH, SH**			**-3.6*****	**0.983 (0.038)**	**2.5**	**6**	**0**	**0**	**52**	**3.16**	**2.16**
Pileated Woodpecker	NH, SH			1.5		0.0	3	0	0	5	0.47	0.47
Eastern Wood-Pewee	***NH, SH***	***17***		***-2.3*****	***0.948 (0.047)****	***9.0***	***9***	***0***	***0***	***75***	***7.47***	***4.69***
Acadian Flycatcher	***SH***	***10***		***1.2***	***1.048 (0.053)***	***6.0***	***10***	***8***	***4***	***296***	***33.44***	***18.87***
Traill's Flycatcher	***SSD, NH***			***1.8****		***6.0***	***2***	***0***	***0***	***16***	***0.67***	***0.53***
Willow Flycatcher	***SSD***	***10, 17***		***1.8****		***6.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Least Flycatcher	SSD, NH			18.7		2.0	0	0	0	0	0.00	0.00
Eastern Phoebe	SSD, NH, SH			2.0***	0.844 (0.083)**	2.0	5	0	0	76	2.51	0.97
Great Crested Flycatcher	NH, SH			1.9**		0.0	2	0	0	4	0.14	0.00
Eastern Kingbird	**SSD**			**-1.6****		**4.0**	**2**	**0**	**0**	**3**	**0.62**	**0.33**
Loggerhead Shrike	**SSD**	**10**	**NJ, MD, VA**	**-9.5****		**10.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
White-eyed Vireo	SSD, SH			1.2	0.921 (0.048)**	1.0	9	5	3	397	29.58	16.23
Yellow-throated Vireo	NH, SH			3.4*		2.0	3	0	0	6	0.57	0.25
Blue-headed Vireo	NH			12.2***		0.0	0	0	0	0	0.00	0.00
Warbling Vireo †	NH, SH			0.6		0.0	0	0	0	0	0.00	0.00

Table 6 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Red-eyed Vireo	*NH, SH*			*1.3****	*0.978 (0.024)*	*0.0*	*13*	*9*	*5*	*484*	*60.06*	*34.16*
Blue Jay	NH, SH			-0.9	1.008 (0.032)	0.0	9	2	2	136	11.60	10.19
Purple Martin	SSD, NH, SH			0.4		0.0	0	0	0	0	0.00	0.00
Tree Swallow †	SSD, NH			13.4***		0.0	0	0	0	0	0.00	0.00
N. Rough-winged Swallow	SSD			0.2		0.0	0	0	0	0	0.00	0.00
Barn Swallow	SSD			-1.5**		2.0	0	0	0	0	0.00	0.00
Bank Swallow	SSD		PA	-9.8		2.0	0	0	0	0	0.00	0.00
Cliff Swallow	SSD		NJ	0.6		2.0	0	0	0	0	0.00	0.00
Carolina Chickadee	***SH***			***-0.8****	***0.989 (0.020)***	***2.5***	***12***	***0***	***0***	***225***	***13.69***	***9.25***
Black-capped Chickadee	NH			-3.8		0.0	2	0	0	74	2.32	0.53
Tufted Titmouse	*NH, SH*			*2.3****	*0.978 (0.029)*	*0.0*	*13*	*1*	*0*	*424*	*19.42*	*10.96*
White-breasted Nuthatch	NH, SH			6.0***		0.0	7	0	0	26	2.12	1.40
Brown-headed Nuthatch		**10**		**3.2****		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Carolina Wren	*SH*			*1.4****	*1.021 (0.020)*	*0.0*	*12*	*7*	*6*	*663*	*32.24*	*25.22*
House Wren	SSD			0.2	0.995 (0.036)	0.0	4	1	1	208	7.11	5.82
Sedge Wren	**SSD**	**10, 17**	**NJ, PA**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Marsh Wren	**SSD**		**PA**			**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Blue-gray Gnatcatcher	SSD, SH			2.2***		0.0	9	0	0	47	5.13	3.02
Eastern Bluebird	SSD			1.7***	0.979 (0.038)	0.0	4	1	0	151	4.25	0.29
Veery	*NH, SH*			*-0.5*	*0.957 (0.009)*	*2.0*	*4*	*4*	*2*	*988*	*47.06*	*20.42*
Wood Thrush	***NH, SH***	***10, 17***	***PA***	***-1.2*****	***0.970 (0.012)***	***10.5***	***14***	***13***	***9***	***1833***	***121.47***	***88.25***
American Robin	***SSD, NH, SH***			***-0.5****	***0.992 (0.014)***	***2.5***	***8***	***6***	***4***	***807***	***49.18***	***24.26***
Gray Catbird	*SSD, NH, SH*			*2.1****	*1.003 (0.008)*	*2.0*	*11*	*8*	*5*	*4217*	*248.46*	*130.81*
Northern Mockingbird	SSD			0.2		0.0	4	0	0	15	1.52	1.23
Brown Thrasher	***SSD***	***17***		***0.8***	***0.972 (0.097)***	***6.0***	***7***	***1***	***1***	***50***	***7.17***	***5.56***
European Starling	SSD, NH, SH			-1.5***		2.0	1	0	0	3	0.00	0.00
Cedar Waxwing	SSD, NH, SH			5.1***		0.0	1	0	0	5	0.29	0.29
Blue-winged Warbler	***SSD, SH***	***10, 17***	***PA***	***-3.2***	***0.815 (0.024)****	***10.5***	***2***	***1***	***1***	***327***	***12.61***	***12.47***
Northern Parula	SH			2.6		2.0	4	0	0	12	1.89	0.89
Yellow Warbler	***SSD***			***-0.3***	***0.850 (0.051)****	***4.5***	***3***	***0***	***0***	***69***	***3.54***	***1.00***
Chestnut-sided Warbler	SSD, NH			1.0		2.0	0	0	0	0	0.00	0.00

Table 6 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Black-throated Green Warb.	NH			-7.8		0.0	0	0	0	0	0.00	0.00
Yellow-throated Warbler	SH			2.0		0.0	0	0	0	0	0.00	0.00
Pine Warbler				-0.6		0.0	3	0	0	15	1.51	1.31
Prairie Warbler †	***SSD***	***10, 17***		***-0.8***		***8.5***	***4***	***2***	***1***	***113***	***13.29***	***6.89***
Cerulean Warbler	**SH**	**10, 17**	**NJ, PA**	**5.3**		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Black-and-white Warbler	NH, SH			4.9**	1.017 (0.063)	2.0	6	1	1	95	5.46	4.17
American Redstart	NH, SH			3.3		2.0	2	0	0	39	1.00	1.00
Prothonotary Warbler	***SH***	***10***		***10.6***		***6.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Worm-eating Warbler	***SH***	***10, 17***		***3.6***		***6.0***	***3***	***0***	***0***	***32***	***2.04***	***2.04***
Swainson's Warbler	SH			3.4		2.0	0	0	0	0	0.00	0.00
Ovenbird	*NH, SH*			*2.2***	*0.989 (0.015)*	*2.0*	*10*	*9*	*6*	*1139*	*56.28*	*45.60*
Louisiana Waterthrush	***SH***	***10, 17***	***PA***	***2.3***	***1.135 (0.107)***	***8.0***	***9***	***2***	***1***	***130***	***10.52***	***6.56***
Kentucky Warbler	***SH***	***10, 17***	***NJ***	***2.5***		***8.0***	***1***	***0***	***0***	***8***	***0.78***	***0.00***
Common Yellowthroat	*SSD*			*0.7*	*0.970 (0.013)*	*2.0*	*10*	*8*	*4*	*1633*	*104.65*	*68.03*
Hooded Warbler	SH			2.4*	1.060 (0.066)	2.0	4	2	2	180	14.90	14.90
Canada Warbler	***NH***	***10, 17***				***6.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Yellow-breasted Chat †	SSD, SH					2.0	5	4	3	188	22.15	14.75
Summer Tanager	SH		PA	0.9		2.0	1	0	0	1	0.25	0.25
Scarlet Tanager	**NH, SH**	**10, 17**	**PA**	**0.4**	**0.948 (0.034)****	**9.0**	**12**	**0**	**0**	**105**	**8.61**	**5.86**
Eastern Towhee	***SSD***	***10, 17***		***0.8***	***0.930 (0.033)****	***7.0***	***10***	***1***	***1***	***267***	***15.41***	***12.02***
Chipping Sparrow	SSD, NH, SH			1.5***		2.0	4	0	0	27	1.99	0.71
Field Sparrow	***SSD***	***10, 17***		***-3.0*****	***0.801 (0.037)****	***9.0***	***4***	***3***	***3***	***144***	***14.47***	***14.47***
Vesper Sparrow	**SSD**			**-5.7****		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Savannah Sparrow	SSD			10.6***		2.0	0	0	0	0	0.00	0.00
Grasshopper Sparrow	**SSD**	**17**		**-2.9*****		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Henslow's Sparrow	**SSD**	**10, 17**	**PA, MD, VA**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Song Sparrow	SSD			-0.1	0.957 (0.019)	2.0	5	1	0	165	8.19	2.47
Swamp Sparrow	SSD, NH					2.0	1	0	0	30	1.71	0.00
Northern Cardinal	*SSD, NH, SH*			*1.1****	*1.003 (0.009)*	*0.0*	*13*	*11*	*7*	*1247*	*105.81*	*71.25*
Rose-breasted Grosbeak	***NH, SH***			***-8.5*****	***0.930 (0.023)****	***5.0***	***2***	***2***	***1***	***123***	***6.29***	***3.65***
Blue Grosbeak	SSD			-1.3*		2.0	0	0	0	0	0.00	0.00
Indigo Bunting	***SSD***			***-1.0*****	***0.902 (0.016)****	***5.0***	***9***	***5***	***3***	***386***	***53.48***	***29.72***
Dickcissel	**SSD**		**PA, NJ**	**3.1**		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**

Table 6 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Bobolink	SSD			-1.9		2.0	0	0	0	0	0.00	0.00
Red-winged Blackbird	***SSD***			***-2.4******		***4.0***	***1***	***0***	***0***	***36***	***2.36***	***0.00***
Eastern Meadowlark	**SSD**		**NJ**	**-3.8*****		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Common Grackle	**SSD, NH, SH**			**-3.4*****	**0.928 (0.043)****	**5.0**	**4**	**0**	**0**	**65**	**4.16**	**1.41**
Brown-headed Cowbird	SSD, NH, SH			-0.3	0.991 (0.058)	2.0	7	0	0	65	4.85	3.92
Orchard Oriole	SSD, NH, SH			1.6*	1.237 (0.525)	0.0	3	1	1	32	5.86	4.86
Baltimore Oriole	***NH, SH***	***17***		***-1.4***		***6.0***	***3***	***0***	***0***	***27***	***1.32***	***1.18***
House Finch	SSD			4.7***		0.0	3	1	0	39	3.18	0.18
American Goldfinch	*SSD*			*2.7***	*0.978 (0.028)*	*0.0*	*9*	*5*	*4*	*253*	*38.36*	*23.59*
House Sparrow	SSD			-5.2***		2.0	1	0	0	13	1.71	1.71

[1] The list includes species captured at ≥ 1 Northeast MAPS station in BCR 29 operated during 1989-2006 (data from 179 of 183 stations operated during this time period) and species listed as focal species in ≥ 1 National Partners in Flight (PIF) Physiographic Area Plan or State Wildlife Action Plan for BCR 29. We excluded waterbirds, raptors, upland gamebirds, hummingbirds, nocturnal species, species that do not breed in the region, and individuals not identified to species (except for Willow and Alder flycatchers). For Willow and Alder flycatchers, we indicate PIF Area and State listings and BBS trends, but for MAPS analyses, we grouped these species under the name "Traill's Flycatcher" because most individuals of these two species cannot be reliably identified to species in the hand. ‡ = Estimates of survival probability ($\hat{\phi}$) and population growth rate ($\hat{\lambda}$) should be viewed with caution because they are based on fewer than five between-year recaptures, or the survival estimate is very imprecise (SE($\hat{\phi}$)>0.200 or CV($\hat{\phi}$)>50.0%). † = Species met minimum requirements for inclusion in survival/lambda analysis, but estimates for survival or recapture probability (or both) were either 1.0 or 0.0 at the Northeast regional (USFWS Region 5) scale, so that no survival or recapture probabilities are available at the BCR scale

[2] Habitat designations: SSD - Scrub/Successional/Disturbed; NC - Northern Coniferous Forest; NH - Northern Hardwood Forest; SH - Southern Hardwood Forest; SC - Southern Coniferous Forest. See Methods for detail. When no habitat is listed, the species occurs in habitats not considered a priority habitat.

[3] National Partners in Flight (PIF) Physiographic Area Plans in which the species was listed as a Tier 1 or 2 Priority species. See Methods for detail.

[4] State Wildlife Action Conservation Plans in which the species was listed as priority or focal species, usually defined as an Endangered Species, Threatened Species, or Species of Special Concern. See Methods for detail about listing of priority species within BCRs, and see Appendix 2 for a list of PIF Plans.

[5] Population trends for 1980-2006 according to Breeding Bird Survey (BBS) data. *** $P < 0.01$; ** $0.01 < P < 0.05$; * $0.05 < P < 0.10$.

[6] Time-constant (1992-2003) model-averaged estimates of lambda for the BCR (λ = population size at time t+1 divided by population size at time t, or N(t+1)/N(t)). Values < 1.0 indicate declining trends and values > 1.0 indicate increasing trends. Lambda calculations only include data from stations at which the species was a usual breeder. See Methods for detail. ** = significant trend at $P < 0.05$.

[7] Priority Score is based on PIF and state plan listings BBS and MAPS trends. Priority Scores ranged from 0 (not listed and no significant trend) to 11 (listed in both PIF and state plans and showing significant negative BBS and MAPS trends).

Table 6 continued.

[8] Number of stations at which the species was captured and was a usual breeder (see Methods for detail).
[9] Number of stations for which the number of adults captured per year was ≥ 2.5 and the species was a usual breeder (see Methods for detail).
[10] Number of stations believed to have operated in 2007 at which the species was a usual breeder and at which the mean numbers of adults captured of the species was ≥ 2.5 per year.
[11] Number of captures of the species during 1989-2006 at all stations pooled at which the species was a usual breeder.
[12] Mean number of adults per year during 1989-2006 pooled from all stations at which the species was a usual breeder.
[13] Mean number of adults per year during 1989-2006 pooled from stations believed to have operated in 2007 at which the species was a usual breeder.

Table 7. Landbird species (see Appendix 2 for scientific names) considered for our analysis in **Bird Conservation Region 27, Southeastern Coastal Plain**. Priority species (priority score ≥ 2.5) for BCR 27 are presented in **bold** type and monitorable species (see Methods) in *italic* type. For each species, we summarize, for BCR 27, PIF and state plan listings, priority scores,1980-2006 Breeding Bird Survey (BBS) trends and 1992-2003 MAPS data, and monitoring priority scores.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Mourning Dove	SSD,SC			-1.6***		2.0	1	0	0	1	0.13	0.00
Yellow-billed Cuckoo	**SSD,SH**	**44**		**-2.4*** **		**8.0**	**5**	**0**	**0**	**8**	**0.67**	**0.31**
Black-billed Cuckoo	SSD,SH			-24.0		2.0	0	0	0	0	0.00	0.00
Chimney Swift	**SSD**	**44**		**-2.4*** **		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Belted Kingfisher	SSD,SH			-2.1**		2.0	0	0	0	0	0.00	0.00
Red-headed Woodpecker	SSD,SH			-0.2		2.0	1	0	0	7	0.78	0.00
Red-bellied Woodpecker	SH,SC			0.1	0.987 (0.035)	0.0	8	0	0	30	2.57	0.21
Downy Woodpecker	***SSD,SH***			***-1.5****	***0.979 (0.027)***	***2.5***	***8***	***0***	***0***	***94***	***4.41***	***1.25***
Hairy Woodpecker	SH,SC			-1.1		0.0	5	0	0	24	0.85	0.50
Red-cockaded Woodpeck.	**SC,SC**	**44**	**VA**	**-2.6**		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Northern Flicker	SSD,SH,SC			-3.9***		2.0	3	0	0	12	1.10	0.00
Pileated Woodpecker	SH			-0.3		0.0	7	0	0	15	1.11	0.00
Eastern Wood-Pewee	***SH***	***44***		***-1.9**** **	***0.991 (0.072)***	***8.5***	***5***	***0***	***0***	***32***	***2.71***	***0.80***
Acadian Flycatcher	***SH***	***44***		***-0.2***	***0.994 (0.021)***	***6.0***	***5***	***4***	***1***	***397***	***30.82***	***6.33***
Eastern Phoebe	SSD,SH			5.2***		2.0	0	0	0	0	0.00	0.00
Great Crested Flycatcher	SH			1.3***	0.977 (0.029)	0.0	7	0	0	46	3.94	1.08
Eastern Kingbird	**SSD**	**44**		**-0.8***		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Loggerhead Shrike	**SSD**		**VA**	**-3.6*** **		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
White-eyed Vireo	***SSD,SH***			***-0.4***	***0.941 (0.058)****	***2.5***	***2***	***0***	***0***	***63***	***2.88***	***1.88***
Yellow-throated Vireo	**SH**	**44**		**0.6**		**6.0**	**1**	**0**	**0**	**1**	**0.13**	**0.00**
Blue-headed Vireo				4.7		0.0	0	0	0	0	0.00	0.00
Warbling Vireo †	SH			23.7*		0.0	0	0	0	0	0.00	0.00
Red-eyed Vireo	*SH*			*0.1*	*0.909 (0.022)***	*1.0*	*8*	*3*	*1*	*337*	*28.93*	*8.42*
Blue Jay	SH			-1.4***	1.001 (0.035)	1.0	7	1	0	103	9.98	0.50
Purple Martin	SSD,SH			0.1		0.0	0	0	0	0	0.00	0.00
Tree Swallow †	SSD			-0.8		0.0	0	0	0	0	0.00	0.00
N. Rough-winged Swallow	SSD			-1.9		0.0	0	0	0	0	0.00	0.00
Barn Swallow	SSD			0.5		0.0	0	0	0	0	0.00	0.00
Cliff Swallow	SSD			25.0***		0.0	0	0	0	0	0.00	0.00
Carolina Chickadee	***SH***	***44***		***-2.1**** **	***0.988 (0.023)***	***6.5***	***9***	***0***	***0***	***157***	***6.76***	***1.31***
Tufted Titmouse	*SH*			*0.3*	*0.985 (0.031)*	*0.0*	*9*	*1*	*0*	*368*	*16.70*	*2.64*

Table 7 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
White-breasted Nuthatch	SH			-1.3		0.0	3	0	0	4	0.21	0.08
Brown-headed Nuthatch	**SC**	**44**		**-0.7**		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Carolina Wren	*SH,SC*			*0.6***	*1.027 (0.020)*	*0.0*	*9*	*6*	*1*	*899*	*34.82*	*7.89*
House Wren	SSD			-1.5		0.0	0	0	0	0	0.00	0.00
Sedge Wren	**SSD**	**44**	**VA**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Marsh Wren	**SSD**	**44**		**-26.0***		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Blue-gray Gnatcatcher	SSD,SH			-0.4		0.0	2	0	0	6	0.30	0.08
Eastern Bluebird	SSD,SC			2.3***		0.0	0	0	0	0	0.00	0.00
Wood Thrush	***SH***	***44***		***-1.7*****	***1.077 (0.024)****	***6.0***	***7***	***6***	***1***	***654***	***47.67***	***2.67***
American Robin	*SSD,SH, SC*			*0.8*	*1.025 (0.036)*	*0.0*	*4*	*3*	*0*	*427*	*22.51*	*0.00*
Gray Catbird	***SSD,SH***	***44***		***-1.1***	***1.388 (0.120)****	***6.0***	***3***	***0***	***0***	***67***	***2.75***	***1.50***
Northern Mockingbird	SSD			-0.2		0.0	0	0	0	0	0.00	0.00
Brown Thrasher	***SSD***	***44***		***0.1***	***0.989 (0.053)***	***6.0***	***1***	***1***	***0***	***43***	***4.38***	***0.00***
European Starling	SSD,SH			0.2		0.0	0	0	0	0	0.00	0.00
Cedar Waxwing	SSD,SH			10.9*		0.0	0	0	0	0	0.00	0.00
Blue-winged Warbler	SSD,SH			-12.0		2.0	0	0	0	0	0.00	0.00
Northern Parula	***SH***			***-1.6****	***1.009 (0.044)***	***3.0***	***3***	***1***	***1***	***44***	***3.61***	***2.83***
Yellow Warbler	***SSD***			***-4.0****		***4.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Black-throated Green Warbler	SC		VA			2.0	1	0	0	2	0.13	0.13
Yellow-throated Warbler	SH,SC			-0.7		0.0	0	0	0	0	0.00	0.00
Pine Warbler	**SC**	**44**		**0.5**		**4.0**	**4**	**0**	**0**	**7**	**0.59**	**0.00**
Prairie Warbler †	***SSD***	***44***		***-0.4***		***6.0***	***1***	***0***	***0***	***33***	***1.56***	***1.56***
Cerulean Warbler	SH			-3.1		2.0	0	0	0	0	0.00	0.00
Black-and-white Warbler	SH			-2.7	1.138 (0.064)**	2.0	3	1	0	92	5.50	0.81
American Redstart	SH			-0.2		2.0	0	0	0	0	0.00	0.00
Prothonotary Warbler	***SH***	***44***		***-1.7*****	***1.042 (0.023)***	***7.0***	***2***	***1***	***1***	***606***	***17.69***	***17.69***
Worm-eating Warbler	***SH***	***44***		***3.6***	***1.072 (0.056)***	***6.0***	***1***	***1***	***1***	***85***	***3.56***	***3.56***
Swainson's Warbler	**SH**	**44**	**VA**	**4.4**		**8.0**	**1**	**1**	**1**	**54**	**2.69**	**2.69**
Ovenbird	*SH*			*0.4*	*1.015 (0.020)*	*2.0*	*9*	*8*	*1*	*1323*	*73.30*	*8.52*
Louisiana Waterthrush	***SH***			***-0.2***	***0.945 (0.082)****	***4.5***	***3***	***0***	***0***	***45***	***2.61***	***0.06***
Kentucky Warbler	***SH***	***44***		***-2.0*****		***8.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Common Yellowthroat	***SSD***			***-1.0****	***0.947 (0.031)****	***5.0***	***4***	***1***	***1***	***412***	***10.30***	***6.50***
Hooded Warbler	***SH***	***44***		***-0.6***	***0.990 (0.029)***	***6.0***	***3***	***2***	***0***	***348***	***21.16***	***1.38***

Table 7 continued.

Species[1]	Habitat[2]	PIF Plans[3]	State Plans[4]	BBS trend 1980-2006[5]	$\hat{\lambda}$ 1992-2003[6]	Priority score[7]	No. sta.[8]	No. sta. ≥ 2.5 [9]	No. active sta. ≥ 2.5 [10]	No. caps.[11]	Adults/yr[12]	Adults/yr active sta.[13]
Yellow-breasted Chat	SSD,SH			0.9***		2.0	0	0	0	0	0.00	0.00
Summer Tanager	SH,SC			-0.7**		2.0	2	0	0	9	0.88	0.00
Scarlet Tanager	**SH**	**44**		**-0.1**		**6.0**	**3**	**0**	**0**	**23**	**1.73**	**0.17**
Eastern Towhee	***SSD,SC***	***44***		***-0.7******		***8.0***	***3***	***0***	***0***	***34***	***1.76***	***0.75***
Bachman's Sparrow	**SSD,SC**	**44**	**VA**	**-1.0**		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Chipping Sparrow	SSD,SH,SC			2.7***		2.0	0	0	0	0	0.00	0.00
Field Sparrow	***SSD***	***44***		***-1.4****		***8.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Grasshopper Sparrow	**SSD**	**44**		**-2.4**		**6.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Henslow's Sparrow	SSD			12.1		2.0	0	0	0	0	0.00	0.00
Saltmarsh Sharp-tailed Sp.	**SSD**	**44**	**VA**			**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Seaside Sparrow	**SSD**	**44**		**-1.1****		**8.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Song Sparrow	SSD			0.2		2.0	0	0	0	0	0.00	0.00
Northern Cardinal	*SSD,SH, SC*			*-0.1*	*1.004 (0.011)*	*0.0*	*9*	*6*	*1*	*503*	*31.04*	*9.44*
Blue Grosbeak	SSD			0.7**		0.0	0	0	0	0	0.00	0.00
Indigo Bunting	SSD			-0.4		2.0	3	0	0	10	1.05	0.00
Dickcissel	SSD			-0.1		2.0	0	0	0	0	0.00	0.00
Red-winged Blackbird	***SSD***			***-3.4*****		***4.0***	***0***	***0***	***0***	***0***	***0.00***	***0.00***
Eastern Meadowlark	**SSD**			**-4.8*****		**4.0**	**0**	**0**	**0**	**0**	**0.00**	**0.00**
Common Grackle	**SSD,SH,SC**			**-2.3*****	**0.867 (0.033)****	**5.0**	**5**	**4**	**1**	**292**	**22.15**	**3.27**
Brown-headed Cowbird	***SSD,SH***			***-1.7*****		***4.0***	***4***	***0***	***0***	***22***	***1.65***	***0.89***
Orchard Oriole	SSD,SH			0.0		0.0	0	0	0	0	0.00	0.00
Baltimore Oriole	SH			-0.2		2.0	0	0	0	0	0.00	0.00
House Finch	SSD			17.4***		0.0	0	0	0	0	0.00	0.00
American Goldfinch	SSD			1.6		0.0	2	0	0	4	0.36	0.25
House Sparrow	SSD			-5.9***		2.0	0	0	0	0	0.00	0.00

Table 7 continued.

[1] The list includes species captured at ≥ 1 Northeast MAPS station operated in BCR 27 during 1989-2006 (data from 179 of 183 stations operated during this time period) and species listed as focal species in ≥ 1 National Partners in Flight (PIF) Physiographic Area Plan or State Wildlife Action Plan for BCR 27. We excluded waterbirds, raptors, upland gamebirds, hummingbirds, nocturnal species, species that do not breed in the region, and individuals not identified to species (except for Willow and Alder flycatchers). For Willow and Alder flycatchers, we indicate PIF Area and State listings and BBS trends, but for MAPS analyses, we grouped these species under the name "Traill's Flycatcher" because most individuals of these two species cannot be reliably identified to species in the hand. ‡ = Estimates of survival probability ($\hat{\phi}$) and population growth rate ($\hat{\lambda}$) should be viewed with caution because they are based on fewer than five between-year recaptures, or the survival estimate is very imprecise (SE($\hat{\phi}$)>0.200 or CV($\hat{\phi}$)>50.0%). † = Species met minimum requirements for inclusion in survival/lambda analysis, but estimates for survival or recapture probability (or both) were either 1.0 or 0.0 at the Northeast regional (USFWS Region 5) scale, so that no survival or recapture probabilities are available at the BCR scale

[2] Habitat designations: SSD - Scrub/Successional/Disturbed; NC - Northern Coniferous Forest; NH - Northern Hardwood Forest; SH - Southern Hardwood Forest; SC - Southern Coniferous Forest. See Methods for detail. When no habitat is listed, the species occurs in habitats not considered a priority habitat.

[3] National Partners in Flight (PIF) Physiographic Area Plans in which the species was listed as a Tier 1 or 2 Priority species. See Methods for detail.

[4] State Wildlife Action Conservation Plans in which the species was listed as priority or focal species, usually defined as an Endangered Species, Threatened Species, or Species of Special Concern. See Methods for detail about listing of priority species within BCRs, and see Appendix 2 for a list of PIF Plans.

[5] Population trends for 1980-2006 according to Breeding Bird Survey (BBS) data. *** $P < 0.01$; ** $0.01 < P < 0.05$; * $0.05 < P < 0.10$.

[6] Time-constant (1992-2003) model-averaged estimates of lambda for the BCR (λ = population size at time t+1 divided by population size at time t, or N(t+1)/N(t)). Values < 1.0 indicate declining trends and values > 1.0 indicate increasing trends. Lambda calculations only include data from stations at which the species was a usual breeder. See Methods for detail. ** = significant trend at $P < 0.05$.

[7] Priority Score is based on PIF and state plan listings BBS and MAPS trends. Priority Scores ranged from 0 (not listed and no significant trend) to 11 (listed in both PIF and state plans and showing significant negative BBS and MAPS trends).

[8] Number of stations at which the species was captured and was a usual breeder (see Methods for detail).

[9] Number of stations for which the number of adults captured per year was ≥ 2.5 and the species was a usual breeder (see Methods for detail).

[10] Number of stations believed to have operated in 2007 at which the species was a usual breeder and at which the mean numbers of adults captured of the species was ≥ 2.5 per year.

[11] Number of captures of the species during 1989-2006 at all stations pooled at which the species was a usual breeder.

[12] Mean number of adults per year during 1989-2006 pooled from all stations at which the species was a usual breeder.

[13] Mean number of adults per year during 1989-2006 pooled from stations believed to have operated in 2007 at which the species was a usual breeder.

Table 8. Forty-eight MAPS priority-target (P) and control-target (C) species (see Appendix 2 for scientific names) for the Northeast (NE) region (46 regional targets plus two species only targeted at the BCR scale), and their BCR-specific target status (1-4).

	Target status [1]						
Species	NE Region	BCR 14	BCR 13	BCR 28	BCR 30	BCR 29	BCR 27
Eastern Wood-Pewee	P		P4	P3	P3	P3	P4
Acadian Flycatcher	P			P4	P1	P2	P3
Willow (Traill's) Flycatcher	P	P2	P2	P3			
Least Flycatcher	P	P3	P3				
Red-eyed Vireo	C	C2	C2	C1	P1	C1	C3
Carolina Chickadee					P3		P4
Black-capped Chickadee	C	C1	C1	C1	P1		
Tufted Titmouse	C			C2	C1	C3	C3
Carolina Wren	C			C2	C1	C1	C2
Veery	P	P1	C2	C1	C1	C3	
Bicknell's Thrush	P	P3		P4			
Hermit Thrush	C	C2		C3	P3		
Wood Thrush	P	P2	P2	P1	P1	P1	P2
American Robin	C	C2	C2	C1	C1	P2	C3
Gray Catbird	P	P3	C2	C1	P1	C1	P4
Brown Thrasher	P	P4		P4	P4	P3	P4
Blue-winged Warbler	P		P3	P3	P2	P3	
Yellow Warbler	P	P3	P2	P2	P2	P4	
Chestnut-sided Warbler	P	P3					
Magnolia Warbler	C	C1					
Black-throated Blue Warbler	P	P2	P4				
Black-throat. Green Warbler	C	C2					
Prairie Warbler	P				P4	P3	
Blackpoll Warbler		P2					
Black-and-white Warbler	P	P2		P2	P2		
American Redstart	P	P2	P2	C2	P2		
Prothonotary Warbler	P				P4		P3
Worm-eating Warbler	P			P1	P2	P4	P4
Ovenbird	P	P1	C3	C1	P1	C1	C2
Louisiana Waterthrush	P			P4	P3	P3	P4
Kentucky Warbler	P			P4	P4		
Mourning Warbler	P			P4			
Common Yellowthroat	P	P1	P2	P1	P1	C2	P3
Hooded Warbler	P			P2	P3		P3

Table 8 continued.

Species	Target status [1]						
	NE Region	BCR 14	BCR 13	BCR 28	BCR 30	BCR 29	BCR 27
Canada Warbler	P	P3		P4			
Yellow-breasted Chat	P				P3		
Eastern Towhee	P		P4	P2	P2	P3	
Chipping Sparrow	P	P4		P3			
Field Sparrow	P	P4	P3	P3	P4	P3	
Song Sparrow	P		P2	P1	P2		
White-throated Sparrow	P	P2		P3			
Northern Cardinal	C		C2	C1	C1	C1	C2
Rose-breasted Grosbeak	P	P3	P3	P3		P4	
Indigo Bunting	P	P3		P1	P3	P2	
Red-winged Blackbird	P	P3	P3				
Brown-headed Cowbird	P		P3	P4	P4		
Baltimore Oriole	P	P3	P3	P4	P4		
American Goldfinch	C	C3	C2	C1	C1	C2	
No. priority target species	36	23	16	25	28	14	11
No. control target species	10	7	8	12	6	9	6
No. target species	46	30	24	37	34	23	17
Station-years run	1122	150	78	282	418	108	86
Stations run	179	31	17	53	55	14	9
No. stations active in 2007	77	14	4	24	24	9	2

[1] At the BCR scale, control-target (C) and priority-target (P) species were assigned secondary (numeric) codes based on mean 1989-2006 capture rates as follows: 1 for species captured at adequate levels ($\geq$ 2.5 adults/yr) at $\geq$ 5 currently *active* (as of 2007) stations; 2 for species not of status 1 but captured at adequate levels at five or more *active and inactive* stations; 3 for species not of status 1 or 2 but with a cumulative (across stations) mean adult capture rate of at least 7.0 (BCRs 14, 13, 29, or 27) or 20.0 (BCRs 28 and 30); and 4 for species not of status 1-3 but with a cumulative adult capture rate $\geq$ 2.0 (BCRs 14, 13, 29, or 27) or $\geq$ 6.0 (BCRs 28 and 30).

Table 9. Target species by habitat in the region and in each BCR within the Northeast region.

Region		Scrub/Successional/ Disturbed	Northern Coniferous Forest	Northern Hardwood Forest	Southern Hardwood Forest	Southern Coniferous Forest
Northeast Region						
Regional, Total Target		23 (50%)	13 (28%)	22 (48%)	24 (52%)	6 (13%)
Bird Conservation Regions						
BCR14	Total Target	16 (53%)	13 (43%)	18 (60%)		
	Target, Status 3-4	11 (79%)	3 (21%)	7 (50%)		
BCR 13	Total Target	14 (58%)		15 (63%)	15 (63%)	
	Target, Status 3-4	6 (55%)		7 (64%)	6 (55%)	
BCR28	Total Target	18 (49%)	10 (27%)	18 (49%)	22 (59%)	
	Target, Status 3-4	9 (56%)	6 (38%)	7 (44%)	9 (56%)	
BCR 30	Total Target	15 (44%)		11 (32%)	23 (68%)	4 (12%)
	Target, Status 3-4	6 (43%)		3 (21%)	9 (64%)	0 (0%)
BCR 29	Total Target	12 (52%)		10 (43%)	15 (65%)	
	Target, Status 3-4	6 (55%)		4 (36%)	7 (64%)	
BCR 27	Total Target	5 (29%)			15 (88%)	3 (18%)
	Target, Status 3-4	4 (31%)			11 (85%)	1 (8%)
Total Species/BCR						
	Total Target	80 (48%)	23 (14%)	72 (44%)	88 (53%)	7 (4%)
	Target, Status 3-4	40 (51%)	9 (11%)	28 (35%)	42 (53%)	1 (1%)

[1] Values represent the number of target species found regularly within each habitat type in the Northeast Region and in each Bird Conservation Area (BCR). The percentage value indicates the proportion of the target species found in the region or in the BCR that are found in that habitat type.

Table 10. 183 MAPS Stations operated in the Northeast region between 1989 and 2006.

Loc.	Station	Name	State	Land-hold.[1]	History[2]	Num. years oper.[3]	Num. years data[3]	Elev.	Habitat	Num. species monit.[4]	Mean num. adults[5]	Priority species score[6]	Rec. for sta.[7]
Bird Conservation Region 14, Atlantic Northern Forest													
AROO	WOBO	Woodland Bog	ME	PRIV	94-98	5	5	183	Northern Hardwood Forest	15	102.80	60.0	R
UPEN	UETW	Upper Enchanted West	ME	PRIV	91	1	1	440	Northern Hardwood Forest	4	21.00	1.0	N
UPEN	UETE	Upper Enchanted East	ME	PRIV	90-94	5	5	430	Northern Hardwood Forest	3	30.60	17.5	N
BRUN	HGHL	Highland	ME	DoD	03-	4	4	724	Northern Coniferous Forest	8	53.75	14.5	C
BRUN	PONU	Potato Nubble	ME	DoD	03-	4	4	488	Northern Hardwood Forest	5	37.75	22.5	C
BRUN	BLUE	Blueline Trail	ME	DoD	03-	4	4	515	Northern Hardwood Forest	10	61.50	24.0	C
BRUN	REPO	Redington Pond	ME	DoD	03-	4	4	507	Northern Hardwood Forest	14	80.00	52.5	C
EMCI	SPNE	Sprague Neck	ME	FWS	96-03	8	8	15	Northern Hardwood Forest	6	45.13	11.0	N
EMCI	ROIS	Roque Island	ME	PRIV	96-03	8	8	15	Scrub/Succession/Disturbed	7	33.88	9.0	N
EMCI	ATRE	Apple Tree	ME	FWS	98-03	6	6	10	Northern Coniferous Forest	9	47.17	20.0	N
SIDN	SIDN	Sidney	ME	PRIV	93-96	4	4	91	Northern Hardwood Forest	3	21.00	21.5	N
EMCI	PEMA	Petit Manan Point	ME	FWS	97-03	7	7	10	Scrub/Succession/Disturbed	15	128.57	45.0	R
EMCI	SCPO	Schoodic Point	ME	NPS	96-03	8	8	20	Northern Hardwood Forest	9	55.75	22.0	N
HOGI	HOGI	Hog Island	ME	PRIV	02	1	1	33	Northern Hardwood Forest	4	37.00	2.0	N
BRUN	CHRO	Chimney Rock	ME	DoD	03-	4	4	18	Northern Hardwood Forest	5	30.00	13.5	D
BRUN	GOCO	Golf Course	ME	DoD	03-	4	4	13	Northern Coniferous Forest	7	37.50	24.0	C
NUBA	BKBR	Black Branch, Nulhegan B.	VT	FWS	04-	3	0	354	Northern Coniferous Forest	-	-	-	-
GMVT	BELV	Belvidere Mountain	VT	PRIV	95	1	1	1000	Northern Coniferous Forest	7	46.00	19.5	N
GMVT	RABR	Ranch Brook	VT	S/C	95-96	2	2	1100	Northern Coniferous Forest	7	46.50	20.5	N
GMVT	MANS	Mount Mansfield	VT	S/C	94-98	5	5	1173	Northern Coniferous Forest	5	55.80	19.5	N
GMVT	FORE	Fore	VT	S/C	96	1	1	1200	Northern Coniferous Forest	4	31.00	11.5	N
KNIS	HUNT	Green Mountain	VT	PRIV	97-	10	7	160	Scrub/Succession/Disturbed	13	90.57	54.0	C
VINS	VINS	Vermont Institute	VT	PRIV	91-99	9	9	320	Scrub/Succession/Disturbed	19	136.56	100.0	R
TACO	EQUI	Equinox Mountain	VT	PRIV	95	1	1	1200	Northern Coniferous Forest	6	49.00	12.5	N

Table 10 continued.

Loc.	Station	Name	State	Land-hold.[1]	History[2]	Num. years oper.[3]	Num. years data[3]	Elev.	Habitat	Num. species monit.[4]	Mean num. adults[5]	Priority species score[6]	Rec. for sta.[7]
MOOS	MOOS	Mount Moosilauke	NH	USFS	89-90,93-94	4	4	550	Northern Hardwood Forest	9	73.75	57.0	R
MOOS	HUBB	Hubbard Brook	NH	USFS	89-92	4	4		Northern Hardwood Forest	8	76.00	37.0	R
NHNH	NHNH	NHNHJPM	NH	PRIV	93-	14	14	174	Northern Coniferous Forest	4	26.29	40.5	C
ASRP	ASRP	Ashuelot River Park	NH	S/C	02-	5	5	144	Northern Hardwood Forest	6	68.40	30.5	C
KSMA	KSMA	Keene State WMA	NH	S/C	04-	3	3	148	Scrub/Succession/Disturbed	7	58.00	26.5	C
ATON	ATOS	Aton For.- Sandisfield Rd	CT	PRIV	02-	5	4	435	Northern Hardwood Forest	2	28.00	19.0	C
MDC1	MDC1	Metropolitan District	CT	PRIV	97-00	4	4	308	Northern Hardwood Forest	4	27.00	19.5	N
AUDU	GMFI	Great Mountain Forest	CT	PRIV	98-	9	9	473	Northern Hardwood Forest	9	46.78	39.0	C
Bird Conservation Region 13, Lower Great Lakes/St. Lawrence Plain													
KNIS	MISS	Mississquoi NWR	VT	FWS	01-04	4	3	35	Scrub/Succession/Disturbed	12	128.67	36.0	R
KNIS	KNIS	Knight Island	VT	S/C	96-97	2	2	34	Scrub/Succession/Disturbed	10	121.50	29.0	N
DRUM	BRAV	3 Bravo	NY	DoD	92-01	10	10	180	Scrub/Succession/Disturbed	16	188.50	51.5	R
DRUM	INDI	Barr Hill	NY	DoD	92-01	10	10	260	Southern Hardwood Forest	7	53.80	21.5	N
FHSP	FHSP	Fair Haven	NY	S/C	90-96	7	7	61	Northern Hardwood Forest	14	148.71	37.5	R
BBBO	NBLD	North Blind	NY	S/C	02-03	2	2	270	Northern Hardwood Forest	7	47.00	18.0	N
BBBO	KAIS	Kaiser	NY	S/C	02-03	2	2	270	Scrub/Succession/Disturbed	12	114.50	35.0	R
NAMP	NAMP	Northampton Park	NY	S/C	95-99	5	5	191	Scrub/Succession/Disturbed	7	80.80	26.5	N
TASW	TASW	Thousand Acre Swamp	NY	PRIV	03-	4	4	152	Southern Hardwood Forest	9	46.25	23.5	C
HELM	HELM	Helmer Marsh	NY	S/C	00-04	5	5	120	Southern Hardwood Forest	14	190.60	47.0	R
BALT	BALT	Baltimore Woods	NY	PRIV	90-93	4	4		Southern Hardwood Forest	11	75.50	19.5	N
MNWR	MAIN	Montezuma NWR	NY	FWS	99	1	1	118	Scrub/Succession/Disturbed	12	158.00	26.0	N
BMAC	BAAR	Buffalo Audubon Arboretum	NY	PRIV	03-	4	4	442	Scrub/Succession/Disturbed	15	150.50	48.5	C
FIVE	EANY	Five Rivers	NY	S/C	01-	6	6	50	Scrub/Succession/Disturbed	12	155.33	44.5	C
CORN	CORN	Cornell	NY	PRIV	89	1	1	326	Southern Hardwood Forest	18	263.00	55.0	R
AUDU	BFSW	Buttercup Farm	NY	PRIV	97-	10	10	140	Southern Hardwood Forest	14	146.70	34.5	C

Table 10 continued.

Loc.	Station	Name	State	Land-hold.[1]	History[2]	Num. years oper.[3]	Num. years data[3]	Elev.	Habitat	Num. species monit.[4]	Mean num. adults[5]	Priority species score[6]	Rec. for sta.[7]
LCPA	BIRU	Big Run	PA	PRIV	97-98	2	2	370	Northern Hardwood Forest	7	70.00	42.5	R
Bird Conservation Region 28, Appalachian Mountains													
AUDU	MWSF	Miles	CT	PRIV	97-	10	10	270	Southern Hardwood Forest	5	31.80	15.0	C
AUDU	SACE	Sharon Audubon Center	CT	PRIV	97-	10	10	320	Southern Hardwood Forest	6	42.80	6.0	D
AUDU	SACF	Culver Forest	CT	PRIV	97-	10	10	340	Southern Hardwood Forest	6	45.50	21.0	C
MARV	RACK	North Parcel - Tamarack	CT	PRIV	04-	3	1	366	Northern Hardwood Forest	3	32.00	4.0	D
MARV	KANE	Kane Station	CT	PRIV	02-	5	3	396	Southern Hardwood Forest	8	64.67	25.0	C
MARV	BEAV	Beaver Marsh	CT	PRIV	01-	6	4	399	Northern Hardwood Forest	12	99.75	19.0	C
BMNC	BMNC	Beaver Meadow	NY	PRIV	96-	11	9	460	Scrub/Succession/Disturbed	8	61.22	17.5	C
SPRG	SPRG	Spring Hill	NY	PRIV	92-01	10	10	610	Scrub/Succession/Disturbed	11	82.50	41.5	R
CAHI	CAHI	California Hill	NY	PRIV	06-	1	1	503	Scrub/Succession/Disturbed	8	86.00	30.5	C
CLDC	CLDC	James A. Zaepfel Nat.Sanc	NY	PRIV	01-	6	5	502	Scrub/Succession/Disturbed	11	91.80	46.0	C
CATS	PLAT	Plateau Mountain	NY	S/C	95	1	1	1200	Northern Hardwood Forest	9	60.00	29.5	R
POWD	POWD	Powderhouse Road 1	NY	PRIV	90-	17	17	366	Scrub/Succession/Disturbed	8	64.47	28.0	C
BING	BING	Powderhouse Road 2	NY	PRIV	90-93	4	4	364	Southern Hardwood Forest	6	40.00	19.5	N
PRCK	PRCK	Pierce Creek	NY	PRIV	92-97	6	6	427	Scrub/Succession/Disturbed	9	103.00	32.5	R
CMAC	CMS1	Constitution Marsh Sta. 1	NY	PRIV	02-	5	5	1	Scrub/Succession/Disturbed	9	53.40	34.0	C
WPNT	WPNT	West Point	NY	DoD	93-01	9	9	253	Northern Hardwood Forest	2	15.22	11.0	N
HTAC	HTAC	Hilltop Acre	NJ	PRIV	90-93	4	4		Northern Hardwood Forest	9	93.25	16.0	N
MERR	APOR	Apple Orchard	NJ	PRIV	99-03,05-	7	5	287	Scrub/Succession/Disturbed	9	101.60	26.5	C
MERR	MERR	Merrill Creek	NJ	PRIV	98	1	1	302	Southern Hardwood Forest	7	48.00	24.5	N
MCRM	MCRM	Montana Forest Station	NJ	PRIV	05-06	2	2	195	Southern Hardwood Forest	10	103.00	38.5	R
HEBR	CLHI	Hebron - Clara Hill	PA	PRIV	97-	10	7	700	Northern Hardwood Forest	11	97.00	45.0	C
POCO	SKYT	Skytop	PA	PRIV	00-04	5	5	524	Northern Hardwood Forest	0	11.80	0.0	N
POCO	LONG	Long Road	PA	PRIV	01-	6	5	442	Northern Hardwood Forest	0	5.20	0.0	D

Table 10 continued.

Loc.	Station	Name	State	Land-hold.[1]	History[2]	Num. years oper.[3]	Num. years data[3]	Elev.	Habitat	Num. species monit.[4]	Mean num. adults[5]	Priority species score[6]	Rec. for Sta.[7]
POCO	TWOM	Two Mile Run	PA	PRIV	01-	6	6	472	Northern Hardwood Forest	7	50.50	22.0	C
POCO	KETT	Kettle Creek	PA	PRIV	00-	7	7	243	Northern Hardwood Forest	2	26.57	4.0	D
LGMA	LGMA	Little Gap	PA	S/C	04-	1	0	415	Northern Hardwood Forest	-	-	-	-
TODD	TODD	Todd Sanctuary	PA	PRIV	90-92	3	3		Southern Hardwood Forest	1	9.67	10.5	N
RAKE	RAKE	Raker	PA	PRIV	90-93	4	4	180	Southern Hardwood Forest	5	69.75	14.0	N
RAYS	RAYS	Raystown	PA	PRIV	95	1	1	340	Scrub/Succession/Disturbed	15	115.00	76.0	R
CUVA	CUVA	Cumberland Valley	PA	PRIV	90-95	6	6	760	Southern Hardwood Forest	11	69.00	36.0	R
POCO	STRM		PA	PRIV	06-	1	1		Southern Hardwood Forest	3	16.00	2.0	D
YANK	YANK	Yankauer	WV	PRIV	97-04	8	7	120	Northern Hardwood Forest	5	48.57	9.0	N
MALL	MALL	Fairmont Mall	WV	S/C	97-98	2	2	340	Southern Hardwood Forest	10	73.00	48.0	R
CAVA	BETR	Beall Tract	WV	FWS	99	1	1	985	Northern Hardwood Forest	2	12.00	2.0	N
SUGR	SFPR	S. Fork Potomac River	WV	DoD	01-	6	6	536	Scrub/Succession/Disturbed	8	69.50	29.5	C
SUGR	BECR	Beaver Creek	WV	DoD	01-	6	6	658	Southern Hardwood Forest	3	15.50	20.0	C
SUGR	LIRU	Lick Run	WV	USFS	05-	2	2	625	Southern Hardwood Forest	5	30.50	26.0	C
SUGR	FLRU	Flesh Run	WV	USFS	05-	2	2	718	Northern Hardwood Forest	6	27.50	17.0	C
IVYK	IVYK	Ivy Knob	WV	S/C	96	1	1	1077	Southern Hardwood Forest	9	74.00	34.5	R
NERI	SAND	Sandstone Falls	WV	NPS	96-	11	8	390	Southern Hardwood Forest	23	179.88	84.0	C
NSVL	GLEN	Glendobbin	VA	PRIV	02-06	5	4	300	Scrub/Succession/Disturbed	8	66.25	22.0	N
NSVL	BLAN	NSVAS - Blandy	VA	S/C	02-06	5	4	200	Scrub/Succession/Disturbed	9	145.75	45.0	R
SHEN	JERU	Jeremy's Run	VA	NPS	93-03	11	11	762	Northern Hardwood Forest	10	95.82	46.0	R
SHEN	PAMO	Pass Mountain	VA	NPS	92	1	1	770	Northern Hardwood Forest	5	42.00	29.5	R
SHEN	PICL	Pinnacle Cliff	VA	NPS	92-03	12	12	1036	Northern Hardwood Forest	10	94.83	41.0	R
SHEN	PIRI	Pinnacle Ridge	VA	NPS	92	1	1	579	Northern Hardwood Forest	10	63.00	51.0	R
SHEN	THMO	Thorofare Mountain	VA	NPS	92	1	1	1006	Northern Hardwood Forest	4	33.00	15.0	N
SHEN	CRRO	New Crescent Rock	VA	NPS	93-03	11	11	1067	Northern Hardwood Forest	9	112.27	34.0	R

Table 10 continued.

Loc.	Station	Name	State	Land-hold.[1]	History[2]	Num. years oper.[3]	Num. years data[3]	Elev.	Habitat	Num. species monit.[4]	Mean num. adults[5]	Priority species score[6]	Rec. for sta.[7]
SHEN	OCRO	Old Crescent Rock	VA	NPS	92	1	1	1067	Northern Hardwood Forest	7	60.00	28.0	N
SHEN	HARI	Hazeltop Ridge	VA	NPS	92-03	12	12	910	Northern Hardwood Forest	8	74.17	38.0	R
RWMA	RWMA	Rapidan WMA	VA	S/C	01-02	2	2	488	Southern Hardwood Forest	16	124.00	82.5	R
SHEN	DEMO	Dean Mountain	VA	NPS	93-03	11	11	945	Northern Hardwood Forest	10	137.64	42.5	R
SHEN	BIRU	Big Run	VA	NPS	93-03	11	11	762	Northern Hardwood Forest	11	77.09	42.5	R
AGSP	AGSP	Augusta Springs	VA	USFS	94-96	3	3	495	Scrub/Succession/Disturbed	2	24.67	11.0	N
Bird Conservation Region 30, New England/Mid-Atlantic Coast													
GIFA	GIFA	Gilsland Farm	ME	PRIV	99-	8	3	6	Northern Hardwood Forest	10	90.33	31.0	C
LNER	LNER	Wells Reserve	ME	FWS	90-	17	17	21	Scrub/Succession/Disturbed	11	106.82	40.0	C
MBBS	MBBS	Massabesic	NH	PRIV	97-06	10	10	70	Northern Hardwood Forest	4	29.20	13.5	N
MERD	MERD	Merriam Road	MA	PRIV	94-99	6	6	133	Scrub/Succession/Disturbed	11	88.17	53.0	R
CACO	LOBE	Longnook Beach	MA	NPS	99-03	5	5	46	Northern Hardwood Forest	5	34.60	16.0	N
CACO	OADU	Oak Dunes	MA	NPS	99-03	5	5	30	Northern Hardwood Forest	4	28.00	15.5	N
CACO	HIHO	Higgins House	MA	NPS	99-03	5	5	15	Southern Coniferous Forest	5	33.00	13.0	N
CACO	BLHI	Blueberry Hill	MA	NPS	99-03	5	5	15	Northern Hardwood Forest	3	21.80	11.0	N
CACO	MABE	Marconi Beach	MA	NPS	99-03	5	5	12	Southern Coniferous Forest	4	44.60	8.5	N
CACO	NASC	Nauset School	MA	NPS	99-03	5	5	15	Northern Hardwood Forest	5	41.20	13.0	N
WING	PUNK	Punkhorn Parklands F. Sta	MA	S/C	02-	5	5	14	Scrub/Succession/Disturbed	7	122.40	33.0	C
TUCK	TUCK	Tuckernuck Island	MA	PRIV	99-	1	0	10		-	-	-	-
IPLO	IPLO	Ice Pond Lot	MA	PRIV	90-01	12	12	3	Scrub/Succession/Disturbed	6	73.00	17.0	N
PAGR	PAGR	Pardon Gray	RI	PRIV	03	1	1	65	Northern Hardwood Forest	13	115.00	74.0	R
SKRI	HAZD	Hazard	RI	FWS	91-95	5	5	15	Northern Hardwood Forest	8	57.80	36.0	R
SKRI	TRUS	Trustom	RI	FWS	93-98	6	6	6	Northern Hardwood Forest	10	79.50	50.0	R
SKRI	NINI	Ninigret	RI	FWS	93-00	8	8	3	Scrub/Succession/Disturbed	7	96.13	35.0	R
CASP	MAP1	CT Aud. Center at Pomfret	CT	PRIV	01-	6	6	132	Scrub/Succession/Disturbed	13	111.50	51.5	C

Table 10 continued.

Loc.	Station	Name	State	Land-hold.[1]	History[2]	Num. years oper.[3]	Num. years data[3]	Elev.	Habitat	Num. species monit.[4]	Mean num. adults[5]	Priority species score[6]	Rec. for Sta.[7]
TCFS	MAP2	Trinity College Field Sta	CT	PRIV	01-	6	6	111	Northern Hardwood Forest	7	49.67	25.5	C
AUDU	BORF	Bent of the River 1	CT	PRIV	97-	10	10	91	Southern Hardwood Forest	4	31.80	25.0	C
AUDU	BORR	Bent of the River 2	CT	PRIV	97-	10	10	30	Scrub/Succession/Disturbed	4	42.90	10.5	D
THWO	THWO	Thrush Wood	CT	PRIV	91-	16	16	61	Northern Hardwood Forest	8	70.00	38.5	C
DEVI	DEVI	Devil's Den	CT	PRIV	92-98	7	7	244	Southern Hardwood Forest	8	77.71	39.0	R
EISE	EISE	Eisenhower Park	CT	S/C	98	1	1	20	Scrub/Succession/Disturbed	5	44.00	15.0	N
MOWO	MOWO	Moore's Woods	NY	S/C	94-	13	13	2	Northern Hardwood Forest	11	100.00	32.5	C
SINY	MASH	Mashomack Preserve	NY	PRIV	00-04	5	5	3	Scrub/Succession/Disturbed	9	140.60	29.5	R
QUCC	QUCC	Queens College Center	NY	S/C	00	1	1	32	Scrub/Succession/Disturbed	5	62.00	12.5	N
TIFF	TIFF	Tiffany Creek	NY	S/C	96-97	2	2	55	Southern Hardwood Forest	3	20.50	16.5	N
SBNC	NISS	Nissiquogue River	NY	PRIV	99-00	2	2	8	Southern Hardwood Forest	3	47.00	8.5	N
WAWO	WAWO	Warbler Woods	NY	S/C	92-	15	13	46	Southern Hardwood Forest	4	40.77	21.0	C
TRAC	HOFF	Hoffman Center	NY	PRIV	01-	6	3	59	Scrub/Succession/Disturbed	12	159.00	47.5	C
LAHO	LAUR	Laurel Hollow	NY	PRIV	92-	15	15	34	Southern Hardwood Forest	4	48.73	16.5	C
SSNC	SSNC	South Shore Nature Center	NY	S/C	01-	6	6	1	Northern Hardwood Forest	4	100.17	13.0	D
BUCK	BUHO	Buck's Hollow	NY	S/C	97-	10	9	61	Northern Hardwood Forest	3	27.11	11.5	D
BUCK	WIBR	Willowbrook	NY	S/C	99-	8	7	12	Southern Hardwood Forest	7	66.57	23.0	C
BUCK	CORS	Corson's Brook Woods	NY	S/C	00-	7	6	43	Northern Hardwood Forest	4	34.50	10.5	D
BUCK	FTTI	Fort Tilden	NY	NPS	97-	10	9	6	Scrub/Succession/Disturbed	4	59.67	21.0	C
FRBN	FRBV	Flat Rock Brook Nat. Asoc	NJ	S/C	01-03	3	3	85	Southern Hardwood Forest	9	105.00	23.0	N
JCRF	FNWR	E.B. Forsythe NWR	NJ	FWS	99-01	3	3	5	Southern Hardwood Forest	8	63.67	28.5	R
DIVI	RAIL	Railroad	NJ	S/C	94	1	1	15	Scrub/Succession/Disturbed	3	39.00	19.0	N
DIVI	BEAR	Bear Swamp	NJ	S/C	94-	13	13	6	Southern Hardwood Forest	6	45.38	53.0	C
JCRF	WOLA	Woodcock Lane	NJ	FWS	99-01	3	3	3	Scrub/Succession/Disturbed	6	57.00	30.0	R
NEWA	UDWN	Delaware Woods North	DE	S/C	94-99	6	6	29	Southern Hardwood Forest	1	27.33	10.5	N

Table 10 continued.

Loc.	Station	Name	State	Land-hold.[1]	History[2]	Num. years oper.[3]	Num. years data[3]	Elev.	Habitat	Num. species monit.[4]	Mean num. adults[5]	Priority species score[6]	Rec. for Sta.[7]
NEWA	UDWS	Delaware Woods South	DE	S/C	94-99	6	6	29	Southern Hardwood Forest	1	33.33	10.5	N
PWRC	PWRC	Patuxent	MD	FWS	92-98	7	7	12	Scrub/Succession/Disturbed	11	87.71	66.5	R
GPNS	GPNS	Greenburry Point N. Sev.	MD	DoD	05-06	2	2	5	Scrub/Succession/Disturbed	8	90.00	22.0	N
JBWS	JBWS	Jug Bay Wetland Sanctuary	MD	S/C	90-	17	17	30	Southern Hardwood Forest	8	106.76	30.0	C
NAVY	INHE	Indian Head	MD	DoD	92-03	12	12	6	Southern Hardwood Forest	7	39.17	26.5	N
NAVY	STNE	Stump Neck	MD	DoD	93-03	11	11	9	Southern Hardwood Forest	8	66.09	37.0	R
NAVY	PLOW	Patuxent Lowland	MD	DoD	92-	15	15	30	Southern Hardwood Forest	8	59.33	38.5	C
NAVY	PUP2	Patuxent Upland 2	MD	DoD	92-	15	15	30	Southern Hardwood Forest	8	46.60	47.0	C
NAVY	PUP1	Patuxent Upland 1	MD	DoD	92-	15	15	21	Southern Hardwood Forest	8	53.20	46.5	C
BELV	BLOW	Belvoir Lowland	VA	DoD	95-02	8	8	9	Southern Hardwood Forest	8	46.88	17.5	N
BELV	BUPL	Belvoir Upland	VA	DoD	95-02	8	8	38	Northern Hardwood Forest	7	46.38	32.0	R
BELV	MAS2	Mason Neck 2	VA	FWS	95-	12	12	6	Northern Hardwood Forest	8	56.08	25.5	C
NAVY	DAHL	Dahlgren	VA	DoD	92-02	11	11	7	Southern Hardwood Forest	7	64.91	25.5	N
Bird Conservation Region 29, Piedmont													
GTSW	GTSW	Great Swamp NWR	NJ	FWS	90-03	14	14	67	Southern Hardwood Forest	10	146.07	26.0	N
HOPE	FL--	Hopewell	NJ	PRIV	90-	17	17	130	Scrub/Succession/Disturbed	14	211.41	52.5	C
CBWP	CBWP	C. Brooke Worth Preserve	PA	PRIV	97-	10	7	97	Southern Hardwood Forest	7	86.71	19.0	C
HARF	HARF	Harford Glen	MD	S/C	92-00	9	9	46	Southern Hardwood Forest	8	81.11	30.5	R
STTM	STTM	St. Timothy's School	MD	PRIV	90-96	7	7	130	Scrub/Succession/Disturbed	10	87.86	28.5	R
ADVE	ADVE	Adventure	MD	PRIV	00-	7	7	91	Southern Hardwood Forest	7	53.43	21.0	C
BANC	BANC	Banshee Reeks	VA	S/C	03,05-	3	3	117	Scrub/Succession/Disturbed	14	159.33	47.0	C
ESAA	CLFM	Clifton Farm	VA	PRIV	04-	3	2	623	Scrub/Succession/Disturbed	9	61.00	29.5	C
QUAN	NEWB	New Breckinridge Road	VA	DoD	95-	12	11	76	Southern Hardwood Forest	5	37.64	20.5	C
QUAN	HOTP	Hotpatch Road	VA	DoD	95-96	2	2	76	Southern Hardwood Forest	4	15.00	18.5	N
QUAN	AMMO	Ammunition Storage	VA	DoD	95-	12	11	76	Southern Hardwood Forest	4	24.73	18.5	C

Table 10 continued.

Loc.	Station	Name	State	Land-hold.[1]	History[2]	Num. years oper.[3]	Num. years data[3]	Elev.	Habitat	Num. species monit.[4]	Mean num. adults[5]	Priority species score[6]	Rec. for Sta.[7]
QUAN	LOGC	MCBQ-LOGC	VA	DoD	97-	10	9	76	Southern Hardwood Forest	7	39.89	15.5	C
WEST	WEST	Westview	VA	PRIV	98-02	5	5	53	Southern Hardwood Forest	10	79.60	26.5	N
POWA	POWA	Powhatan	VA	S/C	03-	4	4	73	Southern Hardwood Forest	14	103.50	41.0	C
Bird Conservation Region 27, Southeastern Coastal Plain													
BELV	MAS1	Mason Neck 1	VA	FWS	95-	12	12	6	Southern Hardwood Forest	7	47.58	21.0	C
BELV	APH2	A.P. Hill 2	VA	DoD	95-03	9	9	61	Southern Hardwood Forest	6	45.67	21.0	R
BELV	APH1	A.P. Hill 1	VA	DoD	95-03	9	9	55	Southern Hardwood Forest	7	66.56	23.0	R
TIDE	OWLS	Owls Creek	VA	DoD	95-02	8	8	3	Southern Hardwood Forest	4	28.63	7.0	N
TIDE	POND	Oceana Pond	VA	DoD	95-02	8	8	6	Southern Hardwood Forest	7	41.75	14.0	N
TIDE	PEND	Pendleton	VA	S/C	95-02	8	8	3	Southern Hardwood Forest	6	49.13	13.0	N
DISM	DISM	Dismal Swamp 2	VA	FWS	90-00,02-	16	16	6	Southern Hardwood Forest	4	49.25	20.0	C
TIDE	FENT	Fentress	VA	DoD	95-02	8	8	4	Southern Hardwood Forest	4	37.38	8.0	N
DIS1	DIS1	Dismal Swamp 1	VA	FWS	89	1	0	6	Southern Hardwood Forest	-	-	-	-
TIDE	ROTH	Rothr Antenna	VA	DoD	95-02	8	8	6	Southern Hardwood Forest	5	63.13	14.0	N

[1] The owner of the land on which the station is located: PRIV - Private Landholder; S/C - State, County, or City Jurisdictions; DoD - Department of Defense; NPS - National Park Service; FWS - U.S. Fish and Wildlife Service; USFS - U.S. Forest Service.

[2] The years in which the station was operated. Groupings that end in a dash are considered "active" stations and are expected to continue operations through at least the 2008 MAPS season.

[3] The number of years the station operated during 1989-2006 and the number of years for which data have been included in analyses. If number of data years is lower than the number of years operated, the operator may have not submitted all of their data to IBP or that data may have been submitted but have not been sufficiently verified for use in analysis.

[4] Number of species for which the mean number of adults captured for the species was $\geq$ 2.5 individuals per year and the species was a usual breeder (see Methods).

[5] Cumulative mean number of adults per year at the station for species with a mean of $\geq$ 2.5 adults per year and that were usual breeders (see Methods).

[6] Cumulative species priority scores (see Methods and Tables 2-7), using listing and trend criteria at the BCR level, for those species with a mean of $\geq$ 2.5 adults per year and that were usual breeders (see Methods).

[7] Recommendations for both active and discontinued stations: C - Continue, D - Consider discontinuing, R - Re-establish, N - No need to re-establish, "-" - data not available for analysis and hence no recommendation can be made.

Table 11. Goals for MAPS program growth in the Northeast (double total number of stations) by BCR.

BCR	Proportion of NE covered[1]	Proportion priority species[2]	Mean proportion[3]	Target num. stations[4]	Num. active stations[5]	Num. new stations needed
14 – Atlantic Northern Forest	0.264	0.182	0.223	33	13	20
13 – Lower Great Lakes / St. Lawrence Plain	0.108	0.133	0.120	18	4	14
28 – Appalachian Mountains	0.388	0.212	0.300	45	23	22
30 – New England / Mid-Atlantic Coast	0.114	0.212	0.163	25	24	1
29 – Piedmont	0.099	0.136	0.118	18	9	9
27 – Southeastern Coastal Plain	0.026	0.126	0.076	11	2	9
Total for Northeast Region	1.00	1.00	1.00	150	75	75

[1] Proportion of the area of the 13 Northeast states covered by each BCR.
[2] Number priority species in the BCR divided by the summed number priority species of each BCR.
[3] Mean of the proportional coverage and mean priority species fields.
[4] Mean proportion × 150 (the target no. of stations for the region.
[5] Number of active stations for which we have some data.

Table 12. Federal and state land Parcels[1] in the Northeast region by Bird Conservation Region (BCR) and MAPS stations operated on those lands during 1989-2007. Within each BCR, parcels are sorted by size.

					MAPS stations	
BCR	Parcel name	Agency[2]	State	Area (ha)	Active	Inactive
14	Adirondack Park	State	NY	2355790	0	0
14	White Mountain National Forest	USFS	ME-NH	295007	1	2
14	Green Mountain National Forest[3]	USFS	VT	220165	0	0
14	Baxter State Park	State	ME	72579	0	0
14	White Mountain National Forest Purchase Unit	USFS	NH	21999	0	0
14	Mount Mansfield State Forest	State	VT	17071	0	3
14	Pemigewasset Wilderness	USFS	NH	16832	0	0
14	Nash Stream State Forest	State	NH	16027	0	0
14	Passamaquoddy Indian Reservation	BIA	ME	11417	0	0
14	Groton State Forest	State	VT	11057	0	0
14	Silvio O. Conte National Fish and Wildlife Refuge	FWS	VT	10912	0	0
14	Conte National Wildlife Refuge	State	VT	10860	0	0
14	Acadia National Park	NPS	ME	10681	0	1
14	Sandwich Range Wilderness	USFS	NH	10041	0	0
14	Baxter State Park Scientific Management Area	State	ME	9963	0	0
14	Presidential Range-Dry River Wildern.	USFS	NH	9829	0	0
14	Coolidge State Forest	State	VT	9613	0	0
14	White Rocks National Recreation Area	USFS	VT	9288	0	0
14	West Mountain Wildlife Mgmt. Area	State	VT	9069	0	0
14	The Kingdom State Forest	State	VT	8786	0	0
14	Allagash Wilderness Waterway S.P.	State	ME	8658	0	0
14	Camels Hump State Park	State	VT	8640	0	0
14	Breadloaf Wilderness	USFS	VT	8599	0	0
14	Frank E. Jadwin Memorial S.F.[3]	State	NY	8341	0	0
14	Moosehorn National Wildlife Refuge	FWS	ME	7726	0	0
14	Lake Umbagog N.W.R.	FWS	ME-NH	7050	0	0
14	Victory State Forest	State	VT	6675	0	0
14	October Mountain State Forest	State	MA	6604	0	0
14	Lye Brook Wilderness	USFS	VT	6392	0	0
14	Connecticut Lakes Nature Preserve	State	NH	6064	0	0
14	Lesser Wilderness State Forest	State	NY	5720	0	0
14	CC Putnam State Forest	State	VT	5613	0	0
14	Pisgah State Park	State	NH	5531	0	0
14	Mount Blue State Park	State	ME	5217	0	0
14	Tug Hill State Forest	State	NY	5051	0	0

Table 12 continued.

BCR	Parcel name	Agency[2]	State	Area (ha)	MAPS stations	
					Active	Inactive
14	Deer River State Forest	State	NY	4761	0	0
14	U.S. Naval Survival Escape and Evasion Training Facility	DoD	ME	4747	4	2
14	Caribou-Speckled Mtn. Wilderness	USFS	ME	4582	0	0
14	Steam Mill Brook Wildl. Mgmt. Area	State	VT	4266	0	0
14	Beartown State Forest	State	MA	4260	0	0
14	Randolph Community Forest	State	NH	4145	0	0
14	Savoy Mountain State Forest	State	MA	4121	0	0
14	Tunxis State Forest[3]	State	CT	4112	0	0
14	Pittsfield State Forest	State	MA	4053	0	0
14	Warwick State Forest	State	MA	3992	0	0
14	Housatonic State Forest[3]	State	CT	3917	0	0
14	Long Trail State Forest	State	VT	3913	0	0
14	Fort Ethan Allen Military Reservation	DoD	VT	3856	1	1
14	Sunkhaze Meadows N.W.R.	FWS	ME	3854	0	0
14	Bill Sladyk Wildlife Mgmt. Area	State	VT	3732	0	0
14	Winona State Forest	State	NY	3728	0	0
14	Penobscot River Corridor	State	ME	3627	0	0
14	Connecticut Lakes Wildl. Mgmt. Area	State	NH	3613	0	0
14	Happy Valley Wildlife Mgmt. Area	State	NY	3599	0	0
14	Appalachian Trail Corridor	State	ME	3567	0	0
14	Bunnell Working Forest	State	NH	3349	0	0
14	Appalachian Trail Corridor	State	VT	3328	0	0
14	Jay State Forest	State	VT	3316	0	0
14	Grant Powell Memorial State Forest	State	NY	3295	0	0
14	Pillsbury State Park	State	NH	3245	0	0
14	Wendell State Forest	State	MA	3238	0	0
14	Littlejohn Wildlife Management Area	State	NY	3212	0	0
14	Arthur Davis Wildlife Mgmt. Area	State	VT	3204	0	0
14	Mohawk Trail State Forest	State	MA	3141	0	0
14	Okemo State Forest	State	VT	3102	0	0
14	Willoughby State Forest	State	VT	3013	0	0
14	Dubuque Memorial State Forest	State	MA	3009	0	0
14	Franconia Notch State Park	State	NH	2808	0	0
14	Peru Peak Wilderness	USFS	VT	2776	0	0
14	Gile State Forest	State	NH	2737	0	0
14	Chalet Wildlife Management Area	State	MA	2700	0	0
14	Lt. Gordon Manual Wildl. Mgmt. Area	State	ME	2689	0	0
14	Big Branch Wilderness	USFS	VT	2678	0	0
14	Bud Leavitt Wildlife Mgmt. Area	State	ME	2562	0	0

Table 12 continued.

BCR	Parcel name	Agency[2]	State	Area (ha)	MAPS stations	
					Active	Inactive
14	Les Newell Wildlife Mgmt. Area	State	VT	2483	0	0
14	Great Gulf Wilderness	USFS	NH	2336	0	0
14	Roxbury State Forest	State	VT	2295	0	0
14	Camden Hills State Park	State	ME	2265	0	0
14	Brownfield Bog Wildlife Mgmt. Area	State	ME	2260	0	0
14	Cardigan Mountain State Forest	State	NH	2230	0	0
14	Green River Reservoir State Park	State	VT	2225	0	0
14	Crawford Notch State Park	State	NH	2207	0	0
14	Aroostook National Wildlife Refuge	FWS	ME	2204	0	0
14	Sandisfield State Forest	State	MA	2177	0	0
14	Gene Latourneau Wild. Mgmt. Area	State	ME	2082	0	0
14	George D. Aiken Wilderness	USFS	VT	2069	0	0
14	Victory Basin Wildlife Mgmt. Area	State	VT	2005	0	0
14	Mount Kearsarge State Forest	State	NH	1970	0	0
14	Mt Washington State Forest	State	MA	1856	0	0
14	Fox Den Wildlife Management Area	State	MA	1810	0	0
14	Vernon S Walker Wildlife Mgmt. Area	State	ME	1807	0	0
14	Tolland State Forest	State	MA	1784	0	0
14	Peru Wildlife Management Area	State	MA	1725	0	0
14	Mattawamkeag River W.M.A.	State	ME	1688	0	0
14	Enfield Wildlife Management Area	State	NH	1685	0	0
14	Loring Air Force Base (Closed)	DoD	ME	1663	0	0
14	Leominster State Forest	State	MA	1658	0	0
14	Wyantenock State Forest[3]	State	CT	1641	0	0
14	Dickwood Lake Wildlife Mgmt. Area	State	ME	1636	0	0
14	Monroe State Forest	State	MA	1619	0	0
13	Green Mountain National Forest	USFS	VT	220165	0	1
13	Fort Drum	DoD	NY	44706	0	2
13	Cattaraugus Indian Reservation	BIA	NY	10831	0	0
13	Frank E. Jadwin Memorial S.F.[3]	State	NY	8341	0	0
13	Pymatuning State Park	State	PA	8239	0	0
13	Brasher Falls State Forest	State	NY	7958	0	0
13	Letchworth State Park	State	NY	5751	0	0
13	Tug Hill State Forest[3]	State	NY	5051	0	0
13	Deer River State Forest[3]	State	NY	4761	0	0
13	Sugar Hill State Forest[3]	State	NY	3706	0	0
13	Upper and Lower Lakes W.M.A.	State	NY	3556	0	0
13	Missisquoi National Wildlife Refuge	FWS	VT	2901	0	1
28	Jefferson National Forest	USFS	VA	595109	0	0
28	George Washington National Forest	USFS	VA	182320	3	2

Table 12 continued.

BCR	Parcel name	Agency[2]	State	Area (ha)	MAPS stations	
					Active	Inactive
28	Sproul State Forest	State	PA	123519	0	0
28	Susquehannock State Forest	State	PA	104700	0	0
28	Bald Eagle State Forest	State	PA	78291	0	0
28	Elk State Forest	State	PA	77149	0	0
28	Monongahela National Forest	USFS	WV	76381	0	0
28	Moshannon State Forest	State	PA	75155	0	0
28	Tioga State Forest	State	PA	65527	0	0
28	Tiadaghton State Forest	State	PA	59190	0	0
28	Mount Rogers N.R.A.	USFS	VA	48218	0	0
28	Loyalsock State Forest	State	PA	46334	0	0
28	Shenandoah National Park	NPS	VA	43263	0	8
28	Cherokee National Forest	USFS	VA-TN-NC	39500	0	0
28	Spruce Knob-Seneca Rocks N.R.A.	USFS	WV	39008	0	0
28	Tuscarora State Forest	State	PA	38150	0	0
28	Rothrock State Forest	State	PA	37872	0	0
28	Shenandoah Wilderness	NPS	VA	35283	0	2
28	Michaux State Forest	State	PA	33518	0	0
28	Delaware State Forest	State	PA	33039	0	0
28	Buchanan State Forest	State	PA	27929	0	0
28	Delaware Water Gap N.R.A.	NPS	NJ-PA	27778	4	3
28	Allegany State Park	State	NY	27131	0	0
28	New River Gorge National River	NPS	WV	26117	1	0
28	Forbes State Forest	State	PA	22305	0	0
28	Savage River State Forest	State	MD	21697	0	0
28	Slide Mountain Wilderness	State	NY	20507	0	0
28	Green Ridge State Forest	State	MD	18842	0	0
28	Quehanna Wild Area	State	PA	18206	0	0
28	State Park	State	PA	17448	0	0
28	Allegheny National Forest	USFS	PA	17280	0	0
28	Monongahela NF Purchase Unit	USFS	WV	16501	0	0
28	Chesapeake and Ohio Canal NHP	NPS	MD	14835	2	0
28	Cranberry Wilderness	USFS	WV	14703	0	0
28	Big Indian Wilderness	State	NY	13590	0	0
28	Goshen-Little Mountain W.M.A.	State	VA	13394	0	0
28	Sundown Wild Forest	State	NY	12341	0	0
28	Hammersley Wild Area	State	PA	12073	0	0
28	Weiser State Forest	State	PA	11642	0	0
28	Allegany Indian Reservation	BIA	NY	10746	2	0
28	Clinch Mountain Wildl. Mgmt. Area	State	VA	10096	0	0

Table 12 continued.

BCR	Parcel name	Agency[2]	State	Area (ha)	MAPS stations	
					Active	Inactive
28	Gallitzin State Forest	State	PA	9036	0	0
28	Cumberland Gap National Hist. Park	NPS	VA-KY-TN	8526	0	0
28	Minnewaska State Park	State	NY	8233	0	0
28	Otter Creek Wilderness	USFS	WV	8094	0	0
28	R.D. Bailey Lake Wildlife Mgmt. Area	State	WV	7834	0	0
28	Blue Ridge Parkway	NPS	VA	7736	0	0
28	Cherry Ridge Wild Forest	State	NY	7701	0	0
28	Elk River Wildlife Management Area	State	WV	7614	0	0
28	Sterling Forest State Park	State	NY	7609	0	0
28	Ohiopyle State Park	State	PA	7559	0	0
28	West Kill Mountain Wilderness	State	NY	7168	0	0
28	Indian Head Wilderness	State	NY	7038	0	1
28	Moraine State Park	State	PA	6689	0	0
28	Willowemoc Wild Forest	State	NY	6473	0	0
28	Stokes State Forest	State	NJ	6325	0	0
28	Laurel Ridge State Park	State	PA	5885	0	0
28	Clarence Fahnestock Memorial S. P.	State	NY	5805	0	0
28	Clear Creek State Forest	State	PA	5780	0	0
28	Hickory Run State Park	State	PA	5718	0	0
28	Stonewall Jackson Lake W.M.A.	State	WV	5610	0	0
28	Highland Wildlife Management Area	State	VA	5550	0	0
28	Coopers Rock State Forest	State	WV	5516	0	0
28	Laurel Lake Wildlife Mgmt. Area	State	WV	5498	0	0
28	Balsam Lake Mountain Wild Forest	State	NY	5485	0	0
28	Bluestone Lake Wildlife Mgmt. Area	State	WV	5429	0	0
28	Pine Creek Gorge Natural Area	State	PA	5363	0	0
28	T.M. Gathright Wildlife Mgmt. Area	State	VA	5328	0	0
28	Lackawanna State Forest	State	PA	5317	0	0
28	Ricketts Glen State Park	State	PA	5174	0	0
28	Berwind Lake Wildlife Mgmt. Area	State	WV	5078	0	0
28	High Point State Park	State	NJ	4941	0	0
28	Kaaterskill Wild Forest	State	NY	4837	0	0
28	Gauley River National Rec. Area	NPS	WV	4804	0	0
28	Martin Hill Wild Area	State	PA	4756	0	0
28	Blackhead Range Wild Forest	State	NY	4602	0	0
28	Connecticut Hill Wildlife Mgmt. Area	State	NY	4477	0	0
28	Mountain Lake Wilderness	USFS	VA	4429	0	0
28	Burnsville Lake Wildlife Mgmt. Area	State	WV	4387	0	0
28	Hunter Mountain Wild Forest	State	NY	4354	0	0

Table 12 continued.

BCR	Parcel name	Agency[2]	State	Area (ha)	MAPS stations	
					Active	Inactive
28	Seneca State Forest	State	WV	4343	0	0
28	Canaan Valley N.W.R.	FWS	WV	9744	0	1
28	East Lynn Lake Wildlife Mgmt. Area	State	WV	9606	0	0
28	Bucktail State Park Natural Area	State	PA	9219	0	0
28	Sleepy Creek Wildlife Mgmt. Area	State	WV	9210	0	0
28	Watoga State Park	State	WV	4337	0	0
28	Middle Mountain Wild Forest	State	NY	4325	0	0
28	Burnt-Rossman Hills State Forest	State	NY	4283	0	0
28	Calvin Price State Forest	State	WV	4214	0	0
28	Potomac State Forest	State	MD	4213	0	0
28	Dolly Sods Wilderness	USFS	WV	4204	0	0
28	Tunxis State Forest[3]	State	CT	4112	0	0
28	Chief Cornstalk Wildlife Mgmt. Area	State	WV	4042	0	0
28	Saint Mary's Wilderness	USFS	VA	3970	0	0
28	Housatonic State Forest[3]	State	CT	3917	0	0
28	James River Face Wilderness	USFS	VA	3898	0	0
28	Dry Brook Ridge Wild Forest	State	NY	3850	0	0
28	Lewis Wetzel Wildlife Mgmt. Area	State	WV	3825	0	0
28	Bluestone Lake	DoD	VA-WV	3805	0	0
28	Kanawha State Forest	State	WV	3804	0	0
28	Dans Mountain Wildlife Mgmt. Area	State	MD	3788	0	0
28	Rough Mountain Wilderness	USFS	VA	3735	0	0
28	Sugar Hill State Forest[3]	State	NY	3706	0	0
28	Beech Fork Lake Wildlife Mgmt. Area	State	WV	3706	0	0
28	New Michigan State Forest	State	NY	3687	0	0
28	Charles E. Baker State Forest	State	NY	3682	0	0
28	Kumbrabow State Forest	State	WV	3669	0	0
28	Hagy Wildlife Management Area	State	VA	3661	0	0
28	South Mountain State Park	State	MD	3646	0	0
28	Rapidan Wildlife Management Area	State	VA	3639	0	1
28	Fork Creek Wildlife Mgmt. Area	State	WV	3552	0	0
28	Nathaniel Mtn.Wildl. Mgmt. Area	State	WV	3550	0	0
28	Hughes River Wildlife Mgmt. Area	State	WV	3416	0	0
28	Short Mountain Wildlife Mgmt. Area	State	WV	3414	0	0
28	Cabwaylingo State Forest	State	WV	3332	0	0
28	Waywayanda State Park	State	NJ	3307	0	0
28	Holly River State Park	State	WV	3236	0	0
28	Cook Forest State Park	State	PA	3226	0	0
28	Panther State Forest	State	WV	3156	0	0
28	Allamuchy State Park	State	NJ	3102	0	0

Table 12 continued.

BCR	Parcel name	Agency[2]	State	Area (ha)	MAPS stations	
					Active	Inactive
28	The Big Survey WLMA	State	VA	3049	0	0
28	Summersville Lake Wildl. Mgmt. Area	State	WV	2951	0	0
28	Havens Wildlife Management Area	State	VA	2937	0	0
28	Amherst-Plymouth Wildl. Mgmt. Area	State	WV	2920	0	0
28	Radford Army Ammunition Plant	DoD	VA	2862	0	0
28	Springfield Wildlife Management Area	State	WV	2753	0	0
28	Rich Hole Wilderness	USFS	VA	2753	0	0
28	Wallkill River N.W.R.	FWS	NJ-NY	2714	0	0
28	Garrett State Forest	State	MD	2626	0	0
28	Indian Springs Wildlife Mgmt. Area	State	MD	2607	0	0
28	Cacapon State Park	State	WV	2590	0	0
28	Sutton Lake	DoD	WV	2528	0	0
28	Hidden Valley Wildlife Mgmt. Area	State	VA	2509	0	0
28	Ramseys Draft Wilderness	USFS	VA	2499	0	0
28	Canaan Valley State Park	State	WV	2456	0	0
28	Beartown Wilderness	USFS	VA	2440	0	0
28	Barbours Creek Wilderness	USFS	VA	2406	0	0
28	Picatinny Arsenal	DoD	NJ	2380	0	0
28	Catoctin Mountain Park	NPS	MD	2354	0	0
28	Lewis Fork Wilderness	USFS	VA	2336	0	0
28	Kimberling Creek Wilderness	USFS	VA	2302	0	0
28	Laurel Fork North Wilderness	USFS	WV	2189	0	0
28	Big Ugly Wildlife Management Area	State	WV	2157	0	0
28	Laurel Fork South Wilderness	USFS	WV	2106	0	0
28	Worthington State Forest	State	NJ	2090	0	0
28	Camp Creek State Forest	State	WV	2090	0	0
28	Wallback Wildlife Management Area	State	WV	2086	0	0
28	Cunningham Falls State Park	State	MD	2073	0	0
28	Fairystone Farms Wildl. Mgmt. Area[3]	State	VA	2059	0	0
28	Deep Creek Lake NRMA	State	MD	2005	0	0
28	Greenbrier State Forest	State	WV	1986	0	0
28	Hamburg Mtn Wildlife Mgmt. Area	State	NJ	1976	0	0
28	Grayson Highlands State Park	State	VA	1940	0	0
28	Douthat State Park	State	VA	1841	0	0
28	Mattatuck State Forest[3]	State	CT	1825	0	0
28	Warrior Mountain Wildl. Mgmt. Area	State	MD	1741	0	0
28	Lake Moomaw	DoD	VA	1681	0	0
28	Pequest Wildlife Management Area	State	NJ	1675	0	0
28	John W. Flanagan Reservoir	DoD	VA	1652	0	0
28	Wyantenock State Forest[3]	State	CT	1641	0	0

Table 12 continued.

BCR	Parcel name	Agency[2]	State	Area (ha)	MAPS stations	
					Active	Inactive
28	Ringwood Manor State Park	State	NJ	1616	0	0
28	G.R. Thompson Wildlife Mgmt. Area	State	VA	1606	0	0
30	Cape Cod National Seashore	NPS	MA	45454	0	6
30	Wharton State Forest	State	NJ	43430	0	0
30	Chesapeake Forest Lands	State	MD	23658	0	0
30	Assateague Island National Seashore	NPS	MD	16874	0	0
30	Aberdeen Proving Ground Mil. Res.	DoD	MD	14092	0	0
30	Brendan T. Byrne State Forest	State	NJ	13498	0	0
30	Edwin B. Forsythe N.W.R.	FWS	NJ	13284	0	1
30	Fort Dix Military Reservation	DoD	NJ	12349	0	0
30	Fishing Bay Wildlife Mgmt. Area	State	MD	11790	0	0
30	Greenwood Forest/Pasadena W.M.A.	State	NJ	11093	0	0
30	U.S. Army Aberdeen Proving Ground	DoD	MD	11054	0	0
30	Pachaug State Forest	State	CT	10550	0	0
30	Peaslee Wildlife Management Area	State	NJ	10411	0	0
30	Bass River State Forest	State	NJ	8705	0	0
30	Otis Air Force Base	DoD	MA	8200	0	0
30	Blackwater National Wildlife Refuge	FWS	MD	8065	0	0
30	Belleplain State Forest	State	NJ	7805	0	0
30	Bombay Hook N.W.R.	FWS	DE	6750	0	0
30	Cockaponset State Forest	State	CT	6690	0	0
30	Gunpowder Falls State Park[3]	State	MD	6625	0	1
30	Tuckahoe Wildlife Management Area	State	NJ	6332	0	0
30	Stafford Forge Wildlife Mgmt. Area	State	NJ	5982	0	0
30	Massachusetts Military Resrvtn	State	MA	5804	0	0
30	Chincoteague N.W.R.	FWS	VA	5594	0	0
30	Pocomoke River State Forest	State	MD	5443	0	0
30	Colliers Mills Wildlife Mgmt. Area	State	NJ	5373	0	0
30	Deal Island Wildlife Mgmt. Area	State	MD	5362	0	0
30	Millville Wildlife Management Area	State	NJ	5145	0	1
30	Natchaug State Forest	State	CT	5082	0	0
30	Myles Standish State Forest	State	MA	5032	0	0
30	Patuxent National Wildlife Refuge	FWS	MD	4885	0	1
30	Earle Naval Weapons Station	DoD	NJ	4846	0	0
30	Redden State Forest	State	DE	4427	0	0
30	Makepeace Lake Wildlife Mgmt. Area	State	NJ	4159	0	0
30	Bear Brook State Park	State	NH	4037	0	0
30	Cape May Wildlife Management Area	State	NJ	4007	0	0
30	Nipmuck State Forest	State	CT	3862	0	0
30	Lakehurst Naval Air Station	DoD	NJ	3812	0	0

Table 12 continued.

BCR	Parcel name	Agency[2]	State	Area (ha)	MAPS stations	
					Active	Inactive
30	Mad Horse Creek Wildl. Mgmt. Area	State	NJ	3713	0	0
30	Fort Devens (Closed)	DoD	MA	3699	0	1
30	Prime Hook National Wildlife Refuge	FWS	DE	3673	0	0
30	Meshomasic State Forest	State	CT	3640	0	0
30	Arcadia Mgmt. Area Forest Land	State	RI	3525	0	0
30	Big River Forest Land	State	RI	3304	0	0
30	Fort Eustis Military Reservation	DoD	VA	3266	0	0
30	Double Trouble State Park	State	NJ	3233	0	0
30	Mashpee National Wildlife Refuge	FWS	MA	3173	0	1
30	Naval Air Station, Patuxent River	DoD	MD	3160	3	0
30	Mockhorn Wildlife Management Area	State	VA	3142	0	0
30	Winslow Wildlife Management Area	State	NJ	3089	0	0
30	Shenipsit State Forest	State	CT	2837	0	0
30	Cape May National Wildlife Refuge	FWS	NJ	2740	0	1
30	Rachel Carson N.W.R.	FWS	ME	2688	2	0
30	Salmon River State Forest	State	CT	2666	0	0
30	Fort George G. Meade	DoD	MD	2595	0	1
30	Woodland Beach Wildlife Area	State	DE	2524	0	0
30	Heislerville Wildlife Mgmt. Area	State	NJ	2474	0	0
30	Saxis Wildlife Management Area	State	VA	2449	0	0
30	Assunpink Wildlife Management Area	State	NJ	2419	0	0
30	Dennis Creek Wildlife Mgmt. Area	State	NJ	2388	0	0
30	Bass River North State Forest	State	NJ	2359	0	0
30	Parker River National Wildlife Refuge	FWS	MA	2357	0	0
30	Egg Island Wildlife Management Area	State	NJ	2350	0	0
30	Freetown Fall River St Forest	State	MA	2246	0	0
30	Pawtuckaway State Park	State	NH	2211	0	0
30	Blackbird State Forest	State	DE	2185	0	0
30	Cape Henlopen State Park	State	DE	2172	0	0
30	Hockomock Swamp W.M.A.	State	MA	2114	0	0
30	Manuel F. Correllus St Forest	State	MA	2107	0	0
30	Great Bay Boulevard W.M.A.	State	NJ	2106	0	0
30	Great Meadows N.W.R.	FWS	MA	2093	0	0
30	C&D Canal Wildlife Area	State	DE	2075	0	0
30	Milford Neck Wildlife Area	State	DE	2035	0	0
30	Douglas State Forest	State	MA	2020	0	0
30	Union Lake Wildlife Mgmt. Area	State	NJ	2006	0	0
30	Fairmount Wildlife Management Area	State	MD	1998	0	0
30	Cedar Swamp Wildlife Area	State	DE	1960	0	0
30	Colonial National Historical Park[3]	NPS	VA	1940	0	0

Table 12 continued.

BCR	Parcel name	Agency[2]	State	Area (ha)	MAPS stations	
					Active	Inactive
30	Westover Air Force Base	DoD	MA	1937	0	0
30	Piscataway Park	NPS	MD	1911	0	0
30	Little Creek Wildlife Area	State	DE	1881	0	0
30	Mattatuck State Forest	State	CT	1825	0	0
30	Norman G. Wilder Wildlife Area	State	DE	1797	0	0
30	Andrews Air Force Base	DoD	MD	1774	0	0
30	U.S. Naval Surface Weapons Center Dahlgren Lab	DoD	VA	1691	0	1
30	Nanticoke Wildlife Area	State	DE	1685	0	0
30	Naugatuck State Forest	State	CT	1678	0	0
30	Naval Surface Warfare Center, Indian Head Division	DoD	MD	1637	0	2
30	Nehantic State Forest	State	CT	1633	0	0
30	Turkey Swamp Wildlife Mgmt. Area	State	NJ	1618	0	0
29	John H. Kerr Reservoir	DoD	VA-NC	26358	0	0
29	Quantico Marine Corps Base	DoD	VA	25374	3	1
29	Fort Pickett Military Reservation (Closed)	DoD	VA	17767	0	1
29	Appomattox-Buckingham State Forest	State	VA	8090	0	0
29	Cumberland State Forest	State	VA	6712	0	0
29	Gunpowder Falls State Park3	State	MD	6625	0	0
29	Patapsco Valley State Park	State	MD	5683	0	0
29	Prince William Forest Park	NPS	VA	4747	0	0
29	Fort Belvoir Military Reservation	DoD	VA	3792	0	2
29	Pocahontas State Park	State	VA	3241	0	0
29	Fredericksburg/Spotsylvania Battlefields Mem. Nat. Military[3]	NPS	VA	3095	0	0
29	Patuxent River State Park	State	MD	2975	0	0
29	Prince Edward-Gallion State Forest	State	VA	2842	0	0
29	Seneca Creek State Park	State	MD	2630	0	0
29	Fair Hill NRMA	State	MD	2284	0	0
29	Fairy Stone State Park	State	VA	2215	0	0
29	D&R Canal State Park	State	NJ	2204	0	0
29	Manassas National Battlefield Park	NPS	VA	2080	0	0
29	Fairystone Farms Wildl. Mgmt. Area[3]	State	VA	2059	0	0
29	Powhatan Wildlife Management Area	State	VA	1846	1	0
29	C.F. Phelps Wildlife Mgmt. Area	State	VA	1837	0	0
29	Great Swamp NWR Wilderness	FWS	NJ	1650	0	1
27	Great Dismal Swamp N.W.R.	FWS	VA-NC	40896	1	0
27	Fort A. P. Hill Military Reservation	DoD	VA	30347	0	2

Table 12 continued.

BCR	Parcel name	Agency[2]	State	Area (ha)	MAPS stations	
					Active	Inactive
27	U.S. Naval Weapons Station	DoD	VA	4061	0	0
27	Camp Peary Naval Reservation	DoD	VA	3494	0	0
27	Fredericksburg/Spotsylvania Battlefields Mem. Nat. Military[3]	NPS	VA	3095	0	0
27	Back Bay National Wildlife Refuge	FWS	VA	2927	0	0
27	Oceana Naval Air Station	DoD	VA	2290	0	2
27	Fort Lee Military Reservation	DoD	VA	2090	0	0
27	Chickahominy Wildlife Mgmt. Area	State	VA	2020	0	0
27	Colonial National Historical Park[3]	NPS	VA	1940	0	0
27	Cavalier Wildlife Management Area	State	VA	1840	0	0
27	Naval Base Norfolk	DoD	VA	1699	0	0
27	Naval Facility Engineering Command	DoD	VA-NC	1699	0	1

[1] We list each parcel of federal and state land that exceed 1600 ha in area, or 3200 ha for state lands in Pennsylvania and New York, where there were too many parcels > 1600 ha to list them all efficiently. Names and approximate areas for federal lands were obtained from the Federal Lands page of the United States Geological Survey (2006). Names and approximate areas for state parcels were obtained from Maine Office of Geographic Information Systems (2006), University of Vermont, Spatial Analysis Lab (2004), University of New Hampshire (1995), Commonwealth of Massachusetts (2005), Rhode Island Department of Environmental Management (2006), Connecticut Department of Environmental Protection (2002), New York State Office of Cyber Security and Critical Infrastructure Coordination (2005), New Jersey Department of Environmental Protection (1995), Pennsylvania Deptartment of Conservation and Natural Resources (2006), Division of Parks & Recreation and Delaware Forest Service (1998), Maryland Department of Natural Resources (1999), West Virginia University (2000), and Virginia Department of Conservation and Recreation (2005).

[2] Manager of the parcel: USFS - U.S. Forest Service; NPS - National Park Service; FWS - U.S. Fish and Wildlife Service; BIA- Bureau of Indian Affairs; DoD - Department of Defense; State - state owned.

[3] These parcels are listed twice, for two different BCRs, indicating that >10% of the parcel area occurs in each BCR.

Figure 1. Number of active MAPS stations operated by year in the Northeast United States.

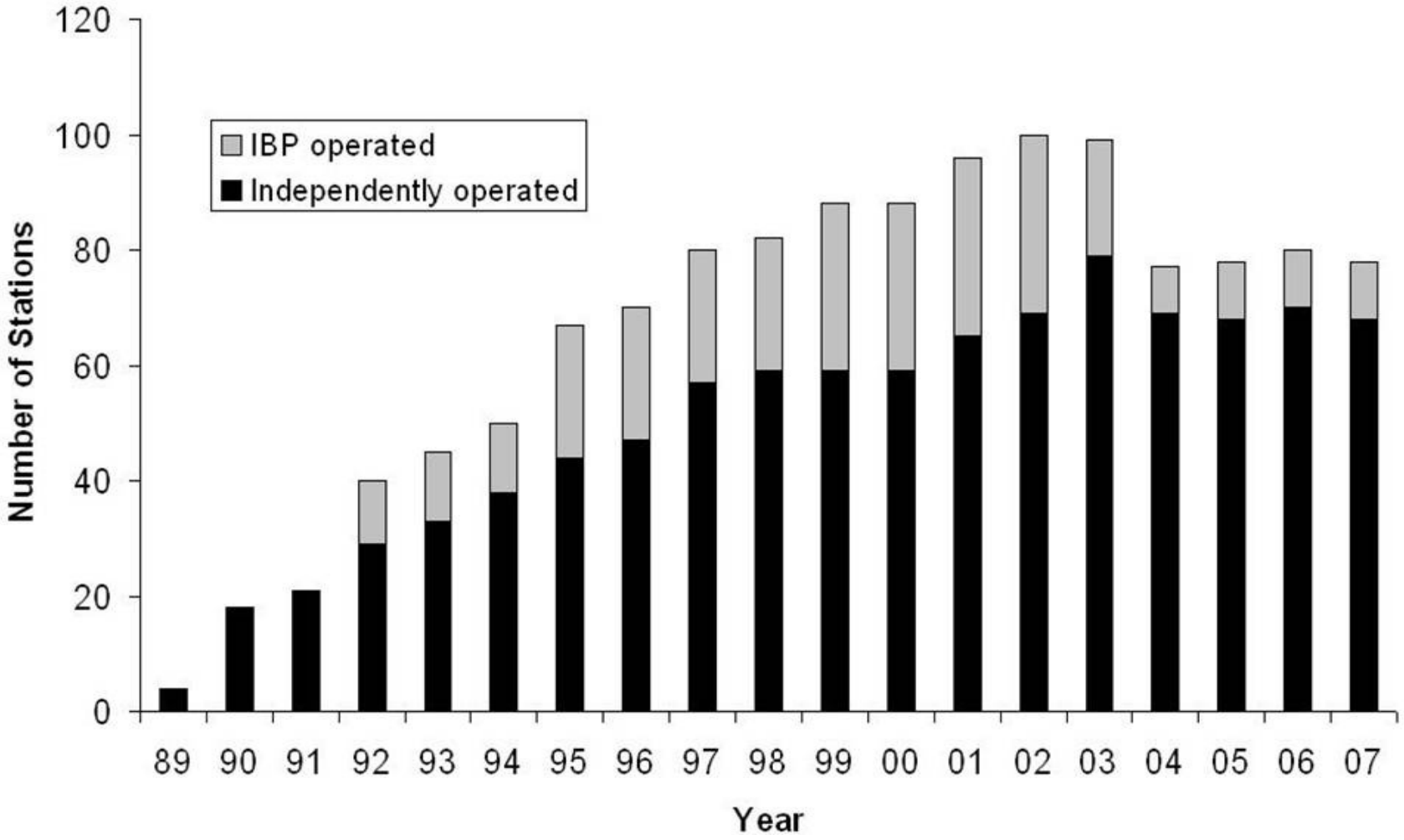


Figure 2.. MAPS stations by habitat and Bird Conservation Region (BCR) in the Northeastern U.S.

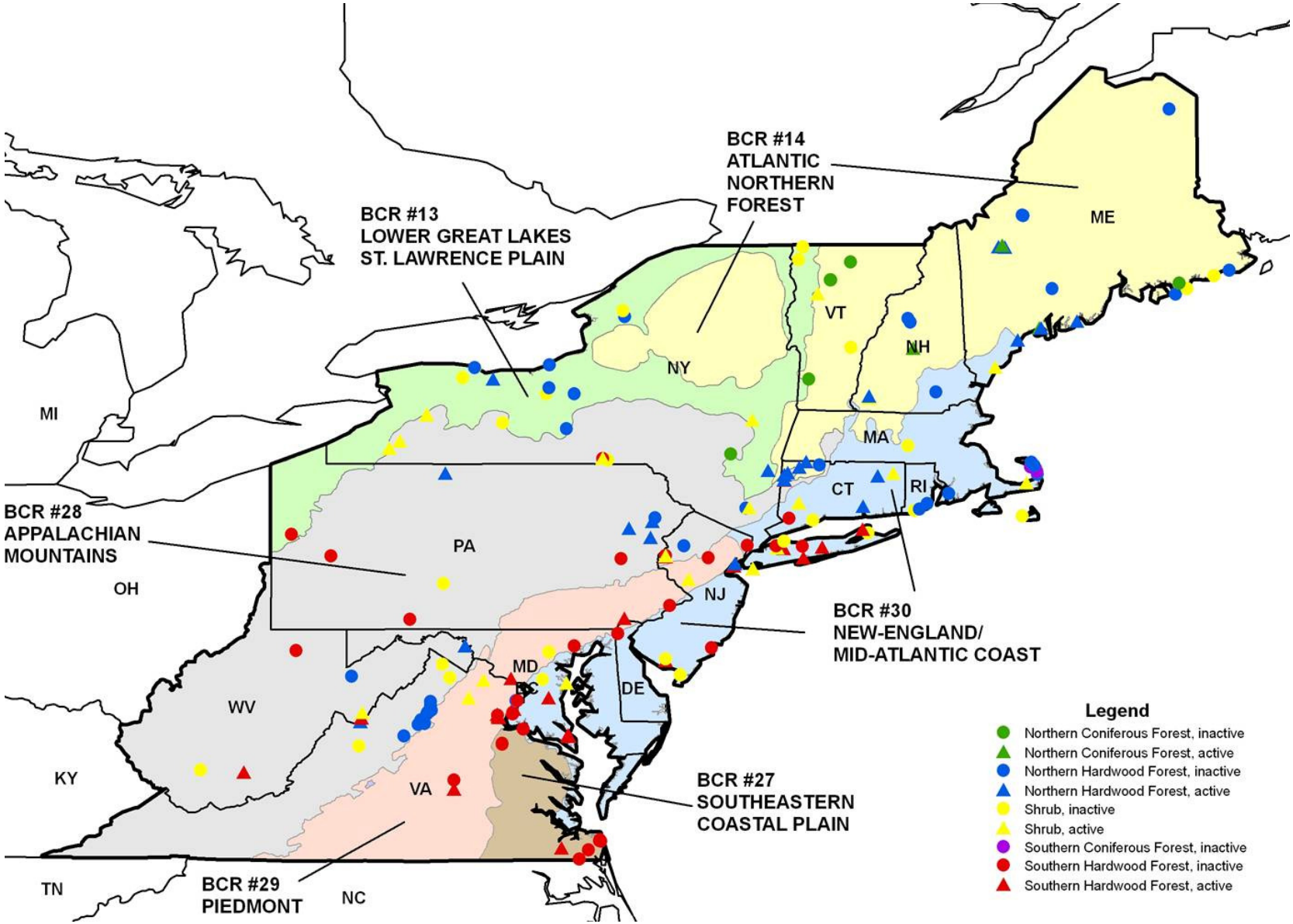
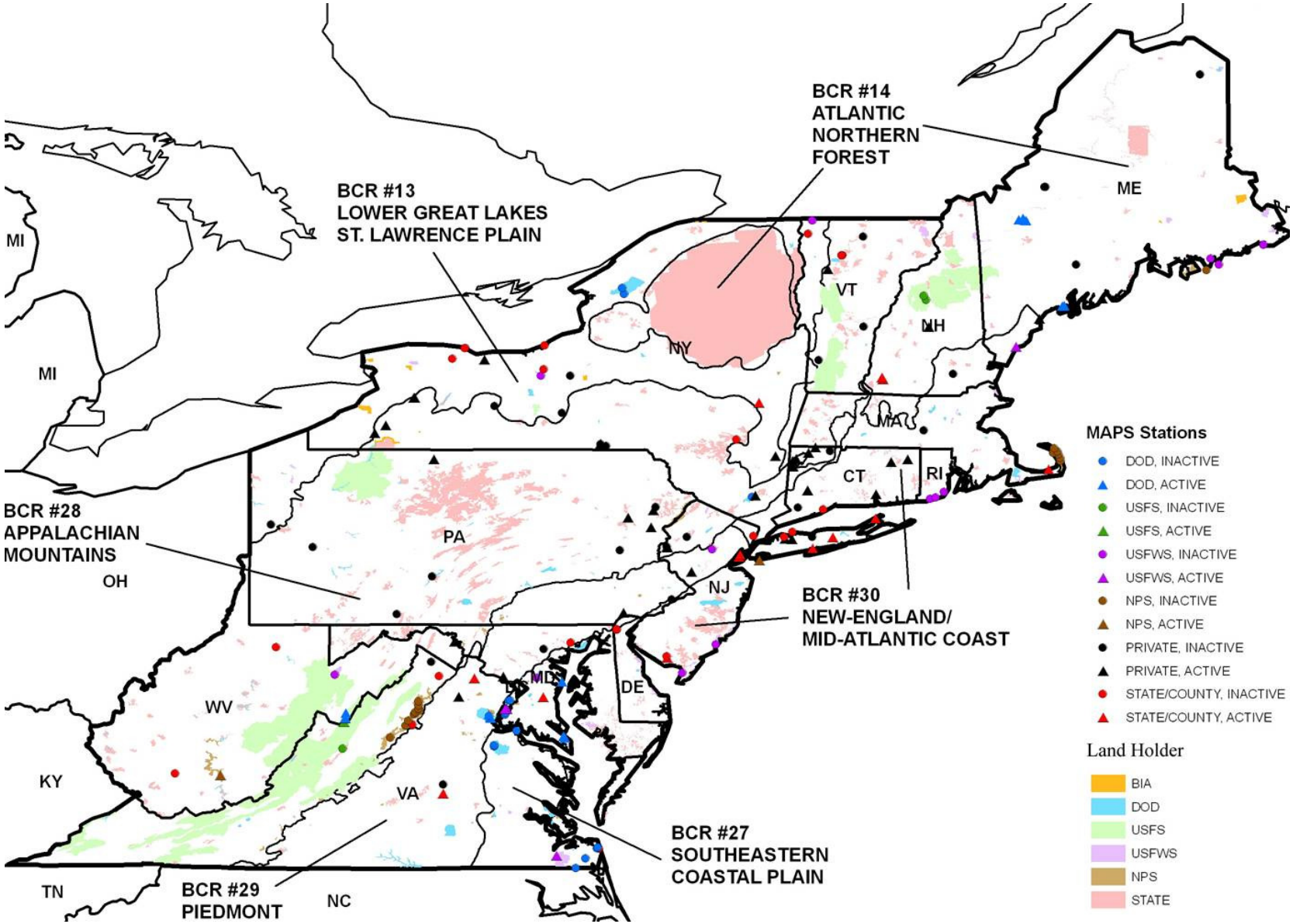


Figure 3. MAPS stations and federal and state landholdings in the Northeastern U.S.



Appendix 1. Bird Conservation Regions (BCRs) contained in the Northeast region (USFWS Region 5) and the Partners in Flight (PIF) Physiographic Areas and States that overlap these BCRs.

BCR	Area in Northeast (km^2)	Habitats[1]	PIF Areas	States
14 – Atlantic Northern Forest	165,637	SSD, NC, NH	28 – Spruce-Hardwood Forest 27 – Northern New England 26 – Adirondack Mountains	ME, VT, NH, MA, NY
13 – Lower Great Lakes / St. Lawrence Plain	68,091	SSD, NH, SH	15 – Lower Great Lakes Plain 24 – Allegheny Plateau	VT, NY, PA
28 – Appalachian Mountains	243,551	SSD, NC, NH, SH	12 – Mid-Atlantic Ridge and Valley 17 – Northern Ridge and Valley 21 – Northern Cumberland Plateau 22 – Ohio Hills 24 – Allegheny Plateau	NY, NJ, PA, MD, WV, VA
30 – New England / Mid-Atlantic Coast	71,543	SSD, NH, SH, SC	9 – Southern New England 44 – Mid-Atlantic Coastal Plain	ME, VT, NH, MA, RI, CT, NY, NJ, DE, MD, VA
29 – Piedmont	62,754	SSD, NH, SH	10 – Mid-Atlantic Piedmont 17 – Northern Ridge and Valley	NJ, PA, MD, VA
27 – Southeastern Coastal Plain	16,474	SSD, SH, SC	44 – Mid-Atlantic Coastal Plain	VA

[1] SSD = Scrub/Successional/Disturbed, NC = Northern Coniferous Forest, NH = Northern Hardwood Forest, SC = Southern Coniferous Forest, SH = Southern Hardwood Forest.

Appendix 2. Common names, scientific names, National Partners in Flight (PIF) and State Wildlife Conservation Plan designations, and habitats of regular occurrence, for considered species (see text) in the Northeastern United States. See Table 1 for description of state and PIF listing criteria.

Common name[1]	Scientific name	PIF Plan[2]	State Plan[3]	Habitat[4]
Mourning Dove	*Zenaida macroura*			SSD, SC
Yellow-billed Cuckoo	*Coccyzus americanus*	44	CT	SSD, NH, SH
Black-billed Cuckoo	*Coccyzus erythropthalmus*	9, 15, 22, 24	CT, NY, WV	SSD, NH, SH
Chimney Swift	*Chaetura pelagica*	9, 10, 22, 27, 44	VT, CT, PA	SSD
Belted Kingfisher	*Ceryle alcyon*			SSD, NH, SH
Red-headed Woodpecker	*Melanerpes erythrocephalus*	9, 10, 12, 15, 17	CT, NY, DE, MD, WV	SSD, SH
Red-bellied Woodpecker	*Melanerpes carolinus*		VT	SH, SC
Yellow-bellied Sapsucker	*Sphyrapicus varius*		WV, VA	NC, NH
Downy Woodpecker	*Picoides pubescens*			SSD, NH, SH
Hairy Woodpecker	*Picoides villosus*	9		NC, NH, SH, SC
Red-cockaded Woodpecker	*Picoides borealis*	44	MD, VA	SC
Black-backed Woodpecker	*Picoides arcticus*	27	ME, VT, NH	NC, NH
Northern Flicker	*Colaptes auratus*			SSD, NC, NH, SH, SC
Pileated Woodpecker	*Dryocopus pileatus*		RI	NH, SH
Olive-sided Flycatcher	*Contopus cooperi*	12, 26, 28	ME, VT, PA, MD, WV	NC

Appendix 2 continued.

Common name[1]	Scientific name	PIF Plan[2]	State Plan[3]	Habitat[4]
Eastern Wood-Pewee	*Contopus virens*	9, 12, 15, 17, 26, 27, 44	WV	NH, SH
Yellow-bellied Flycatcher	*Empidonax flaviventris*		PA, WV	NC
Acadian Flycatcher	*Empidonax virescens*	10, 12, 21, 22, 44	RI, CT, WV	SH
Alder Flycatcher	*Empidonax alnorum*		CT, PA, MD, WV	SSD, NC, NH
Traill's Flycatcher	*Empidonax alnorum/traillii*			SSD, NC, NH
Willow Flycatcher	*Empidonax traillii*	10, 12, 15, 17, 22, 24	ME, MA, NY	SSD
Least Flycatcher	*Empidonax minimus*	27	CT, NJ	SSD, NH
Eastern Phoebe	*Sayornis phoebe*			SSD, NH, SH
Great Crested Flycatcher	*Myiarchus crinitus*	26		NH, SH
Eastern Kingbird	*Tyrannus tyrannus*	44		SSD
Loggerhead Shrike	*Lanius ludovicianus*	10, 12, 15	ME, NY, NJ, DE, MD, WV, VA	SSD
White-eyed Vireo	*Vireo griseus*			SSD, SH
Yellow-throated Vireo	*Vireo flavifrons*	12, 22, 44		NH, SH
Blue-headed Vireo	*Vireo solitarius*		CT, NJ	NC, NH
Warbling Vireo	*Vireo gilvus*			NH, SH
Philadelphia Vireo	*Vireo philadelphicus*			NH
Red-eyed Vireo	*Vireo olivaceus*			NH, SH
Gray Jay	*Perisoreus canadensis*		VT	NC
Blue Jay	*Cyanocitta cristata*			NH, SH

Appendix 2 continued.

Common name[1]	Scientific name	PIF Plan[2]	State Plan[3]	Habitat[4]
Tree Swallow	*Tachycineta bicolor*			SSD, NH
Purple Martin	*Progne subis*		NH	SSD, NH, SH
Northern Rough-winged Swallow	*Stelgidopteryx serripennis*			SSD
Bank Swallow	*Riparia riparia*		PA	SSD
Cliff Swallow	*Hirundo pyrrhonota*		NJ, WV	SSD
Barn Swallow	*Hirundo rustica*			SSD
Carolina Chickadee	*Poecile carolinensis*	44		SH
Black-capped Chickadee	*Poecile atricapillus*			NC, NH
Boreal Chickadee	*Poecile hudsonica*			NC
Tufted Titmouse	*Baeolophus bicolor*			NH, SH
Red-breasted Nuthatch	*Sitta canadensis*			NC
White-breasted Nuthatch	*Sitta carolinensis*			NH, SH
Brown-headed Nuthatch	*Sitta pusilla*	10, 44		SC
Brown Creeper	*Certhia americana*		DE, WV	NC, NH
Carolina Wren	*Thryothorus ludovicianus*			SH, SC
Bewick's Wren	*Thryomanes bewickii*	12, 21, 22	MD, WV, VA	SSD
House Wren	*Troglodytes aedon*			SSD
Winter Wren	*Troglodytes troglodytes*		RI, VA	NC
Sedge Wren	*Cistothorus platensis*	9, 10, 12, 15, 17, 22, 24, 27, 44	ME, VT, NH, MA, CT, NY, NJ, PA, DE, MD	SSD

Appendix 2 continued.

Common name[1]	Scientific name	PIF Plan[2]	State Plan[3]	Habitat[4]
Marsh Wren	*Cistothorus palustris*	44	RI, CT, PA, WV	SSD
Golden-crowned Kinglet	*Regulus satrapa*		RI	NC
Ruby-crowned Kinglet	*Regulus calendula*			NC
Blue-gray Gnatcatcher	*Polioptila caerulea*			SSD, SH
Eastern Bluebird	*Sialia sialis*			SSD, SC
Veery	*Catharus fuscescens*	26, 27, 28	VT, NH	NH, SH
Bicknell's Thrush	*Catharus bicknelli*	24, 26, 27, 28	ME, VT, NH, NY	SSD, NC
Swainson's Thrush	*Catharus ustulatus*		PA, WV	NC
Hermit Thrush	*Catharus guttatus*		CT	NC, NH
Wood Thrush	*Hylocichla mustelina*	9, 10, 12, 17, 21, 22, 24, 26, 27, 44	VT, MA, CT, NY, PA, DE, WV	NH, SH
American Robin	*Turdus migratorius*			SSD, NC, NH, SH, SC
Gray Catbird	*Dumetella carolinensis*	27, 44		SSD, NH, SH
Northern Mockingbird	*Mimus polyglottos*			SSD
Brown Thrasher	*Toxostoma rufum*	12, 17, 44	VT, MA, CT	SSD
European Starling	*Sturnus vulgaris*			SSD, NH, SH
Cedar Waxwing	*Bombycilla cedrorum*			SSD, NC, NH, SH
Blue-winged Warbler	*Vermivora pinus*	9, 10, 12, 17, 22, 24, 44	ME, VT, MA, CT, NY, PA, DE, WV	SSD, SH

Appendix 2 continued.

Common name[1]	Scientific name	PIF Plan[2]	State Plan[3]	Habitat[4]
Golden-winged Warbler	*Vermivora chrysoptera*	9, 12, 15, 17, 21, 22, 24, 26, 27	VT, NH, MA, RI, CT, NY, NJPA, WV, VA	SSD
Tennessee Warbler	*Vermivora peregrina*			SSD, NH
Nashville Warbler	*Vermivora ruficapilla*		MD, WV	NC, NH
Northern Parula	*Parula americana*	12	MA, RI, NJ, DE	NC, SH
Yellow Warbler	*Dendroica petechia*			SSD
Chestnut-sided Warbler	*Dendroica pensylvanica*	26, 27, 28	VT, CT	SSD, NH
Magnolia Warbler	*Dendroica magnolia*			NC
Cape May Warbler	*Dendroica tigrina*	28		NC
Black-throated Blue Warbler	*Dendroica caerulescens*	9, 12, 26, 27, 28	VT, RI, CT, NY	NC, NH
Yellow-rumped Warbler	*Dendroica coronata*		WV	NC
Black-throated Green Warbler	*Dendroica virens*		NJ, VA	NC, NH, SC
Blackburnian Warbler	*Dendroica fusca*	9, 12, 26, 27, 28	RI, MD, WV	NC, NH
Yellow-throated Warbler	*Dendroica dominica*	22		SH, SC
Pine Warbler	*Dendroica pinus*	44		NC, SC
Prairie Warbler	*Dendroica discolor*	9, 10, 12, 17, 21, 22, 24, 44	ME, VT, MA, CT, DE, WV	SSD
Palm Warbler	*Dendroica palmarum*		NH	SSD, NC
Bay-breasted Warbler	*Dendroica castanea*	26, 27, 28	ME, VT, NH, NY	NC
Blackpoll Warbler	*Dendroica striata*		VT, MA, PA	SSD, NC

Appendix 2 continued.

Common name[1]	Scientific name	PIF Plan[2]	State Plan[3]	Habitat[4]
Cerulean Warbler	*Dendroica cerulea*	9, 10, 12, 15, 17, 21, 22, 24, 44	VT, NH, RI, CT, NY, NJ, PA, DE, WV, VA	SH
Black-and-white Warbler	*Mniotilta varia*	9, 26	CT	NC, NH, SH
American Redstart	*Setophaga ruticilla*	26	DE	NH, SH
Prothonotary Warbler	*Protonotaria citrea*	10, 15, 22, 44	RI, NY, WV	SH
Worm-eating Warbler	*Helmitheros vermivorum*	9, 10, 12, 17, 21, 22, 24, 44	RI, CT, NY, WV	SH
Swainson's Warbler	*Limnothlypis swainsonii*	21, 22, 44	DE, MD, WV, VA	SH
Ovenbird	*Seiurus aurocapilla*	27		NC, NH, SH
Northern Waterthrush	*Seiurus noveboracensis*		WV	NC, NH
Louisiana Waterthrush	*Seiurus motacilla*	9, 10, 12, 15, 17, 21, 22, 24	MA, NY, PA, WV	SH
Kentucky Warbler	*Oporornis formosus*	9, 10, 12, 17, 21, 22, 44	NY, NJ, WV	SH
Mourning Warbler	*Oporornis philadelphia*		MA, MD	SSD, NC
Common Yellowthroat	*Geothlypis trichas*			SSD
Hooded Warbler	*Wilsonia citrina*	12, 22, 44	DE	SH
Wilson's Warbler	*Wilsonia pusilla*			SSD, NC
Canada Warbler	*Wilsonia canadensis*	9, 10, 12, 15, 17, 24, 26, 27, 28	ME, VT, NH, MA, CT, NY, NJ	NC, NH
Yellow-breasted Chat	*Icteria virens*	12, 22	CT, NY, NJ	SSD, SH

Appendix 2 continued.

Common name[1]	Scientific name	PIF Plan[2]	State Plan[3]	Habitat[4]
Summer Tanager	*Piranga rubra*		PA	SH, SC
Scarlet Tanager	*Piranga olivacea*	9, 10, 12, 17, 22, 24, 26, 27, 44	PA	NH, SH
Eastern Towhee	*Pipilo erythrophthalmus*	9, 10, 12, 17, 22, 24, 44	VT, NH, MA, CT	SSD, SC
Bachman's Sparrow	*Aimophila aestivalis*	10, 21, 44	MD, WV, VA	SSD, SC
Chipping Sparrow	*Spizella passerina*			SSD, NC, NH, SH, SC
Field Sparrow	*Spizella pusilla*	10, 12, 15, 17, 22, 24, 44	VT, MA, CT, WV	SSD
Vesper Sparrow	*Pooecetes gramineus*		ME, VT, NH, MA, CT, NY, NJ, WV	SSD
Savannah Sparrow	*Passerculus sandwichensis*		CT, NJ	SSD
Grasshopper Sparrow	*Ammodramus savannarum*	12, 17, 22, 24, 44	ME, VT, NH, MA, RI, CT, NY, WV	SSD
Henslow's Sparrow	*Ammodramus henslowii*	9, 10, 12, 15, 17, 21, 22, 24, 44	VT, MA, NY, NJ, PA, DE, MD, WV, VA	SSD
Nelson's Sharp-tailed Sparrow	*Ammodramus nelsoni*	27, 28	ME	SSD
Saltmarsh Sharp-tailed Sparrow	*Ammodramus caudacutus*	9, 27, 44	ME, NH, MA, CT, NY, VA	SSD

Appendix 2 continued.

Common name[1]	Scientific name	PIF Plan[2]	State Plan[3]	Habitat[4]
Seaside Sparrow	*Ammodramus maritimus*	9, 44	NH, MA, RI, CT, NY, DE	SSD
Song Sparrow	*Melospiza melodia*			SSD
Lincoln's Sparrow	*Melospiza lincolnii*			SSD, NC
Swamp Sparrow	*Melospiza georgiana*		DE, MD	SSD, NC, NH
White-throated Sparrow	*Zonotrichia albicollis*		MA, RI	SSD, NC
Dark-eyed Junco	*Junco hyemalis*			SSD, NC
Northern Cardinal	*Cardinalis cardinalis*			SSD, NH, SH, SC
Rose-breasted Grosbeak	*Pheucticus ludovicianus*	9, 24, 26, 27		NH, SH
Blue Grosbeak	*Passerina caerulea*			SSD
Indigo Bunting	*Passerina cyanea*	12, 22	CT	SSD
Dickcissel	*Spiza americana*	10	NY, NJ, PA, WV	SSD
Bobolink	*Dolichonyx oryzivorus*	15, 27	ME, VT, CT, NJ	SSD
Red-winged Blackbird	*Agelaius phoeniceus*			SSD
Eastern Meadowlark	*Sturnella magna*		ME, VT, NH, MA, CT, NY, NJ	SSD
Rusty Blackbird	*Euphagus carolinus*		ME, VT, NH, NY	NC
Common Grackle	*Quiscalus quiscula*			SSD, NC, NH, SH, SC
Brown-headed Cowbird	*Molothrus ater*			SSD, NH, SH
Orchard Oriole	*Icterus spurius*		ME	NH, SH

Appendix 2 continued.

Common name[1]	Scientific name	PIF Plan[2]	State Plan[3]	Habitat[4]
Baltimore Oriole	*Icterus galbula*	9, 15, 17		NH, SH
Purple Finch	*Carpodacus purpureus*	9, 27	NH	NC, NH
House Finch	*Carpodacus mexicanus*			SSD
White-winged Crossbill	*Loxia leucoptera*			NC
Pine Siskin	*Carduelis pinus*		PA, WV	NC, NH
American Goldfinch	*Carduelis tristis*			SSD
Evening Grosbeak	*Coccothraustes vespertinus*			NC, NH
House Sparrow	*Passer domesticus*			SSD

[1] This list excludes waterbirds, nocturnal species, raptors, gamebirds, hummingbirds (not banded at most MAPS stations), migratory species that breed outside of the region, and individuals unidentified to species (with the exception of "Traill's" Flycatchers for which most species were not identified to species at MAPS stations).

[2] National Partners in Flight (PIF) Physiographic Area Plans in which the species was listed as priority or focal species. Area plans include: 9 - Southern New England; 10 - Mid Atlantic Piedmont; 12 - Mid Atlantic Ridge and Valley; 15 - Lower Great Lakes Plain; 17 - Northern Ridge and Valley; 21 - Northern Cumberland Plateau; 22 - Ohio Hills; 24 - Allegheny Plateau; 26 - Adirondack Mountains; 27 - Northern New England; 28 - Spruce-Hardwood Forest; 44 - Mid Atlantic Coastal Plain.

[3] State Wildlife Conservation Plans in which the species was listed as priority or focal species. Plans include: ME - Maine Wildlife Action Plan; NH - New Hampshire Wildlife Action Plan; VT - Vermont Wildlife Action Plan; MA - Massachusetts Wildlife Action Plan; RI - Rhode Island Wildlife Action Plan; CT - Connecticut Wildlife Action Plan; NY - New York Wildlife Conservation Strategy; NJ - New Jersey Wildlife Action Plan; PA - Pennsylvania Wildlife Action Plan; DE - Delaware Wildlife Action Plan; MD - Maryland Wildlife Diversity Conservation Plan; WV - West Virginia Conservation Action Plan; VA - Virginia Wildlife Action Plan.

[4] SSD = Scrub/Successional/Disturbed, NC = Northern Coniferous Forest, NH = Northern Hardwood Forest, SC = Southern Coniferous Forest, SH = Southern Hardwood Forest.